The Concept of Economic Freedom

On the Concept of Economic Freedom

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Introduction

ECONOMIC FREEDOM IS A CONCEPT yet to make its way formally into the economics vocabulary. Although there are many discussions of economic freedom, writers usually use the term in a vague way. Precisely what does economic freedom mean and why is the concept important? Few writers have tried to define the term, and we have found almost no attempts to relate the concept of economic freedom to the analytic framework of economics.[1]

The general concept of freedom is subject to considerable confusion, with different writers using the term in completely different ways. Without disputing the importance of inner peace, security, absence of fear or hunger, or psychic well-being unencumbered by certain undesirable emotional or mental states, we will use the term freedom to mean, roughly, the absence of coercion. This is the meaning of freedom that many people (including

previous writers) have in mind when they discuss these issues. The present paper explores concepts of economic freedom that are consistent with this view, connects those concepts with the usual analytic framework of economics, and provides a theoretical foundation for measurement of economic freedom. We propose a tentative definition of restrictions on economic freedom and explore the properties of this definition. After examining many of the issues that arise in formulating an adequate definition, we discuss some alternative definitions that are consistent with our general approach to the concept of economic freedom. Each definition suggests a way to measure restrictions on economic freedom, though the appropriate measurement may not be easy in practice.[2]

In one of the few papers on the meaning of economic freedom, Stigler (1978) argued that economic freedom is synonymous with wealth or utility.[3] We disagree with this position. While definitions are arbitrary, some are more useful than others. Our approach is intended to emphasize some important distinctions. With our concept of economic freedom, government actions that restrict economic freedom need not reduce wealth; they could raise it. Our concept allows us to consider the possibility of a tradeoff between economic freedom and other values. People may, in some cases, choose to sacrifice economic freedom for other values, or other values for economic freedom.[4]

We will not attempt to define economic freedom itself. Instead, we will define *losses* in economic freedom. We follow Hayek (1960, pp. 11-22), Friedman (1962), and others in identifying losses in economic freedom with the results of man-made coercion inhibiting voluntary economic transactions or requiring certain transactions. We believe people with widely differing opinions on the proper role of government in society should be able to agree on the meaning of (losses in) economic freedom, and recognize that some of their disagreements may involve disputes over the connections between economic freedom and other desirable ends, and the relative importance of each. People ought to agree, for example, that an excise tax on alcohol and a prohibition on growing marijuana in one's own garden (even for one's own consumption) reduce economic freedom, whatever their value may be in promoting other ends. After we propose a definition of losses in economic freedom in the next section, we will explore examples to discuss the implications of that definition and to clarify it. We will then discuss certain fundamental issues that arise in defining losses in economic

freedom and, at the end, make some remarks on why people do or should care about economic freedom and so why the distinctions our definition makes are important.

It is hard to imagine meaningful research to *measure* economic freedom prior to a decision on the meaning of the term. Any attempt to measure economic freedom (or its loss) empirically presupposes some concept of it, whether or not that concept is made explicit. As this paper will indicate, the concept of economic freedom raises intricate issues without obvious resolutions.

Restrictions on Economic Freedom

A Tentative Definition

We will explore the following definition of restrictions on economic freedom.

> Consider a constraint imposed by a third party on voluntary transactions among other people. The **loss in economic freedom** to those people from this constraint is the sum of the losses in consumer and producer surplus in those constrained transactions. If the constraint requires a person to take a specific action, the **loss in economic freedom** includes the cost to that person of that constrained action.

The term "transactions" refers as well to those a person conducts with himself. Thus a law preventing a person from growing and consuming a crop is a violation of his economic freedom. Notice that this definition automatically distinguishes and weights more and less important restrictions on economic freedom. We will clarify later the way we use the term "cost."

Constraints imposed by people versus those imposed by nature

We consider only constraints imposed by people. We want to distinguish these from constraints imposed by nature. One reason for this distinction is that the actions we would take to try to change those constraints are different. Economic freedom is not the same as technology, or wealth or utility. This does not mean that one set of constraints is more or less

important or severe than the other. It merely suggests that for some purposes it is worth making this distinction.

Governments or third parties?

The most common source of man-made constraints is government. But we need not limit ourselves to constraints imposed by official governments: other people who try to prevent, control, or tax voluntary transactions also restrict economic freedom. When an entrepreneur must pay off thugs or gangs to operate a business (or suffer physical harm to himself and his business), the effects on the entrepreneur are the same whether we regard those thugs or the "official" government as the actual government. But once we admit this, there is no limit to how many governments may restrict a person's economic freedom or who they may be. We could, of course, discuss the loss in economic freedom caused by a particular party, such as an official government. Or we could discuss the loss in economic freedom imposed by all governments and thugs on particular people.

Two types of constraints

As our tentative definition makes clear, there are two types of restrictions that a third party can place on economic freedom. The tentative definition simply defines and then adds the losses from each type of restriction. We might instead place different weights on these losses or consider losses in economic freedom to be multidimensional. We will return to these issues when we consider some alternative definitions.

Basic Examples of Restrictions on Economic Freedom

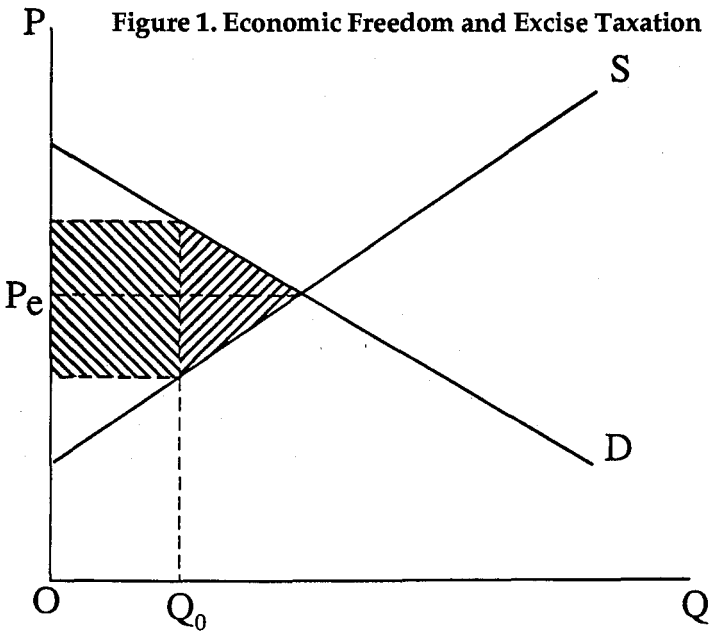
We will begin exploring the consequences of our tentative definition by considering very simple cases, and proceed to more complicated situations in which some difficult issues arise. We will initially assume that there is general agreement about the distribution of property rights among people in an economy,[5] that property rights are complete (universal, exclusive, and transferable), with no transactions costs, and that the government owns no property. We also assume there is a legal system defining and enforcing those property rights. We will consider initially a *single* restriction on

economic freedom, and leave for later problems that arise with multiple restrictions.

Transfers

Transfers between agents imposed by government represent a clear loss of economic freedom to those making the payments. Suppose the government taxes Peter $100 to pay Paul $100. Then Peter's wealth *and* economic freedom have been reduced by $100. Paul is a recipient, and his wealth rises by $100, but this transfer does not raise his economic freedom. Clearly, our use of the term economic freedom is at odds with Stigler (1978), who identified liberty or freedom with wealth or utility and would describe Paul's economic freedom as having risen. We certainly agree that Paul is now "free" to expand his consumption set, but we do not believe this represents an increase in economic freedom. Economic freedom is something an individual possesses until deprived of it by government or third parties. One advantage of thinking about *losses* in economic freedom rather than economic freedom itself is that it emphasizes this point: the transfer to Paul does not mitigate in any way Paul's loss of economic freedom from other restrictions.

Figure 1. Economic Freedom and Excise Taxation



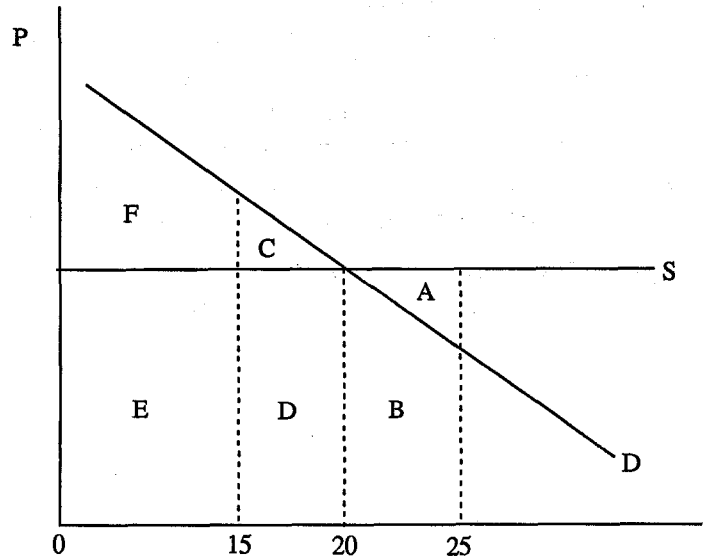
An Excise Tax

We can obtain more insight into our definition of a loss in economic freedom by considering a simple excise tax on a commodity in which market forces are depicted in Figure 1. The tax restricts sales to level Q_0, and the height of the shaded area represents the level of the tax. The tax causes producers and consumers to restrict their economic exchanges with each other; the shaded triangle shows the loss in producer and consumer surplus on these foregone transactions. On the sales of Q_0 that remain, the shaded rectangle shows the sum of the losses in consumer and producer surplus, so the entire shaded area captures the loss in economic freedom from the tax. The shaded rectangle also represents tax payments to the government, which it can disburse in any number of ways. Thus there may be other recipients of this tax revenue, but this does not increase the economic freedom of those recipients, although it increases their wealth. Later, in discussing tariffs, we consider the case in which the tax income is redistributed to the *same* people who have been deprived of economic freedom.[6]

Minimum Consumption Requirements

Consider a government restriction that requires people to buy *at least* X units of a good. The amount X may be more or less than people would have chosen voluntarily. The loss in economic freedom from this restriction is the cost of minimal compliance with the restriction. If the government requires people to buy at least 25 units of the good, the loss in economic freedom is area A+B+D+E in Figure 2. If the government requires people to buy at least 20 units of the good (the amount they would have bought anyway), their loss in economic freedom is area D+E in Figure 2. If the government requires them to buy at least 15 units of the good (less than they would have bought anyway), their loss in economic freedom is area E in Figure 2. If the supply curve were upward-sloping when they are required to buy at least 15 units of the good, the loss in economic freedom is area E in Figure 3. In this case, the loss of economic freedom is *less* than the actual cost of buying those 15 units of the good: the fact that the price is higher is a result not of the constraint but of consumers' voluntary choices to buy more than 15 units.

Figure 2. Economic Freedom and Mandated Consumption: Constant Costs



Notice one consequence of this definition of economic freedom: the loss in economic freedom from a government minimal-purchase requirement that costs $100 to comply with is the same as the loss in economic freedom from a lump-sum $100 tax in which the government destroys the (real) tax revenue, even though people get valuable goods in return in the first case and not in the second case. This highlights one distinction between economic freedom and utility or wealth.

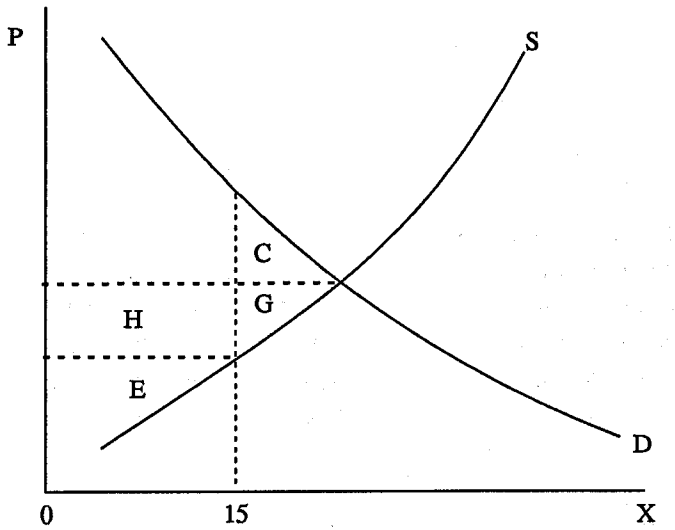
Maximum Consumption Requirements

Suppose instead the government requires people to buy *no more* than X units of a good. The amount X may again be more or less than people would have chosen voluntarily. If this restriction is binding, as if X is 15 units in Figure 2, then the loss in economic freedom is the loss in consumer and producer surplus, which is area C in Figure 2 (with a horizontal supply curve) or area C+G+H in Figure 3 (with an upward-sloping supply curve). If the restriction is *not* binding—if X equals or exceeds the amount of the good that people would have bought voluntarily, then there is *no loss* in economic freedom from this restriction.[7]

Government Quantity Coercion

Suppose the government requires people to consume *exactly X units* of a good. We will initially consider the case in which X is *precisely* the amount people would have consumed without the constraint: 20 units in Figure 2.[8] Our definition implies that this constraint imposes a loss in economic freedom, even though the constraint imposes *no* loss in utility.[9] The loss in economic freedom is the cost of consuming X units of the good: the sum of areas D and E in Figure 2. Although people would have chosen this quantity

Figure 3. Economic Freedom and Mandated Consumption: Upward Sloping Supply



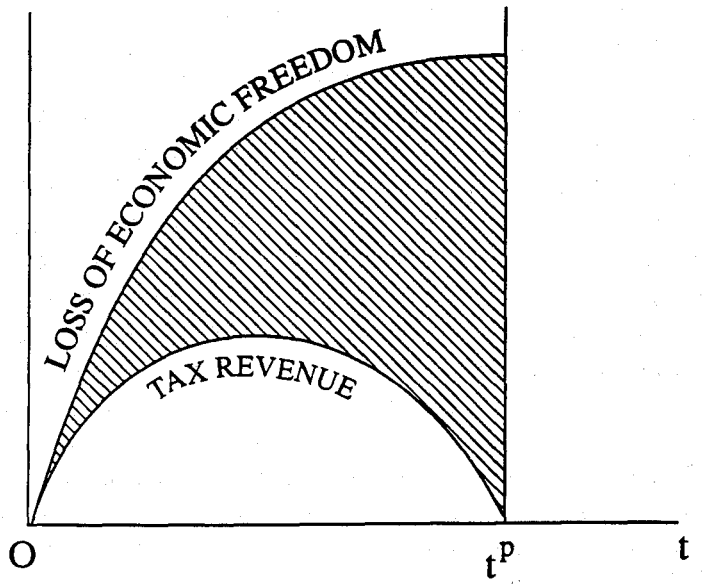
freely without the constraint, they lose economic freedom because they are no longer free to *choose* to do so; they are *forced* instead. Although our example concerns consumers, analogous arguments apply to constraints on firms, as when the government requires firms to provide a certain amount of health insurance or parental leave. (The following discussions of minimum and maximum consumption requirements also apply to production requirements or other constraints on firms.)

Suppose the government requires people to consume *more* than they would have consumed voluntarily without the constraint, such as 25 units

when they would have bought 20. The loss in economic freedom is the cost of this required action: the area A+B+D+E in Figure 2.[10]

Suppose instead the government requires people to consume *less* of the good than they would have chosen without the constraint, such as 15 units rather than 20. Then the loss in economic freedom is area E+C in Figure 2. Area E represents the loss in economic freedom from being required to buy

Figure 4. Economic Freedom and Tax Revenue



no less than the quantity 15. Area C represents the loss in economic freedom from being required to buy *no more* than the quantity 15. Figure 3 shows the result with an upward-sloping supply curve: the loss in economic freedom from a constraint that requires people to consume exactly 15 units (no more, no less) is area C+G+H+E in Figure 3. The area E shows the loss in economic freedom from being required to buy no less than 15 units of the good. The area H shows a loss in economic freedom from a loss in producer surplus that equals a gain in consumer surplus; this gain in consumer surplus is an increase in consumers' wealth but *not* in their economic freedom. The areas C and G represent losses in consumer and producer surplus that are also losses in wealth.

A Note on Economic Freedom and Utility

When the government requires people to consume *exactly* X units of a good, where X is the amount they would have chosen voluntarily without the constraint, the loss in economic freedom is shown by areas such as D+E in Figure 2. Now suppose the government reduces X. This clearly lowers utility as consumers are pushed away from their most desired consumption bundle. But it (initially) *raises* economic freedom, or, in our language, *reduces the loss* in economic freedom. For example, suppose X=15 in Figure 2. The loss in economic freedom is area E+C, which is smaller than E+D because C<D. This may appear to be a strange result—that people who are *required* to consume *precisely* the amount they would have chosen voluntarily could be *less free* than people who are required to consume less of the good. But this result appears strange only when one forgets the distinction between economic freedom and utility. While utility falls, there are *two* forces operating on economic freedom. The requirement that a person buy *exactly* X units of a good is a composite of two requirements: that he buy no *less* than X, and that he buy no *more* than X. When the government reduces X, economic freedom tends to rise because the loss in economic freedom from the *minimum*-consumption constraint falls: that minimum-consumption constraint becomes less severe. This is the gain in economic freedom of D in Figure 2. On the other hand, economic freedom tends to fall when the government reduces X because the *maximum*-consumption requirement becomes *more* severe. This is the loss in economic freedom of C in Figure 2. Whether a reduction in government-mandated consumption of a good lowers or raises economic freedom at the margin depends on the shapes of the demand and supply curves. However, a small reduction in the restriction, from a position where the mandated consumption exactly matches the unrestricted bundle, always reduces the loss in economic freedom.

Restrictions on Asset Transactions

Suppose the government imposes a restriction that prevents you from holding some financial asset. We can derive a demand curve for that financial asset using standard optimal-portfolio analysis. The loss in economic freedom from this restriction is analogous to the consumer-surplus loss from a prohibition on buying some good. If another asset that is a

perfect substitute (in your view) is available, there is no loss of consumer surplus or economic freedom. Otherwise, the loss in economic freedom corresponds to the foregone interest or foregone value of a portfolio with better risk properties.

Should the analogy with consumer markets carry over to asset markets when the government requires you to hold a certain security? Suppose the government forces you to buy a bond issued by some private corporation. If its rate of return is lower than market alternatives, then you have lost economic freedom. Suppose, however, that the interest rate on this asset equals the market equilibrium interest rate. If you were already holding these bonds (or equivalent assets), then we *could* say there is a loss in economic freedom equal to the cost of buying (or not selling) the bonds, in analogy with requirements that you consume certain products. Alternatively, if there is no loss in the value of the portfolio, one could say there is no loss in economic freedom. At this stage of our argument, this alternative looks unattractive. However, issues will arise later in this paper that suggest consideration of this alternative definition (see Section 6 on bundling, particularly the withholding tax example).

Tax Payments and Economic Freedom

Some people have argued that government tax receipts serve as a useful proxy for the loss of economic freedom. Suppose the excise tax illustrated in Figure 1 represents the only interference on voluntary transactions. Figure 4 illustrates that at low tax rates the identification of tax revenues and loss of economic freedom is entirely appropriate. However, as tax rates increase, the gap between the two concepts widens. Indeed, for tax rates sufficiently high that receipts are falling, the two measures go in opposite directions. Tax revenue is zero at the prohibitive tax rate, whereas this is the rate that maximizes the loss in economic freedom.

To fill in details, let t denote a specific excise tax in this market and R represent tax revenue. Thus

$$dR/dt = Q + t\,dQ/dt,$$

with the second term negative. As for the loss in economic freedom, a small increase in the tax rate raises price to consumers by dp^D, so that the loss in consumer surplus reflected by this price increase is the "terms-of-trade"

effect, Qdp^D. Producers see their price decreased by the tax, eventuating in a "terms-of-trade" loss for them of $-Qdp^S$. Adding these effects, the total increment to the loss in economic freedom, L, is

$$dL/dt = Q,$$

where dt equals the sum of dp^D and $-dp^S$. Thus the two curves in Figure 4 are tangent to each other at the origin, and at the prohibitive tax rate the "loss in economic freedom" curve becomes horizontal. Economists are prone to dismiss welfare triangles as being relatively unimportant compared with rectangles. This, we submit, leads to gross error if tax rates are high or if government regulations prohibit certain types of economic transactions. A prohibition of market activity in Figure 1 leads to a loss of economic welfare (freedom) that is captured *entirely* by a triangle.

Economic Freedom Is Not Economic Efficiency

Expand the setting, now, to include a variety of private transactions in which the government has levied excise taxes, including taxes and other restrictions in factor markets that create gaps between returns paid to factors across industries. These restrictions create inefficiencies corresponding to an inward shrinkage of the transformation schedule and inequality between the slopes of indifference curves and transformation schedules. The loss in efficiency due to these government restrictions and taxes, however, differs from the loss in economic freedom from those government actions. Recall the simple case in which the government taxes Peter to pay Paul, and suppose Peter pays a lump-sum (poll) tax. That case involves a loss of economic freedom without any change in aggregate production or consumption. With widespread taxes and subsidies, economic inefficiency nets out the gainers and losers, but losses in economic freedom do *not* net out. Peter's loss in wealth is Paul's gain, but Peter's loss in economic freedom is not offset by any increase in economic freedom for Paul. In the case of excise taxes, the loss in economic freedom is reflected in dead-weight welfare losses to society (triangles of the type shown in Figure 1) *and* the tax payments (the rectangle in the figure). While the government may redistribute those tax payments to other people, those payments nevertheless represent losses in economic freedom.

Restrictions on Economic Freedom Affect Other Markets

While measures involving total tax collections, on the one hand, or total net efficiency losses, on the other, underestimate the loss of economic freedom represented by a government activity, we can contemplate a measure that would typically overestimate the loss in economic freedom. Consider any government activity such as a tax, expenditure, or regulation. In an interconnected economy each such activity disturbs many commodity and factor markets, changing many relative prices. For each such price change there are gainers and losers: net suppliers and net demanders of goods whose relative prices change. One *could* add all these losses (and ignore the gains) when measuring the loss in economic freedom from the governmental activity.[11] But that is not what our definition says to do. Our definition tells us to include only the losses from transactions that are directly constrained. A government restriction on buying good X may change other relative prices and, through this route, alter real incomes of net buyers and sellers of other goods. While those changes in real income result from the government action, they are not restrictions on economic freedom: no one is restricting transactions involving those goods. This implies again that freedom and welfare are fundamentally different.

Some General Equilibrium Considerations

The earlier discussion of a single excise tax illustrated the loss of economic freedom reflected in losses in consumer and producer surplus in the market being taxed. In this section we sketch out a scenario to analyze some general-equilibrium ramifications of government restrictions.

Pears, Peaches and Cream

Consider an economy producing and consuming three commodities: pears, peaches, and cream. Peaches and pears are substitutes to consumers, whereas peaches and cream are complements. (We assume away any connections on the supply side.) From an initial undistorted equilibrium, suppose the government levies an excise tax on peaches. This imposes losses in economic freedom of the type illustrated by the shaded areas in

Figure 1. Here, though, the rise in the price of peaches to consumers affects the pear and cream markets. The demand for pears shifts to the right, and the demand for cream shifts to the left. The price of pears rises. Although net demanders of pears lose wealth from this price rise, they do not lose economic freedom. Focus on someone who is a net buyer of peaches; this person lost economic freedom from the tax on peaches. If this person is a large net seller of pears, she will *gain* wealth on net from the tax on peaches since her terms of trade improve. If we included this change in the terms of trade in our measure of the loss of economic freedom, this person would not have suffered any loss in freedom despite the imposition of the tax. This example shows why one should ignore such terms-of-trade changes in measuring the loss in economic freedom from the tax on peaches, although they properly belong in a calculation of changes in economic welfare.

Now suppose the tax on peaches remains fixed and a tax is levied on pears. There is a loss in economic freedom to transactors in the pear market. But there is a further calculation now that needs to be made, to take account of the greater demand for peaches, since they are substitutes for pears. This shift in demand, due to the tax on pears, alters the loss in economic freedom from the tax on peaches. This is akin to a "volume-of-trade" effect, as in international markets. However, the sign of the change in economic freedom is precisely *opposite* to the effect typically considered for economic welfare. In standard welfare analysis an increase in consumption of an item that is taxed (peaches) at a given rate *increases* economic welfare because the item is worth more at the margin to consumers than the marginal cost of production. This very same change, however, is an increase in the volume of activity in a market that restricts economic freedom.

Again retain a fixed tax on peaches and suppose that (instead of a tax on pears) the government imposes an excise tax on cream. Since peaches and cream are complements, the direct loss in economic freedom from the tax on cream is accompanied by a reduction in the loss in economic freedom from the tax on peaches. The change in the peach market might even outweigh that in the cream market. This is akin to the "second-best" phenomenon in welfare analysis—here an increase in one restriction (the tax on cream) deflects demand from a market that is already taxed (peaches), with the possibility that the loss in economic freedom reflected in the entire tax system will have been mitigated.

The examples discussed above clarify our definition of economic freedom: the *change* in economic freedom from adding a new constraint is the sum of losses in consumer and producer surplus associated with the newly-constrained transactions *plus* the altered losses of economic freedom from constraints on *other* voluntary transactions.

International Transactions

To the extent that a country's residents are involved in international transactions, governmental restrictions on voluntary transactions affect the economic freedom of foreign as well as home residents. In principle a measure could be conceived of the loss in economic freedom imposed on *home* residents by the totality of all restrictions, whether imposed by home third parties or government, or alien ones. Instead, we concentrate on the concept of the loss of economic freedom entailed by restrictions imposed by home third parties or government, thus facilitating a comparison of the restrictive policies adopted by different nations.

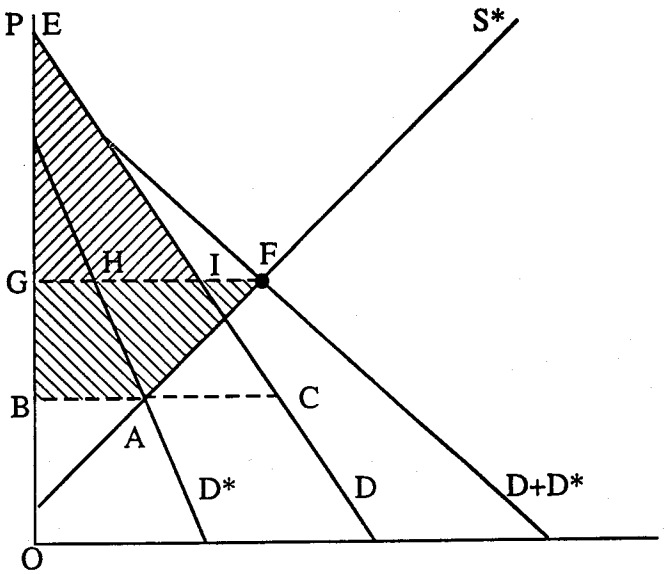
A Ban on Foreign Goods

Our first simple scenario involving international transactions presupposes that we are entirely dependent on foreign sources for some commodity. Figure 5 illustrates a free trade equilibrium at point F, with the total of our demand (D) and foreign demand (D*) matching total supply, all of it foreign (S*). If our government had banned all imports of this commodity, the equilibrium abroad would be shown by point A. Potential home consumers look enviously at price *0B*, and would demand quantity *BC* at that price. However, triangle *EBC* overestimates the loss in home consumer surplus as a result of the ban on imports. If there were no government interference, the price would be *0G*, so that the ban wipes out home consumer surplus by the triangle *EGI*.

Figure 5 also indicates the shaded area, *BGFA* of relevance to foreign producers. The home country's ban on imports from abroad would represent a restriction on the economic freedom of two groups: home consumers lose area *EGI*, and foreign producers lose *BGFA*. The import ban admittedly favors one group: foreign consumers gain area *GHAB*. In calculating the loss in economic freedom to home residents and foreigners, should this gain

to foreign consumers be netted out of the losses to home consumers and foreign producers? We have argued against this procedure. In discussing government taxation of Peter to pay Paul, we emphasized the loss of economic freedom to Peter; the gain to Paul is an increase in his welfare, but not in his economic freedom. The present situation is analogous, but slightly different in that the ban on trade results in a loss of freedom (and welfare) to home consumers and foreign producers which outweighs the gain in welfare (but not in freedom) to foreign consumers. This discrepancy is the deadweight loss from preventing mutually profitable trade.

Figure 5. Economic Freedom and International Trade



A Tariff Hike

Turning now from a complete ban on imports to a situation in which they are allowed, subject to a (specific) rate of duty, we analyze the effect on economic freedom of a small tariff hike, and contrast this with the effect of such an increase in duties on real income or welfare in the home country.

We suppose that tariff rates are lower than the "optimal" rate, so that a small increase would, via standard analysis, raise home real incomes and tariff revenue. This presupposes that changes in our rate are sufficient to force changes in foreign supply price (the "large-country" case). We assume (for simplicity) that foreign producers have no local market, but we now include a set of home producers who share the home market with imports. The change in real income at home (dy) can be broken down into a terms-of-trade effect and a volume-of-trade effect:

$$dy = -Mdp^* + tdM,$$

where M represents the volume of imports, t the specific tariff rate, and p^* the foreign price of importables (our terms of trade). We have assumed dy to be positive for a small rise in t from low levels. This net gain is made up of three parts: (i) the government's tariff revenue increases by d(tM); (ii) home suppliers have an increase in producer surplus given by xdp, where x denotes home production and p is the domestic price behind the tariff wall; and (iii) home consumers lose real income by an amount Ddp, where D is total home demand. The change in real income abroad is captured only by the terms-of-trade effect:

$$dy^* = Mdp^*$$

As for the loss in economic freedom produced by the tariff hike, home consumers have lost Ddp. Any subsequent redistribution of tariff proceeds may help to compensate consumers, but if the amount of such redistribution received by any consumer is independent of his purchases, the restriction on economic freedom is not thereby lessened. The change in real income and the change in economic freedom are separate concepts. Abroad the loss in economic freedom is $-Mdp^*$, so that the home government's increase in the tariff rate has resulted in a total loss of economic freedom of:[12]

$$(x + M)dp - Mdp^* = xdp + Mdt.$$

One final calculation is instructive. The home government might claim that its action has raised home real incomes by imposing a loss in economic

freedom. How do these two aggregates compare? The loss in economic freedom exceeds the gain in the home country's real income; this excess is shown by:

$$\{Ddp - Mdp^*\} - \{-Mdp^* + tdM\} = Ddp - tdM$$

That is, the loss in economic freedom exceeds the gain in home real incomes by the sum of the loss in consumer surplus and the deadweight loss to the world of the tariff hike, the latter captured by the tax spread times the reduction in imports.

Bundling Constraints on Voluntary Transactions

A Fundamental Problem in Measuring Economic Freedom

Governments impose many constraints on voluntary actions. People are often beneficiaries of some government programs and losers from others. In a typical welfare state, the government may take $X from an average person and return $Y worth of transfer payments and goods (both public goods and government-provided private goods); typically we have $X > $Y.[13] Any attempt to measure economic freedom in a country like this must come to grips with a fundamental issue: roughly, does the loss in economic freedom refer to the *gross* take of the government $X or the *net* take of the government $X-$Y? We will refer to this as the *bundling issue.* The question is whether various government actions should be bundled together and considered as a group, so that a person's loss in economic freedom from the bundle of actions refers to his *net* (consumer and producer) surplus loss from this bundle of government actions, or whether each government action should be considered separately, so that a person's loss in economic freedom from *each* separate government constraint is his (consumer or producer) surplus loss from *that* constraint, and his total loss in economic freedom from all the government actions is the sum of these separate losses in economic freedom.[14] These two ways of measuring economic freedom would give vastly different answers in any real-life

situation, particularly in societies with high taxes and a large government sector. We will argue below that the answer to the bundling problem is not at all clear — a good case can be made for (and against) two alternative answers with quite different empirical consequences. Any attempt to measure economic freedom and compare it over time or across countries must implicitly assume some answer to this fundamental bundling question. Yet the following sections suggest that doing so is fraught with difficulties.

We do not believe there is a clear answer to the bundling problem: we believe that there are *several alternative notions of economic freedom* which answer the bundling question in different ways, and that no single measure captures all the features of economic freedom that most people have in mind when they use that term. We now present several short, highly stylized examples in which we think there is room for disagreement about the best answer to the bundling problem.

(1) Pass the Buck (the Circle Game)

Suppose the government forces people to sit in a circle and to give a dollar to the person on one's left. Each person, therefore, does two things: gives a dollar and collects a dollar.[15] The government's requirements do not reduce anyone's wealth. The question is whether it reduces economic freedom.

One answer is to consider the requirement to participate in the circle as the constraint on people, which means bundling together the required payment with the left hand and receipt with the right hand. Then we would say there is no loss in economic freedom. The other answer is not to bundle these constraints: to separate the requirement that one must pay a dollar from the fact that the government's circle program also provides each person with a dollar. Then we would say each person loses one dollar in economic freedom from the requirement to participate in the circle, though no one loses wealth (or, perhaps, utility). The unbundling solution makes a clear distinction between constraints that lessen economic freedom and changes in wealth.

Suppose the government taxes Peter $100 to pay Paul $100, and taxes Paul $100 to pay Peter $100. To focus on the key question, suppose these are lump-sum taxes. If we bundle the two constraints together, we would say the loss in economic freedom is zero (and equal to the loss in wealth).

If we unbundle the two constraints, the loss in economic freedom is $200 ($100 to each person).

(2) A Withholding Tax

Suppose the government does *two* things if you work an additional hour: out of each additional dollar earned, (1) it takes 40 cents as withholding tax, and (2) it refunds 10 cents the following May. If we bundle the government activities, we would say the loss in economic freedom is 30 cents (plus several months' interest on the 40 cents) per extra dollar earned. If we unbundle them, we would say the loss in economic freedom is 40 cents (the amount people were forced to pay). We might want to bundle, however, when the government does several things if people undertake some voluntary transaction. We could say these several government actions *jointly* form a constraint on the transaction. The loss in economic freedom from this constraint would then be the *net* sum of the losses in consumer and producer surplus in those constrained transactions: we would bundle together these government actions before calculating the loss in economic freedom.

A withholding tax is an example of a forced loan to the government, to which we return below in the subsection on perceptions.

(3) A Sales Tax with a Lump-sum Transfer to Consumers

Suppose the government levies an excise tax on consumption of a good and uses the tax revenue to finance lump-sum transfers to the group of (identical) people who happen to buy the good. (We will suppose that the subsidy is lump-sum, so it does not depend on the decision to buy or how much to buy.) If we bundle the tax and the transfer, the loss in economic freedom is the shaded triangle in Figure 1. If we unbundle, the loss in economic freedom is the entire shaded area in Figure 1.

(4) A Maximum-consumption Constraint with an Offsetting Lump-sum Transfer from Consumers to Producers

Look back at Figure 3. Suppose the government requires that people consume *no more* than 15 units of a good. We argued earlier that the loss in

economic freedom from this constraint is H+C+G. Now suppose the government combines this constraint with a lump-sum tax on consumers equal to H and a lump-sum transfer to producers equal to H. If we bundle these government actions together, we would say the loss in economic freedom is C+G, which also equals the efficiency loss from the maximum-consumption constraint. If we unbundle, then we say the tax/transfer program is like taxing Peter to pay Paul: it causes a loss in economic freedom equal to H. And since we are unbundling, we add this loss in economic freedom to the original loss H+C+G. Then we would say the total loss in economic freedom is 2H+C+G.

(5) A Sales Tax and a Production Subsidy

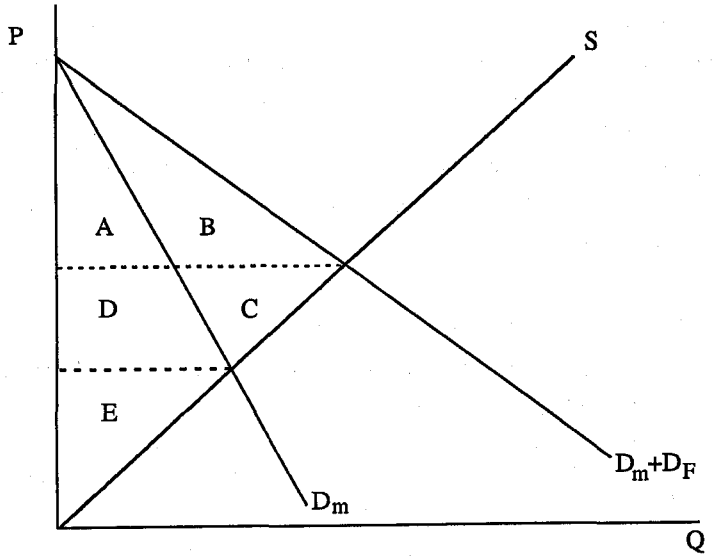
Suppose the government levies a $10-per-unit tax on consumption of a good and subsidizes producers of the good $10 per unit. The tax *alone*, aside from the disposition of the tax revenue, causes a loss in economic freedom equal to the shaded area in Figure 1. The subsidy alone, aside from the taxes to finance it, causes no loss in economic freedom. If we *un*bundle, the loss in economic freedom is then the shaded area in Figure 1. If we bundle, there is *no* loss in economic freedom.

(6) Prohibitions on Sales to Particular Groups

Suppose the government prohibits females from buying goods and that this prohibition is effective.[16] Figure 6 shows the supply, the demand by males, and the total demand by males and females. The loss in economic freedom from an effective prohibition on female customers is area B+C+D. The fall in demand lowers the price, so male customers gain wealth. Area D is part of the loss in producer surplus from the restraint preventing sales to females, the part that is a gain to males.

Now suppose the government *adds* the constraint that males cannot buy the good. Given the prohibition on females, this prohibition on males reduces economic freedom by the amount A+D+E. So if we unbundle these two constraints, the loss in economic freedom would be A+B+C+2*D*+E, while if we bundle them the loss in economic freedom would be A+B+C+D+E. The problem is that the male group gains utility when females are banned. Although this gain is not counted as a positive incre-

Figure 6. Economic Freedom and Selective Prohibitions



ment to economic freedom, the subsequent loss of this gain *is* counted when the government prohibitions are not bundled. Since any restraint on a group of people can be reinterpreted as a constraint on each member of the group, or each subset of the group (such as males and females), it appears we must bundle the constraints in this case. In general, it appears that whenever a constraint on a *single* good[17] applies to *many* people, we should bundle the constraints.

Perceptions

One possible solution to the bundling problem aside from complete bundling or complete unbundling involves bundling in cases where people *perceive* government actions to be bundled. If people *think* two or more government programs or constraints are linked, then we would bundle them. Otherwise we would unbundle them. But this solution introduces a new "expectations" feature that creates difficulties for measurement of economic freedom. And it also creates other new problems, such as how to deal with situations in which people differ in their perceptions about how government programs are linked, how to deal with cases in which people

have never thought about the issue, and how to deal with situations in which people think programs are *weakly* linked.

Nevertheless, differences in perceptions appear to matter. Suppose the government requires Peter to pay $100 to Paul in year 1, and requires Paul to pay $110 to Peter in year 2. Moreover, suppose the market interest rate is 10 percent per year. There are at least two ways to calculate the loss in economic freedom.

(1) We can view this as two separate tax/transfer schemes (see "pass the buck" above). Then the loss in economic freedom in year 1 is $100, and the loss in economic freedom in year 2 is $110. The discounted present value of the loss in economic freedom is $200.

(2) Alternatively, we can view this as a forced loan. Then the loss in economic freedom is $10 (in one of the years).

Which of these views should we adopt? The answer perhaps depends on the *perceptions* of the people involved. If Peter views this constraint as a tax rather than a loan, then view (1) seems appropriate. But if Peter views the constraint as a forced loan, view (2) seems appropriate.

A Suggested Guide to Bundling

A general principle concerning bundling might be the following: ask whether the candidates for bundling are all consequences of a single voluntary (individual) choice; if so, bundle the constraints; if not, do not bundle. In the withholding-tax example, this principle implies the loss in economic freedom would be 30 cents per dollar earned (plus the foregone interest), i.e., the tax.[18] On the other hand, this principle implies we should *not* bundle a sales tax and a lump-sum transfer to the people who happen to buy the good.

Some Other Issues

Government Ownership and the System of Property Rights

Our concept of economic freedom presupposes some allocation of property rights. Property rights are like bundles of sticks, with each stick representing the right to use property in a particular way. One way to define

economic freedom is relative to an *arbitrary* allocation of property rights. Given any arbitrary initial distribution of property rights, *restrictions on economic freedom* occur if the government changes, violates, or refuses to enforce those property rights. A problem with this way of viewing economic freedom is illustrated by a 50-percent income tax. One could say the government owns half of all labor services. Then when someone sells labor services, a 50% income tax would not reduce economic freedom. It would not be a tax at all; it would be merely a recovery of the government's property.

An alternative way to define economic freedom is relative to a *particular* allocation of property rights, or a particular set of allocations. Then allocations of property rights outside this set are *per se* violations of economic freedom. For example, one could argue that if the government owns any valuable resource, this constitutes a loss in economic freedom. This is a natural extension of the notion that a tax on sales of a good (such as labor services) results in a loss in economic freedom of the tax payment plus the deadweight social loss from the tax. A tax of **k** percent is equivalent to the government saying it owns k percent of the good (and is just collecting its revenue from the sale). If **k** is 10 percent, 50 percent, or 90 percent, we say there is a loss in economic freedom equal to the shaded area in Figure 1. Now suppose **k** is 100 percent, in which case the government owns the property. The loss in economic freedom is the entire area above the supply curve and below the demand curve. So, by the analogy with a tax, government ownership of any good or asset reduces economic freedom.

Our tentative definition of losses in economic freedom does not attempt to specify an allocation of property rights (or set of allocations) to which the definition applies. This is consistent with the view that violations of economic freedom can be defined relative to any fixed initial allocation of property rights, and that while some initial allocations of property rights may be better than others from a standpoint of equity or some other criterion (such as promoting economic growth), such judgements on the merits of alternative systems of property rights are separate from the positive task of measuring restrictions on economic freedom within a society with some particular set of property rights. On the other hand, we do not feel comfortable concluding that *any* arbitrary allocation of property rights, such as an allocation in which the government owns all the resources, is an equally good benchmark from which to measure restrictions

on economic freedom. Any attempt to measure restrictions on economic freedom and compare these restrictions across countries must take a stand on this issue.

Capital Gains and Losses

A puzzle

Restrictions on voluntary exchanges often impose capital losses on owners of assets. Suppose Smith owns an apartment building. The government puts rent controls on the building. This reduces Smith's wealth by the discounted present value of the loss in rents. Should we say Smith loses this discounted present value in economic freedom at the date the rent controls appear? Or should we say Smith suffers a loss of economic freedom each year equal to the difference between the free-market and price-controlled rent?

Now suppose Hume buys Smith's building at the equilibrium price, which reflects the rent controls. Hume does not lose wealth when he buys the building; he pays the market price. But when Hume owns the building, he is coerced by the government not to engage in certain voluntary exchanges (renting the apartment at a price above the controlled price). This constraint applies each year Hume owns the building. According to our definition, Hume suffers a loss in economic freedom each year. Smith clearly suffers a loss of wealth equal to the fall in the price of the building he sold Hume. Does Smith lose economic freedom?

The solution

Each period, the owner of the building suffers a loss in economic freedom equal to the difference between market and controlled rents. But the government does not impose any constraints on sales of buildings. We noted near the end of section 3 that restrictions on economic freedom affect other markets. As we explained there and in the example of peaches and cream, losses of wealth in those other markets are not losses in economic freedom. So Smith's capital loss is not a loss of his economic freedom, though it equals the present value of expected future losses in economic freedom.

Alterations in Market Structure

Suppose the government restricts entry into a market and thereby allows the market structure to change from competition to monopoly or some variant of oligopoly. For example, the government may prevent a newly-arrived, foreign-trained doctor from practicing medicine although he may be willing to charge less than a local doctor who has been certified for practice by state boards issuing certifications. This causes a loss in economic freedom much like those discussed earlier.

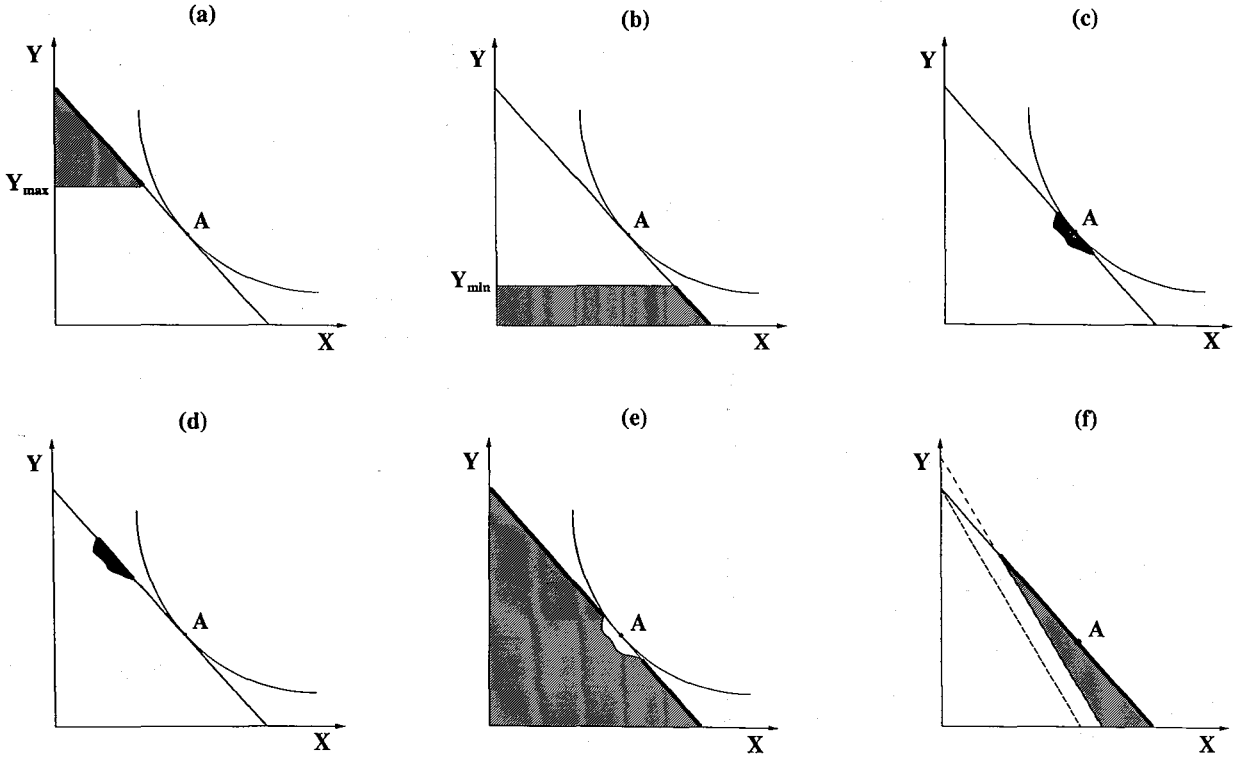
Alternatively, suppose the government forces producers in an industry to restrict production, and the price rises enough that each producer gains, i.e., the government forces producers to cartelize. (Crop restrictions provide an example.) Then the loss in economic freedom is the consumer surplus loss to buyers: the shaded area above P_e in Figure 1.[19]

Sometimes a government restriction that appears to be ineffective causes a loss in economic freedom. We argued earlier that a government restriction saying people could *not buy more* than X units of some good causes no loss in economic freedom if X equals or exceeds the amount they would buy anyway. This conclusion changes if the restriction alters market structure. For example, suppose a local firm competes with a number of foreign firms in a competitive industry. With free trade, the local firm is a price taker. We assume there is a law preventing other local firms from entering the industry. But this law prevents them from doing something they would not do anyway, so it does not reduce economic freedom. Now suppose the government imposes an import quota equal to the amount that people would import anyway. This changes the demand conditions facing the local firm and (with the laws against entry by other local firms) gives it a degree of monopoly power. The local firm raises its price. The combination of these two restrictions (neither of which reduces economic freedom individually) causes a loss in economic freedom.

Externalities

Suppose a person's actions impose negative externalities on other people. Does this create a loss in their economic freedom? Would a government restriction that prevents the externality-causing action increase economic freedom? We suggest the following approach to this problem.

Figure 7. Budget Set Definitions of Economic Freedom



Consider a world with complete property rights but with transactions costs.[20] Bentham imposes an externality on Blackstone (perhaps polluting the air on Blackstone's property while producing a product). Blackstone has legal recourse for a remedy, but the transactions costs are high enough that Blackstone chooses not to seek that remedy. Suppose the resulting allocation would *not* be efficient in the absence of transactions costs. Our definition implies that Bentham's actions restrict Blackstone's economic freedom. If the government restricts the extent to which Bentham can engage in the actions that harm Bentham (or taxes production or sales of Bentham's product), then the government restricts Bentham's economic freedom. The same government action that restricts Bentham's economic freedom can reduce the restriction on Blackstone's economic freedom.[21] In situations like this, it is impossible to have *zero* restrictions on economic freedom.

Some Alternative Definitions

The concept of losses in economic freedom that we have suggested in this paper is consistent with more than the one particular definition we have tentatively selected. There are several alternative approaches. One involves only a minor change: rather than adding the losses in economic freedom from constraints on voluntary transactions to the losses from mandates that require certain specific actions, one can define the loss in economic freedom as a vector with two components. This makes explicit the notion that a constraint is a qualitatively different kind of loss in freedom (perhaps with a different effect on welfare as well) than a mandate requiring individuals do something that they may have done anyway.

Another approach focuses on the budget constraints and defines the loss in economic freedom as the (absolute or proportional) reduction in the size of the opportunity set due to restrictions imposed by a third party on voluntary trades. This reduction could be measured either by the lost area within the budget set or by the lost area on the frontier (i.e., on the budget line, in two dimensions). Figure 7 illustrates this idea. Panel (a) shows a budget constraint, an indifference curve, and a person's choice of consumption of goods X and Y, with the optimal selection at point A. If the government imposes a restriction that prevents the person from consuming

more than Y_{max} units of good Y, the shaded area is removed from the budget set, and the thick line segment is removed from its frontier. One could use either measure to define the loss in economic freedom from this restriction; we will refer to these as the budget-set definitions of losses in economic freedom.

These budget-set definitions differ from the tentative definition discussed earlier. According to the earlier definition, economic freedom is unaffected by the nonbinding restriction illustrated in panel (a) of Figure 7. In contrast, the budget-set definitions imply a loss in economic freedom from that restriction. Panel (b) of Figure 7 illustrates a mandate to consume at least Y_{min} units of good Y. The budget-set definitions, like our earlier definition, imply that there is a loss in economic freedom from this nonbinding requirement. The quantitative measure of the loss, however, differs across definitions.

The properties of the budget-set definitions of economic freedom differ from the properties of our earlier definition. The loss in economic freedom, according to the budget-set definitions, is unrelated to the size of consumer and producer surplus losses from a restriction.[22] For example, Panels (c) and (d) of Figure 7 show losses in economic freedom that are equivalent in size according to the budget-set definitions, but differ in size according to our earlier definition. Similarly, the loss in economic freedom is larger, according to the budget-set definitions, in Panel (e) than in Panel (c), though the surplus loss is zero in panel (e) and positive in Panel (c).

The budget-set definitions imply a solution to the bundling problem. If the loss in economic freedom is a measure of the reduction in the budget set or its frontier, then all restrictions that contribute to that reduction are automatically bundled. In the circle game, for example, the net receipt of transfers would automatically be bundled with required payments, leading to a zero loss of economic freedom. Aside from foregone interest, the withholding tax and subsequent subsidy would be bundled in the example considered earlier (where the appropriate budget set involves intertemporal elements). Similarly, a sales tax and production subsidy would be bundled.

The budget-set definitions are less appealing in some situations than in others. Consider a sales tax with a lump-sum transfer to consumers, as we discussed earlier. This rotates a consumer's budget line as in panel (f) of Figure 7, reducing the size of the budget set by the shaded area but also

adding area to each individual's budget set because of the lump-sum transfer. Similarly, the frontier of the budget set changes position and may become larger or smaller. Neither budget-set definition gives an appealing measure of the loss in economic freedom from restrictions like this.[23] Despite these problems, the budget-set definitions of losses in economic freedom are alternatives with some attractive features. Like our earlier tentative definition, they distinguish economic freedom from wealth or utility, measure the results of coercion, and are consistent with our general concept of economic freedom.

Conclusions

Our definitions of economic freedom differ from Stigler's (1978). Stigler argued that the reason for a limitation on choice—whether it is due to poverty or actions of other people—"is elusive" (p140), and that a person suffers in either case.[24] While Stigler is right that people suffer in either case, that fact does not make the distinction unimportant. The distinction is important because it identifies the source of limitations on choices and can help us design a remedy for these limitations and the associated suffering.[25]

There is another, more important reason to distinguish economic freedom from utility or wealth. We have, throughout the paper, discussed the *utility* effects of government restrictions as if utility depended only on consumption of goods and services. While this is a standard assumption in economics (and is perfectly adequate for most purposes), we think it is a mistake when thinking about economic freedom. Economic freedom should enter as a separate argument, *in addition to consumption of goods*, in the utility function.[26] We think it is clear from introspection and casual observation of people that people prefer to make their own choices than to be coerced *even when* they would voluntarily make the same choice as the coercer.[27] In addition to getting utility directly from their *own* economic freedom, people may get utility from living in a society which *generally* permits economic freedom.[28] Economic freedom may also be an *input* into the production of wealth (we think it is), but that is not its only value to people.

We have proposed and explored a concept and several definitions of losses in economic freedom. The concept corresponds closely with the

common meaning of this term. The definitions to which the concept leads are explicit enough to express with standard economic tools. They are also explicit and precise enough to guide the measurement of losses in economic freedom for comparisons over time and across countries. On the other hand, there are certain fundamental issues, such as those involving bundling and initial allocations of property rights, that raise difficult questions. These fundamental issues *must* be addressed, explicitly or implicitly, in any attempt to measure economic freedom. For example, any choice of how to use data on government spending, taxes, and transfers to help measure losses in economic freedom implicitly takes a stand on the definition of losses in economic freedom and on the bundling and property-rights issues. While we do not claim to have resolved those intricate issues in this paper, we hope to have clarified them and contributed to their ultimate resolution.

Notes

[1] Two exceptions are Stigler (1978) and Easton (1989), a revised version of which is "Rating Economic Freedom: International Trade and Financial Arrangements," this volume.

[2] Our discussion can also help indicate which (of many) possible definitions a writer must implicitly have in mind if he chooses certain ways to *measure* restrictions on economic freedom.

[3] Stigler says "the distinction between wealth and liberty is not easily drawn, and in fact has not been undertaken in convincing explicitness."

[4] Economic freedom would often promote these other values, however.

[5] Thus we dispense with problems caused by private groups (e.g. Indian tribes) claiming that they have been dispossessed of rightful ownership in the past so that, say, physical occupation of land currently claimed by other parties would not (by them) be considered a loss of anyone else's economic freedom.

[6] This raises a fundamental issue that we discuss in the section below on "bundling."

[7] Of course, if demand rises, the restriction would become binding and would then reduce economic freedom.

[8] Throughout this discussion, we assume that everyone affected by the restriction is alike. This simplifies matters by making the constraint the same on all people. It is not hard to generalize to cases of heterogeneity. The quantities in all examples and figures refer to *per capita* quantities.

[9] At this stage of the argument, we assume there is no utility from economic freedom *per se*. We think this is not true (see the concluding section below), but it is a standard assumption in economics.

[10] If the supply curve were upward sloping, this area would be even larger because the constraint (which is applied to all demanders) would raise the equilibrium price.

[11] It also raises another important question that we defer until later: should such a calculation be made separately for each and every activity of government, or should some or all of these activities be "bundled," so that only net losses in consumer and producer surplus (net of any gains) represent a loss in economic freedom? We postpone our discussion of this very important issue of bundling until section 6.

[12] If there is a local market abroad, so that D>0, the loss in producer surplus abroad equals -(D*+M)dp*. Of this, only -Mdp* is a loss in economic freedom to foreigners because their own sales to their own consumers are not taxed.

[13] $Y represents the typical person's valuation of the transfers and goods the government provides rather than the cost of those goods and transfers to the government.

[14] As in the transfer example above, we never aggregate effects on consumer and producer surplus *across people* before calculating the loss in economic freedom.

[15] The receipt of a dollar from the person on one's right could be optional: one could perhaps refuse to take it, but there is no reason in this setup for anyone to refuse to do so.

[16] Sweden once differentially restricted sales of liquor to females. An effective restriction means that males cannot buy liquor for resale to females.

[17] Here the question of what is a single good is *not* semantics: the answer is whatever the government considers to be the good for purposes of enforcing the constraint.

[18] A similar principle applies to requirements that a person hold certain financial assets.

[19] If producers are heterogeneous and some lose income from this restriction (e.g. it applies differentially across sellers), then those income losses add to the loss in economic freedom.

[20] In an economy with a complete (universal, exclusive, and transferable) set of property rights and zero transactions costs, there would be no externalities.

[21] It might appear that there is a better approach to this problem. One might say that Bentham's actions do not restrict Blackstone's economic freedom, because Blackstone's property rights confer not an absolute right to unpolluted air but the right to seek a legal remedy (at some cost) in case someone such as Bentham pollutes it. When Blackstone purchases the property, he knows that the costs of seeking a remedy are high enough that in certain cases he would choose not to do so. Then Bentham's actions would not violate Blackstone's economic freedom because Blackstone never owned the right to completely unpolluted property: he owned *only* the right to seek legal remedy for violations, which he chose not to do. This approach has some appeal because it distinguishes the amount of economic freedom from the extent to which government provides a certain public good, viz. an efficient system of liability rules and procedures for seeking remedies. Whether the law specifies an efficient standard contract for certain transactions (to minimize transactions costs) is a different issue than whether the government restricts economic freedom. For example, a government may establish inefficient liability standards for tort cases, but that does not in itself restrict economic freedom. Despite this appeal, this approach to economic freedom in the presence of externalities is very unsatisfactory. If someone knows he may be robbed (perhaps by the government), we want to say that the robbery (as well as the threat of robbery) reduces the victim's economic freedom. But there is no general principle to distinguish between these cases of robbery and pollution. So we conslude that Bentham's action violates Blackstone's economic freedom.

[22] In this sense, the budget-set definitions do not weight restrictions according to their "importance" as our earlier tentative definition did. One might view this as an advantage of the budget-set definitions: they distinguish the quantitative size of the restricitons that create losses in freedom from the importance of those losses. One must be careful, however, to

distinguish between the importance of a restriction for creating a loss in freedom and the importance of freedom for something else, such as utility.

[23] One could, however, define the loss in economic freedom in this case as the lost area in the budget set or on its frontier and *ignore* the added area, much as we earlier counted losses but not gains in wealth from government-imposed income redistributions as losses in economic freedom.

[24] Stigler says, "Whether the state forbids me...to use more than ten gallons of gasoline a week, or whether I am prevented from doing so by its high price (not including taxes) is of little direct significance to me: in either case my driving is limited by decisions (to ration or to buy gasoline) of my fellow citizens." We think that the distinction is important—at least because it affects what that person might want to do to change the situation.

[25] Stigler's second argument is that it is impossible to distinguish between limitations on choice by coercion and by voluntary actions of others. Stigler gives several examples. First, he assumes there is little demand in a community for a symphony, and this prevents it from occurring and so prevents Stigler from attending. Stigler argues that this reduces his utility, which he identifies with freedom. The key point for Stigler is that he is affected (via market prices) by the behaviour of others. People may prefer for others to act differently, but this (for us) has little to do with freedom.

Stigler's second example concerns a high price for symphonies, caused by a high income tax which reduces demand for symphonies. He considers a case in which the income tax was not *intended* to reduce the demand for symphonies, but has that effect. Our definition implies that a loss of consumer or producer surplus in the symphony market is not a loss in economic freedom because no one is coerced to buy or not to buy symphony services, though people lose economic freedom directly from the labour income tax.

Stigler's third example involves user fees for the court system and the distinction between a fine for a parking violation and a rental fee for the parking space. These issues involve government property (the courts, the parking space), which we have argued may violate economic freedom. But this does not provide a complete answer to Stigler's question. Governments may charge a fee for use of the legal system to define or enforce property rights. We have not addressed the issue of whether these fees reduce economic freedom, and we are not sure of the answer.

[26] Suppose a person could be wealthier by moving to Albania, where the government may (for some reason) provide him with substantial material goods. He may choose not to move there, nevertheless, because it is less free. Or he may choose to move there, raising his utility despite the loss of freedom. Freedom differs both from wealth and utility. We think people value freedom and wealth (among other things), and make decisions based on tradeoffs among these ends.

[27] People (of all ages) often say things like, "I'll do it anyway, I just don't want to be told to." This suggests that people get direct utility from their own economic freedom. But it also suggests a shortcoming of our tentative definition. That definition says there is no loss in economic freedom from a government restriction that prevents you from buying more of a good than you would have bought anyway. The obvious problem is that people may believe their economic freedom is limited by such a restriction (and not just potentially limited if they tried to buy more in the future). They may say, for example, "I *won't* do it anyway, I just don't want to be told *not* to."

[28] Landsburg (1991) has recently analyzed the consequences of the assumption that people care directly about the philosophical rules governing the society (as expressed in a fictional social planner's objective function).

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Discussion

Zane Spindler commented that some of the measures of freedom that characterize quantity restrictions (in Figure 2) are really on the supply side rather than the demand side and are ignoring the marginal change in coercion. Instead the measure focuses on the total amount of coercion. Further, the consumer is restricted, not the supplier, and "D" and "E" should not be included. Spindler also wondered if, from a rational expectations perspective, there can be a restriction on freedom if we live in a rent-seeking environment in which anticipated rents are dissipated. Any particular restriction, he suggested, can be seen as already anticipated as a consequence of the basic constitution and rent-seeking behaviour. Jones responded that in the case of the government order that you **must** consume 25 units, it is a loss in economic freedom whether or not you wanted to consume them. I.e. even if it is not a loss in utility, it is a loss in freedom. Arthur Denzau responded that rational expectations are not the same as perfect foresight. Spindler replied that we would distinguish anticipated from unanticipated restrictions.

John Goodman argued that even if we can call this a loss in freedom, we cannot measure it by counting 20 units times the price. This would lead to the conclusion that if we required they take 15 units (less than the 20 units they wanted), then the loss in economic freedom is less than would be the case if the government required that they take the (desired) 20 units. Suppose that the government required that people take 25 units. How do we measure this? John Chant suggested that we tend to confuse two distinct concepts: (i) the consequences of the restrictions of economic freedom; (ii) the extent of the restrictions we face. For example, corresponding to the first concept there are lists of regulations that potentially impede transactions—"Is it illegal to mistreat an oyster?" whether one ever intends to do so or not; while the second approach provides a greater sense of the magnitude of the restrictions. How far can we go? Perhaps we want a framework in which, for a given technology, we stand behind a veil of ignorance, and our concept of economic freedom carves out our opportu-

nity set before we introduce our tastes. We do not talk about marginal restrictions because we have no starting point—all our restrictions are of the same sort.

James Ahiakpor felt that the measure of freedom and utility appear to be the same thing. Jones responded that even though changes in utility and changes in economic freedom are measured in the same currency, they are **not** the same thing. They can go in different directions. The Jones/Stockman paper does not add or subtract measures of freedom and utility because that depends upon what a restriction on your economic freedom means to you.

Edward Hudgins stressed that if the government forces you to consume that which you want to consume, you lose the opportunity to change your mind. Milton Friedman pointed out that to restrict your freedom does not mean that you are worse-off. It arises from a utility function that has both freedom and wealth as arguments. People may even be willing to pay to restrict their freedom as they do with Christmas clubs. James Gwartney felt that the option to consume more or less than the mandated amounts should be valued. Walter Block had trouble with the idea that a Christmas club was in any way a restriction on economic freedom since it was completely voluntary. He argued that the way to capture the value of the impediment is to ask what people would be willing to pay to rescind it. Richard Stroup suggested that even if we increase our economic freedom by actively participating in some voluntary arrangement, the difference is between a total and a partial effect. The total effect is that we have chosen to do it. The partial effect is that it reduces our freedom to do it even though we have not had to restrict ourselves. Had it been possible to restrict others we would not have suffered the loss in freedom. Milton Friedman argued that there is a more subtle issue here: the ability to agree to restrict your economic freedom is part of economic freedom. This raises several difficulties. If government is involved, then the issue may turn on whether by accepting a loss in economic freedom you are not preventing some larger loss of freedom. Richard Rahn emphasized that if the government required you to have polio shots and therefore polio is wiped-out, then you would be willing to pay to have government do what you would already wish to do.

Stephen Easton suggested that the option value should be taken more seriously and wondered if the rectangle was the appropriate way to char-

acterize that valuation. Further, dealing with the rectangle evaluation of losses in Figures 2 and 3, if rent-seeking dissipates the rectangle profits arising from restrictions, then measuring the rectangle is a way to approximate the amount people are willing to pay to remove the restrictions—or get the restrictions for themselves. John Chant felt that the best way to express the problem associated with measuring economic freedom was to look at the rectangle loss which is the dollar consumer loss and insist that this is the loss in wealth. Then he suggested we can rename the loss in economic freedom as units of freedom which we will, for simplicity, identify with the dollar losses even though they are different units—one of "freedom(s)," and one of dollars. We should have identified $100 of wealth losses and $100 in freedom losses—which may be freedom units. Ronald Jones indicated that we do not add these two dollar losses together since both enter separately into utility.

James Gwartney elaborated on the idea that the impediment value of the restriction which mandates you to do what you would have done in any case, is what you would be willing to pay to have it removed. He noted that this is complicated by the recognition that different people would be willing to pay different amounts depending on how they value the option to do things differently. Alan Stockman wanted to face the issue directly: Do you lose economic freedom when you are required to do what you would have done in any case? He pointed out that the paper attempts to define this by the minimum cost of compliance with the restriction. If we agree that this is a restriction on our freedom, then there is the question of how to measure it. What are the alternatives to the Jones-Stockman measure? He did not see any relevance of the option approach. It still confuses wealth and economic freedom. By being required to consume that which would have been consumed anyway, there is no loss from the utility of consumption part of the utility function, but there is a loss in the utility of economic freedom part of the utility function. The restriction that requires consumption of 15 units is two losses. The first is the restriction that requires consumption of at least 15 units—which is measured as the cost of compliance. The second is the surplus loss associated with the restriction that no more than 15 units may be consumed. Stockman used the following example: Suppose public and private schools are perfect substitutes. Then by measuring all public expenditures as a loss in economic freedom, there is an implicit assumption that you would have consumed it (the same school-

ing) anyway. Alternatively, you wouldn't want to count raw government expenditure.

Milton Friedman contrasted two approaches: the definitions suggested by Jones and Stockman, and the approach that asks: How much would you pay to get rid of it? Consider driving on the left hand side of the road. In this case there is undoubtedly a loss in economic freedom. How much would you pay to get rid of it? Surely, nothing. The Jones-Stockman approach goes a long way toward reconciling very difficult conceptions of economic freedom into a single index.

Rating Economic Freedom: International Trade and Financial Arrangements

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Introduction

THIS IS A CHARACTERIZATION OF economic freedom in a number of countries with respect to their international exchanges. The measures developed are relentlessly additive. This means that in comparison with earlier work, the characterization of economic freedom may appear narrow.[1] The advantage to this strategy is that additional research may always add (literally) to what is extant without any reweighting or complex indexing. Tables in the text illustrate the measures developed, and a summary table at the end highlights the dollar values of the reduction in economic freedoms as I see it.

Two issues have arisen in conjunction with the development of my measures. First, identifying economic freedom sector by sector is awkward as the measures in one sector may overlap with those of another sector and

lead to double counting. I.e., suppose a study of the domestic economy uses taxation as a measure of freedom's reduction. Since one of my measures of freedom's reduction in the international sector is related to expenditure, unrequited official transfers, we may not wish to count both revenue and expenditure as distinct reductions in economic freedom. Reconciliation of the national freedom accounts will have to take place.

Second, by choosing to focus on an additive characterization of economic freedom, the indexes devised have emphasized the trade accounts which are relatively easy to measure, to the virtual exclusion of the loss in freedom associated with the flows of factors, which are comparatively difficult to measure. Even though, as I will argue below, the conceptual measures of freedom are the same, more extensive research is required to continue with the same systematic characterization of economic freedom as has been accomplished for the trade accounts.

A Working Definition of Freedom

As we can see from the discussions at the two previous conferences related to rating economic freedom (Walker, 1988; Block, 1991), a conception of economic freedom is difficult to define in a clear and unambiguous fashion. In the absence of consensus, perhaps the measure that serves best is the most simple. Economic freedom is the voluntary allocation of resources. Now in the extreme such a definition may not serve. "Your money or your life!" presents an opportunity for "voluntary" exchange which most of us would agree is not appropriate.

One would like a definition that says that economic freedom is the voluntary allocation of resources subject to as few constraints as possible — other than those imposed by nature, and those imposed by voluntary, non-coercive associations of others. But as a definition, this is a quagmire. There will be divergent views on what is voluntary, what is the state of "nature," and what is "non-coercive." Rather than attempt a definitive statement, or even one that caters successfully to most peoples' views, the task at this point emphasizes identifying, enumerating and elaborating what I take to be the relevant constraints. Other conceptions of freedom may involve additional or even very different sets of constraints on voluntary exchange.

In the context of international trade and finance, the relevant dimensions are comparatively simple. Individuals of different countries are more free if they have the opportunity to allocate their own resources. For these purposes, the government is *not* just another individual. It is instead a direct impediment, through its powers of taxation and reallocation, to the exercise of economic freedom. We need to be careful here. This does *not* imply that there is no role for government. It does suggest, however, that the rule of law, and the provision of all the other goods and services government provides, should be seen as trading-off with individual freedom and viewed with healthy suspicion in consequence.

Freedom in the Context of International Exchange

From the international trade perspective, the ability to allocate one's own resources takes several forms. If you, in your own country cannot trade at the prices available to individuals in another country (net of "natural" costs such as transportation, insurance, and the like), then some distortion exists. I will take it as obvious that by far the most significant distortions in this regard are those created by government fiat. Impediments to both goods and factor trade abound. Tariffs and non-tariff barriers, prohibitions on immigration and emigration are rife. Exchange controls and controlled exchanges are far more common than genuinely flexible exchange rates. In all of these cases, the ability to engage in free exchange is compromised.

How we identify and quantify this diminution in our freedom is the task of this paper. It is a search along one dimension. As a result, some of the issues which are characterized as diminishing our freedom may nonetheless lead to a higher level of national income. In this respect we part company with traditional economic analysis which tends to take income maximization as the objective function. In contrast, our analysis pays little heed to the consequences of government spending — for "good" or "ill" — but characterizes the act of taxation as freedom reducing as it stands between the individual's resources and the individual's allocation of those resources.

Appropriate Categorizations

Once we decide upon constraints that need to be measured, there are several ways in which we may classify aspects of economic freedom. We may choose categorical, ordinal, or cardinal measures.

Categorical measures are those that can be answered with a "yes" or a "no," a "present" or "absent," etc. For example, we might ask, "Does a country require a permit to emigrate or immigrate?" or "Is the exchange rate freely floating?" The most information that can be gleaned from these measures is whether they exist, or have they changed from previous observations. Categories are useful, but are of limited value in the long run. Although categorization requires less information (than ordinal or cardinal measures) at some level of abstraction, they require strong criteria for deciding whether the variable is "on" or "off" which may obscure important nuances. Categorization does not readily permit consistent aggregation over sub categories. This means that sub categories are unlikely to be very useful in terms of constructing broad indexes reflecting economic freedom. Since the information requirements necessitated by such measures are less stringent than for ordinal or cardinal measures, categories of economic freedom are likely to be with us for some time. Spindler and Still (1991) have provided an extensive list of categories identifying dimensions of economic freedom.

There are two kinds of ordinal rankings which are usefully distinguished. The first is of the kind, "Is what I am measuring significantly different than in some previous (base) period?" This is the kind of question familiar to economists who are interested in inflation, and indexes in general. In this case, price comparisons can be made between periods even though the value of the index itself is entirely arbitrary. It would make no sense to compare a price index in one country with the level of some price index in another country. But comparisons of rates of change of these price indexes, the rates of inflation, across countries is often revealing.

A second ordinal measure asks simply whether something is greater or less than something else. For example, "Are trade taxes greater in one country than another?" In this case we have a comparison that is without reference to some base period — the measures are intrinsically meaningful.[2]

For our purposes, a cardinal measure means that measurements are additive. For example, taxes are additive: tax A gathers $10 and tax B

gathers $25 so that the total tax burden is $35. A cardinal measure is most useful as it can do at least what the other rankings can accomplish. In the present context it is particularly fruitful because it is both easily interpretable and open-ended. These are virtues insofar as it will undoubtedly take many iterations to establish a satisfactory or consensus set of dimensions for measuring freedom. If the total value of freedom's loss is $100 using the measures available today, additional research may provide an additional measure that suggests the loss is another $25. Rather than create a new, improved index that embodies some relatively arbitrary reweighting of old and new categories which makes the index difficult to compare with past efforts, the new costs may be added to the old. An additive index which gives the opportunity to cumulate is particularly well suited for the ongoing development of characterizations of economic freedom. Of course additive measures also impose the most stringent information requirements. Our discussion of economic freedom develops almost exclusively cardinal, additive measures of freedom.

The Measure of Freedom

The notion of economic freedom I will use is based on the idea that the individual has the "right" to allocate the resources that he or she owns without impediment. In the context of international trade this means that tariffs, quotas, voluntary export restraints (VERs), and other nontariff barriers (NTBs), which diminish the individual's ability to trade at international prices reduce freedom. Similarly, interference with factor flows which reduces the opportunity for the equalization of factor returns also diminish freedom.

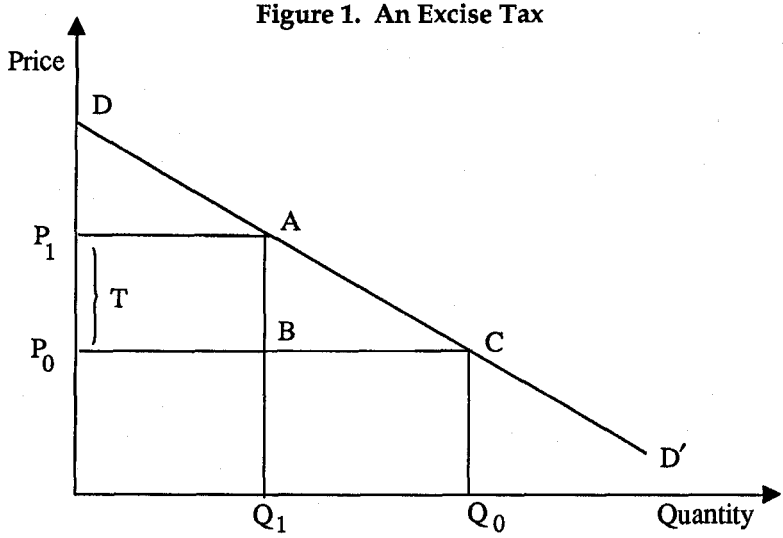
As a working hypothesis, I will assume that the measure of economic freedom (in a negative sense) is the dollar value of the impediments to free exchange and allocation. This is not the same as saying that the measure of economic freedom is the dollar *cost* of the impediment.

To illustrate this difference consider the case of an idealized excise tax. The usual definition of the cost is the "welfare cost" associated with the tariff. Figure 1 is drawn for linear demand, DD', and constant marginal cost which, in the absence of tariffs or other impediments, is equal to the domestic price, p_0. The usual "welfare cost" associated with the tax, T, is

the triangle, *ABC*. This represents the loss in value of the quantities Q_0Q_1 foregone due to the tax. The revenue from the tax, area P_0P_1AB is usually assumed to be returned to the domestic consumer in some lump-sum, non-distorting, fashion.

My (first) measure of the loss in freedom is exactly this revenue rectangle. This is the value of resources over which the individual has lost control. They may be returned or they may not be returned, but the essential feature for our purposes is that the individual consumer does not have the freedom to allocate these resources.[3]

Figure 1. An Excise Tax



Economic Freedom and Income Maximization

The issue in the context of international trade is a little more subtle. This characterization of freedom may actually put real income maximization at odds with what we described as a more free society. That is, income maximization may lead to a loss of freedom!

To illustrate this point recall that an import tariff distorts domestic choice and thereby reduces freedom by raising the domestic price above the international price. The effect of the distortion on domestic income is related to the volume of goods affected, the change in the quantity of

imports induced by the tariff, and the effect on the terms of trade. A tariff may raise the level of domestic income if the home country is able to affect world prices. A tariff may reduce domestic demand, and if the home country is "large," lower the world price sufficiently so as to leave the domestic economy better-off once tariff revenues are returned to the populace. This is the traditional argument for an "optimal tariff."[4]

But any suggestion that because (an optimal) tariff raises domestic income, it enhances economic freedom should be rejected for several reasons. First, although it is not the focus of this paper, it is worth remarking that even though domestic income rises by the imposition of (an optimal) tariff, world income, the sum of domestic and foreign incomes is reduced since world trade is distorted. Second, domestic residents are denied the opportunity to trade at world prices. Third, domestic residents are now dependent upon the government to redistribute the tariff revenue in some fashion across the general populace. And fourth, the government has redistributed income throughout the economy as a result of changing relative prices.

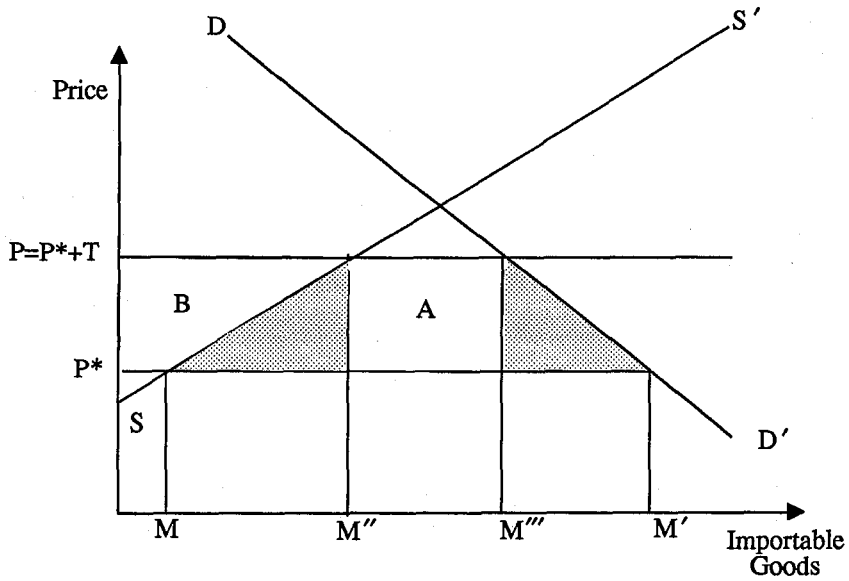
Direct and Indirect Measures of Economic Freedom's Loss

It is these last three characteristics that I will use as a foundation for measuring the loss of freedom for each country. The revenue from the tariff is the direct measure of the loss of command over resources suffered by the populace, and the change in economic rents induced by the tariff are the indirect losses associated with the distorted prices. Were we to use a measure of price distortion alone, i.e. the difference between world and domestic prices, we would have to weight each distortion by its importance unless we were satisfied with a mere catalogue of goods taxed. The revenue raised by the tax aptly describes the command over resources lost to the private sector.

But using tariff revenue as a characterization of freedom's loss is not sufficient.[5] A tariff may be sufficiently high so as to be prohibitive, and we do not want to allow this state of affairs to be confused with no diminution in freedom which would be the case if the tariff were zero. Indeed as tariff rates rise, at some point revenue must be reduced.[6]

To avoid this problem and capture the distortion taking place in resource allocation, two dimensions of our characterization of economic

Figure 2. Direct and Indirect Costs



freedom can be distinguished: direct and indirect diminutions in economic freedom. The direct effects are those reallocations of resources that are spent by the government. The indirect effects are those reallocations that are caused by government policy but spent by private individuals.

Figure 2 is a traditional, partial equilibrium representation of the effect of a tariff in a small country. The (linear) demand curve for the importable good is *DD'*and the (linear) domestic supply schedule is *SS'*. The world price is p^*, and without tariffs the home country imports *MM'*. With the imposition of a tariff, *T*, the domestic price rises to $p=p^*+T$, and the quantity of imports falls to *M"M"'*. The area, *A*, is the tariff revenue, as it is the tariff rate times the quantity of imports. This I have called the direct effect of the tariff in reducing economic freedom. Tariff revenue is both taken away from the private sector and spent in ways that differ from the private owner's allocation.

The second effect is the indirect effect a tariff has in reducing economic freedom. It is represented as (trapezoid) B in Figure 2. The indirect effect of

the tariff arises from the reallocation of resources in the domestic industry that produces the importable good. Output of the importable good rises as the price received by the producer at home increases in proportion to the tariff. The increase in price draws additional resources into the industry and provides an increase in economic rents to (fixed) factors already employed in the industry.[7] This is a reduction in economic freedom because it represents an effect of government policy that stands between the producer and the undistorted value of the resources that are owned. I term it indirect because even though the government policy has changed the allocation of resources to particular individuals, the resources are not spent by the government directly, but by private citizens.[8] Which of these measures is most important? Obviously if there is no domestic production, the indirect losses are nonexistent. Just as obviously the indirect costs are likely to be vastly greater than the direct costs if domestic production is large relative to excess demand — imports.

How does this measure deal with the problems of a prohibitive tariff?[9] If the tariff is prohibitive, then the (indirect) loss is the value of domestic production, which is the same as domestic consumption, times the tariff rate — again, ignoring the second order welfare costs, the shaded areas under both the demand and supply schedules.[10]

Extending the Measure to Non-tariff Barriers

The effect of *non-tariff* barriers can be assessed in the same framework. A quota has a tariff equivalent, voluntary export restrictions, VERs, have effects similar to a quota, variable import levies, VILs, have effects similar to those of tariffs, non-automatic import authorizations, NAIAs, may be thought of as a form of quota, and even government purchasing can be seen as a device reallocating domestic rents.

Calculating the Loss of Freedom

Distortions in the international sector are divided into those affecting trade in goods and services and distortions affecting the flows of factors of production — labour and capital. Among the activities we can catalogue which lead to a decrease in freedom in the goods component of the

international sector are tariffs and NTBs: quotas, VERs, and various specific arrangements.

Tariffs

As we have discussed, there are several elements of tariffs that can reduce the ability to allocate resources without distortion. First there is the tariff rate itself. As a first approximation, a 10% ad valorem tariff adds 10% to the private individual's cost of the good.[11] The direct effect of the tariff is to raise revenue for the government. This constitutes resources no longer available to be allocated by private individuals. The indirect effects are those that arise from the increase in price as rents on factors already employed in the industry are created and new resources are brought into production. To measure the rents created requires knowledge of the amount of domestic production. For example, if the tariff is 10% and domestic production before the tariff is imposed amounts to 100 units each of which is worth $1 on the international market, then roughly $10 of indirect rent reallocation is created by the tariff (for the factors already employed).[12]

Our description of the tariff is based on the direct and indirect costs to freedom. In particular we can observe the revenue generated by the outstanding tariff structures around the world. Table 1 provides such a listing for twenty-seven countries. Each country is described by the level of trade taxes in column 3, the value of imports in column 4, and gross domestic product in column 5. All are measured in domestic currency. Columns 6 and 7 suggest a basis for comparing the loss of freedom induced by such taxes. In column 6 we have the percentage of imports that the taxes reflect, and in column 7 the taxes are expressed as a percentage of gross domestic product.

In terms of our categories, all countries obtain some revenue from tariffs, but the figures in the last two columns enable us to rank countries in terms of the relative amounts trade is distorted by taxation (scaled for convenience by imports), and the fraction of total income affected by these taxes. Yugoslavia is the least free in this regard, and the less developed countries are generally more actively involved in the reallocation of resources as a share of their national incomes than the developed countries. Italy, for reasons that are unclear, and Luxembourg appear to be the least distorted by tariffs.

Table 1: Revenue Generating Taxes Associated With International Transactions

Country	Date	Taxes	Imports	GDP	Tax to Import (%)	Tax to GDP (%)
		(Billions of Local Currency)				
United States	1987	14.75	484	4497	3.0	0.33
United Kingdom	1985	1.425	98.94	353.72	1.44	0.40
Austria	1986	6.92	514.6	1432.5	1.3	0.48
Belgium	1984	31	3276	4534	0.94	0.68
Denmark	1986	1.69	215.61	667.14	0.78	0.25
France	1985	9.2	1093	4695	0.84	0.20
Germany	1986	6.18	523.7	1931.2	1.18	0.32
Italy	1986	98	16367	90224	0.06	0.01
Luxembourg	1984	0.086	186.59	221.53	0.04	0.04
Netherlands	1986	2.39	214.65	429.88	1.1	0.56
Norway	1986	1.348	213.04	513.72	0.60	0.26
Sweden	1986	1.81	277.05	931.78	0.60	0.19
Switzerland	1985	3.449	88.1	228	3.9	1.50
Canada	1985	4.316	123.4	478.77	3.4	0.90
Japan	1985	668	40163	31611	1.6	0.21
Finland	1985	0.802	94.89	336.82	0.8	0.24
Greece	1984	12.36	1139.1	3804.7	1.1	0.32
Iceland	1985	4.487	49.051	119.17	9.1	3.87
Ireland	1984	0.503	9.815	16.483	5.1	3.05
Malta	1985	0.0341	0.4205	0.476	8.1	7.1
Portugal	1985	34.407	1439.5	3536.3	2.4	0.9
Spain	1984	265.6	5360	25121	5.0	1.1
Turkey	1986	465.2	7561	39168.	6.1	1.2
Yugoslavia	1983	117.65	951.6	4083.5	12.4	2.9
Australia	1986	3.408	46.22	246.74	7.3	1.4
New Zealand	1985	0.587	15.093	44.861	3.9	1.3
South Africa	1984	0.661	25.931	105.22	2.5	0.63

Source: International Monetary Fund, *International Financial Statistics*. Column 3 is 81F.H or (.5); column 4, 98c; column 5, 99b.

Table 2. International Transaction Taxes Compared

Country	Date	Population (Millions)	Taxes (Billions of $US)	Full Cost	$US/ Capita
United States	1987	243.77	14.75	97.82	98
United Kingdom	1985	56.62	2.06	4.15	73
Austria	1986	7.56	0.50	1.44	190
Belgium	1984	9.86	0.50	0.69	70
Denmark	1986	5.12	0.23	0.70	137
France	1985	55.17	1.22	2.44	44
Germany	1986	61.05	3.18	7.35	120
Italy	1986	57.22	0.07	0.25	5
Luxembourg	1984	9.4	0.00	0.0	0
Netherlands	1986	14.56	1.09	2.18	150
Norway	1986	4.17	0.18	0.48	113
Sweden	1986	8.37	0.27	0.68	81
Switzerland	1985	6.47	1.66	2.87	443
Canada	1985	25.36	3.09	7.72	304
Japan	1985	120.75	3.33	3.30	27
Finland	1985	4.9	0.15	0.50	101
Greece	1984	9.9	0.10	0.31	31
Iceland	1985	0.24	0.11	0.28	1164
Ireland	1984	3.54	0.55	1.16	327
Malta	1985	0.34	0.07	0.13	376
Portugal	1985	10.16	0.22	0.58	56
Spain	1984	38.34	1.53	6.32	164
Turkey	1986	50.3	0.61	2.73	54
Yugoslavia	1983	22.8	0.94	3.61	158
Australia	1986	15.97	2.29	6.35	397
New Zealand	1985	3.25	0.29	0.87	268
South Africa	1984	30.9	0.46	1.70	55
Total of Above	876.09	39.45	201.16	229.61	

Notes: Column 4 is expressed in billions of US dollars converted at end of year rate. Column 6 is based on the penetration ratio for each country or the world average when the individual country information is not available.

Source: International Monetary Fund, *International Financial Statistics*.

Column 3 is from 99z, taxes are from Table 1, and the penetration ratio is from Pearson and Ellyne (1985).

These categorical and ordinal measures of freer trade are the most traditional of the measures that we can construct. They are based on a comparison of countries each of which is considered an entity in its own right whose trade is obstructed relative to others. Can we say that a country is twice as free (in this dimension) as another? Probably we can, although deflating taxation by domestic product which includes government expenditures evaluated at cost must be at best a second best deflator.

The relative measures do not permit us to aggregate across categories of trade taxes. If we are to generate a ranking with quotas, it is surely possible that a country will rank first in terms of one measure and last in terms of the other. Further the ranking generated in Table 1 does not emphasize the distinction between the direct loss of freedom and the indirect measure. These points are developed more fully in Table 2.

The Direct and Indirect Costs of Tariffs

In Table 2 the "cost" of the tariff reflects more than the direct trade costs —the tariff revenue. In constructing column 5, we assume that prices of all traded goods increase by the (trade) tax rate. The penetration ratio, the ratio of imports to total domestic consumption, is used to obtain the fraction of traded goods produced for each country.[13] Added to the direct costs of the tariff, the tariff revenue, this yields an approximation to the total cost—direct and indirect of the outstanding taxes on trade. Column 6 expresses the total U.S. dollar cost on a per capita basis for each country. A per capita valuation seems appropriate as it emphasizes the loss in freedom per individual.[14]

In Table 2 it is clear that Icelanders suffer the greatest loss in freedom to acquire goods at world prices and that their government is most deeply involved in reallocating resources with costs amounting to over $1,000 a head. Switzerland, Australia, Portugal, Malta, Canada and New Zealand comprise the next most affected countries with freedom diminished by $300-$400 per capita. There is a gap until roughly $150 per head. And the costs diminish steadily thereafter.

Non-tariff Barriers

But unlike tariffs which are relatively easy to quantify, the cost of non-tariff barriers is difficult to measure. Further, unlike tariffs which have been

diminished in significance through past rounds of the GATT negotiations, the formation of freer trade areas in both Europe and North America, and the antipodes, NTBs have been increasing in importance over the years. Table 3 provides a rough idea of the "coverage" of imported goods that are subject to quota in a number of developed countries.[15] Columns 2 and 3 report the non-tariff coverage ratios in 1981 and 1986. From column 4, which reports the difference between the two years, it is clear that more goods are covered by quotas now than in 1981. This is an issue that is likely to be of increasing importance.

Table 4 indicates the kinds of NTBs that are present in the countries of the OECD in 1986.[16] The second column indicates the share of imports facing quotas, the third, the share facing voluntary export restraints, the forth, restrictions under the Multifibre Arrangement; the fifth, non-automatic import authorizations; and the sixth, variable import levies. From Table 4 it would seem that quotas, voluntary export restrictions and non-automatic import authorizations are the most extensive devices to limit freedom, while both the Multifiber Arrangements and variable import levies are of less significance.[17]

It is striking how much certain countries favour one device over another. New Zealand and Japan prefer quotas and NAIA, while the U.S. chooses VERs, notably autos, and the Multifiber Arrangement. Italy, which appears to have very low tariff revenue, does a more thorough job with quotas and other restrictions. In broad terms it appears that quotas, NAIAs, and VERs have become roughly equal participants in the barriers affecting world trade.

To get a handle on measuring the effects on resource allocation of a quota, in principle it can be treated as a tariff at a particular level. However, unlike the tariff, the quota generates no revenue directly. Rents are created since the domestic price will rise as supply from abroad is restricted. Most analysis of quotas is spent identifying the magnitude of the the welfare losses generated and who benefits from the rents generated — although this is not our task here. In contrast we are concerned with the magnitude of the rents created as it is they that are a measure of the indirect loss of freedom in the nomenclature devised above. They are losses as they change the allocation of resources, and they are indirect as they are spent by private individuals rather than by governments directly.

Table 3. Non Tariff Barriers

	Trade Coverage Ratios		
	1981	1986	Difference
Belgium-Luxembourg	12.6	14.3	1.7
Denmark	6.7	7.9	1.2
Germany	11.8	15.4	3.6
France	15.7	18.6	2.9
Greece	16.2	20.1	3.9
United Kingdom	11.2	12.8	1.6
Ireland	8.2	9.7	1.5
Italy	17.2	18.2	1.0
Netherlands	19.9	21.4	1.5
EC(10)	13.4	15.8	2.4
Switzerland	19.5	19.6	0.1
Finland	7.9	8.0	0.1
Japan	24.4	24.3	-0.1
Norway	15.2	14.2	-1.0
New Zealand	46.4	32.4	-14.0
United States	11.4	17.3	5.9
All the Above	15.1	17.7	2.6

Source: Cletus C. Coughlin and Geoffrey E. Wood, "An Introduction to Non-Tariff Barriers to Trade" *Review the Federal Reserve Bank of St. Louis*, Vol. 71 No.1, (1989): 35.

But obtaining the tariff equivalent is easier said than done. Wood and Coughlin (1989) note that there is no tariff equivalent available for the aggregates they have generated.[18] But can we assume that a coverage rate of 12% means a greater loss of freedom than a coverage rate of 6%? Certainly that is possible, but until a detailed study of each country identifies the prices available for each product, we have little recourse but to approximate.

Table 4. Types of Non-Tariff Barriers: 1986
Shares of Imports Facing Each Type of Non-Tariff Barrier

	Quotas	VER	MFA	NAIA	VIL
	(All measured in percent)				
Belgium-Luxembourg	1.3	7.3	1.2	5.7	5.2
Denmark	0.4	3.8	2.2	1.1	1.4
Germany	0.9	5.0	4.3	3.0	2.0
France	7.4	3.0	1.8	7.1	2.2
Greece	8.6	9.2	1.2	3.9	3.8
United Kingdom	1.3	4.6	2.9	5.1	4.4
Ireland	0.2	6.1	1.3	2.2	2.2
Italy	8.1	2.0	1.7	7.0	6.6
Netherlands	2.9	5.6	2.8	14.0	6.3
EC(10)	3.1	4.4	2.8	5.6	3.7
Switzerland	2.5	0.0	0.4	2.8	0.5
Finland	0.9	0.0	0.3	6.7	1.8
Japan	14.3	0.0	0.0	7.7	1.8
Norway	4.7	0.0	0.0	3.3	0.0
New Zealand	26.9	0.0	0.0	16.8	0.0
United States	2.0	11.3	3.2	0.0	1.4
All the Above	4.7	5.3	2.2	4.1	2.6

Source: From Cletus C. Coughlin and Geoffrey E. Wood, "An Introduction to Non-Tariff Barriers to Trade" *Review the Federal Reserve Bank of St. Louis*, Vol. 71 No.1, p.37. (31-46.)

Table 5. Tariff and Non-Tariff Barriers

	Price Increase Due to Quota			Per Capita US$ Quota Cost
	Tariff	Coverage	Total	
Belgium-Luxembourg	0.9	1.4	2.3	27
Denmark	0.8	0.8	1.6	33
Germany	1.2	1.5	2.7	77
France	0.8	1.9	2.7	49
Greece	1.1	2.0	3.1	20
Great Britain	1.4	1.3	2.7	33
Ireland	5.1	1.0	6.1	30
Italy	0.1	1.8	1.9	66
Netherlands	1.1	2.1	3.2	176
Switzerland	3.9	2.0	5.9	112
Finland	0.8	0.8	1.6	34
Japan	1.6	2.4	4.0	20
Norway	0.6	1.4	2.0	77
New Zealand	3.9	3.2	7.1	73
United States	3.0	1.7	4.7	27

Sources: Tables 1, 3 and Department of Finance, 1988.

One approximation strategy is to use the information we have on one country in which we know the details of both the coverage ratio and the price effects of the quota. In the case of the United States while the effect of the quotas is to have the effect of increasing prices by 1.7% as opposed to the 2.8% identified as the effect of tariffs (Department of Finance, 1988 pp. 58-60), the "coverage ratio" of Table 3 is some 17%.[19] If this rough ratio of 10% were to be true in the rest of the world as well, a truly heroic assumption, then the effects of the non-tariffs barriers can be calculated in the manner of Table 2.[20] Table 5 gives the results.

In Table 5, column 2 gives the tariff induced price changes, column 3 the calculated induced price changes and column 4 the total effect on relative prices. The inclusion of the quota/non-tariff barriers in many cases more than doubles the effects on prices induced by tariffs. This means that the values associated with the "full cost" calculations would also more than double. The implied full cost per capita caused by the NTBs — the rent reallocation—is included as column 5 in the table.

International Factor Flows

There are many dimensions along which restrictions can be measured. In principle, the problem is the same as before. We plot the demand or marginal product of capital or labour, then the loss of freedom associated with the international immobility or interference with free exchange is the economic rent created by the discrepancy between real wage rates (or real rates or return on capital) measured in each country compared with the "world" wage or rate of return net of appropriate transportation costs. The impediments to factor mobility create a wedge between the world opportunity cost and the rewards at home. What we have called freedom is ability to move owned factors to their desired location at world prices.

Labour Mobility and Freedom

None of the countries in the above tables have a prohibition against emigration, and all have some restrictions on immigration. The actual restrictions are difficult to identify. In particular, a survey of documents depicting the restrictions on labour migration around the world is not presently available. This, as I was told by both U.S. and Canadian research divisions of the respective immigration authorities, would be an extremely useful but academic study which they themselves would like to read but would be reluctant to commission as it would be of no particular consequence to domestic policy.

In principle, the way to assess the impact of factor mobility is to estimate a demand for labour schedule and then assess the wage paid now relative to the equilibrium world wage, i.e. the wage that would be paid to labour if it were free to flow to the location of greatest remuneration. Some adjustment has to be made for differences in accumulated human capital, and each country has a different demand for various types of labour, but

in principle the task could be done. The stock of labour in any country is likely to be quantity constrained, so differences in wages times the amount of labour indicates the distortion imposed by an immigration policy. Although there are many issues related to immigration and national advantage, from the perspective of economic freedom, the lack of mobility is reflected in wage differentials on comparable labour in different countries.

Capital Mobility and Freedom

The difference between labour and capital is primarily that capital is far more mobile internationally than labour. In the jargon of economics, capital is in perfectly elastic supply at a world real rate of return. A country can impose restrictions on capital that will generally speaking reduce the quantity of capital at home, but not the real rate of return that is available to foreigners, and hence domestic residents. The cost, therefore, of restrictions on the flow of capital are borne by domestic residents, not through different rates of return at the margin, but through a lower stock of capital than would otherwise exist.

Thus unlike the case of labour, it is unlikely that a careful study of restrictions on capital flows will identify a differential between the returns in one country relative to another in a systematic fashion. In terms of defining economic freedom, the shift in the marginal product of capital schedule needed to identify the consequences of capital restrictions are particularly difficult to characterize in the absence of a returns differential.

But there are some issues related to capital and financial issues that can be identified. Table 6 indicates that not all exchange rates are free to float.[22] As categorical variables, it is not immediately useful in quantifying the degree of distortion that the different policies create.

In contrast, Table 7 points to international exchange reserve accumulation as one source of the diminution of economic freedom. Recall that our definition is that an individual has the right to allocate his or her own resources. If a national government accumulates international reserves, then that act potentially separates the exchange rate from the decisions of the private sector. Decumulation has the effect of reducing demand for foreign exchange on international markets and accumulation has the effect of increasing the demand for foreign exchange. The price of one currency vis-a-vis another is different when there are reserve accumulations and decumulations.[23]

Table 6: Categories of Exchange Rate Freedom

Country	Degree of Distortion
United States	F
United Kingdom	F
Austria	P
Belgium	wa;Z
Denmark	Z
France	Z
Germany	Z
Italy	Z
Luxembourg	Z
Netherlands	Z
Norway	P
Sweden	P
Switzerland	F
Canada	F
Japan	F
Finland	P
Greece	MF
Iceland	P
Ireland	rh;Z
Malta	rh;MF
Portugal	MF
Spain	F
Turkey	MF
Yugoslavia	MF
Australia	rh
New Zealand	rh
South Africa	rh(mult.)

Notes: Exchange Regime is reported as F=flexible; P=pegged; MF=managed float; Z=member of European Monetary System; other codes refer to IFS line numbers for specifically distorted rates.

Source: International Monetary Fund, *International Financial Statistics*, 8 June 1989.

Table 7: Foreign Exchange Rates, Reserves and Accumulation: 1987-88

COUNTRY	1987 FOREIGN CURRENCY		1988 FOREIGN CURRENCY		CHANGES		
	Reserves ($US)	Exchange Rate (-/$)	Reserves ($US)	Exchange Rate (-/$)	% Reserve Change Due to Accum.	$ Value of Reserve Accum.	% Change in the Exchange Rate
Canada	6.218	1.2998	13.517	1.1927	85	6.19	-8
France	29.634	5.34	22.359	6.059	59	-4.26	13
Germany	72.893	1.5815	53.324	1.7803	66	-12.87	13
Greece	2.5819	125.93	3.5234	148.1	166	1.56	18
Great Britain	38.56	41.12	0.53433	0.552636	155	3.97	3
Ireland	4.431	1.675	4.725	1.507	-61	-0.18	-10
Italy	27.81	1658.9	32.5	1757.2	141	6.61	6
Japan	75.657	175.2	90.514	169.36	80	11.8	-3
Finland	5.989	3.946	5.874	4.169	-189	0.22	-6
New Zealand	3.258	0.4635	2.824	0.4669	95	-0.41	1
Norway	3.128	6.2375	2.173	6.57	88	-0.84	5
Switzerland	27.162	1.813	24.045	2.0239	10	-0.32	12
Netherlands	14.174	1.7775	14.542	1.9995	594	2.18	12
United States	13.09		17.36				

*All Reserves and Changes in Reserves in Billions of US Dollars

Source: Lines 1d.d and ag from International Monetary Fund, *International Financial Statistics*, June 1989.

Table 8: The Value of Foreign Exchange Accumulation or Decumulation (1987)

	Absolute Dollar Value of Reserve Accumulation (Billions)	Per Capita Value of Accumulation
Australia	2.86	179
Austria	0.72	95
Belgium	0.99	100
Canada	6.19	244
Denmark	1.94	380
Finland	0.22	44
France	4.26	77
Germany	12.87	211
Greece	1.56	158
Iceland	0.07	292
Ireland	0.18	51
Italy	6.61	115
Japan	11.84	98
Malta	0.40	118
Netherlands	2.18	150
New Zealand	0.41	127
Norway	0.84	201
Portugal	2.52	248
South Africa	0.32	10
Spain	7.56	197
Sweden	0.69	82
Switzerland	0.32	49
Turkey	2.36	47
United States	3.27	13
United Kingdom	3.97	70
Yugoslavia	8.93	392

Sources: Table 6 and Table 2.

In Table 7, column 7 identifies the U.S. dollar value of the reserve accumulation net of currency revaluation.[24] Column 8 reports the change in exchange rates. There is clear evidence that the major currencies are managed as depreciations in local currencies. Positive values of the percentage change in exchange rates, are associated with decreases in foreign reserve holdings as central banks try to "lean against the wind" and slow the adjustment to market demands and supplies. Table 8 identifies these costs on a per capita basis at the national level.[25]

But there are more international costs to government activity than those associated with the exchange rate. Table 9 points to transfers made at the international level from one government to another. The amount of *official* development assistance is a clear example of resources extracted from one country to give to another. There is little question that this reduces freedom at home as there is no quid pro quo at the margin, nor any hint that private transfers would take place in such orders of magnitude. Column 4 reports the transfers on a per capita basis.

There are also transfers made by governments measured by the balance of payments. In some sense this is a less revealing measure than the direct government to government transfer for assistance explored in Table 9, as it nets out many transfers that are into a country as well as from a country. These transfers are reported in Table 10.

Summing Up

Table 11 provides a summary of the impingements on individual freedom from the international perspective. It is incomplete as I have been at pains to indicate, but it is useful as a starting point that can be extended by future analysis. To the extent that further research is additive, we can add a column to the table and apply the calculations directly.

What emerges from the table is that a group of countries (of those that are complete in the table) for which the diminution in freedom amounts to $600-700 per capita with tariffs and foreign exchange transactions playing a dominant role, and then the United States, Japan and Britain which have costs of freedom at a distinctly lower level of roughly $200 per capita. Part of the reason for this is that the United States and Japan are relatively large economies in which international distortions play less of a role than in smaller economies. It is also true that the levels of distortion are lower.

Table 9: Sources of International Official Development Aid: 1985

Country	Population (Millions)	Official Development Assistance (Billions of $US)	$US/Capita
United States	243.77	9.55	39
United Kingdom	56.62	1.49	26
Austria	7.56	0.25	33
Belgium	9.86	0.43	44
Denmark	5.12	0.44	86
France	55.17	4.02	73
Germany	61.05	2.97	46
Italy	57.22	1.10	19
Netherlands	14.56	1.1772	77
Norway	4.17	0.56	134
Sweden	8.37	0.84	100
Switzerland	6.47	0.30	46
Canada	25.36	1.64	65
Japan	120.75	3.80	31
Finland	4.9	0.21	43
Australia	15.97	0.75	47
New Zealand	3.25	0.05	15

Sources: Table 2 and World Bank, *World Development Report* (New York: Oxford University Press, 1986) 218-219.

Table 10. Official Unrequited Transfers, 1988

Country	Population (Millions)	Official Unrequited Transfers (Billions of $US)	US$/Capita
United States	243.77	12.57	52
United Kingdom	56.62	5.894	10
Austria*	7.56	0.071	9
Belgium*	9.86	1.283	130
Denmark*	5.12	0.131	26
France*	55.17	3.114	56
Germany	61.05	11.82	194
Italy*	57.22	2.30	40
Netherlands	14.56	1.149	79
Norway*	4.17	0.778	187
Sweden*	8.37	1.014	121
Switzerland*	6.47	-0.046	-7
Canada	25.36	0.319	13
Japan	120.75	3.05	25
Finland	4.9	0.405	83
Australia	15.97	0.158	10
New Zealand	3.25	0.063	19

Sources: Table 2 and International Monetary Fund, *International Financial Statistics,* row 77agd.

Note: * is for transfers in 1987.

Table 11. Economic Freedom Rating Per Capita Costs Measured in U.S. Dollars

Country	Per Capita Costs of Economic Freedom in U.S. Dollars					
	Tariff	Non-Tariff Barriers	Foreign Exchange	Official Aid Transfer	Official Unrequited Transfer	Total
United States	98	27	13	39	52	229
United Kingdom	73	33	70	26	10	212
Austria	190		95	33	9	327
Belgium	70	27	100	44	130	371
Denmark	137	33	380	86	26	662
France	44	49	77	73	56	229
Germany	120	77	211	46	194	640
Italy	5	66	115	19	40	245
Luxembourg	0	27	0			27
Netherlands	150	176	150	77	79	632
Norway	113	77	201	134	187	646
Sweden	81		82	100	121	384
Switzerland	443	112	49	46	7	657
Canada	304	94	244	65	13	720
Japan	27	20	98	31	25	201
Finland	101	34	44	43	83	305
Greece	31	20				51
Iceland	1164		292			1456
Ireland	327	30	51			408
Malta	376		118			494
Portugal	56		248			304
Spain	164		197			361
Turkey	54		47			101
Yugoslavia	158		392			550
Australia	397		179	47	10	633
New Zealand	268	73	127	15	19	502
South Africa	55		10			65

Sources: Previous tables. Quota data for Canada are drawn from Department of Finance, 1988, pp. 58-60.

Notes

[1] Spindler and Still (1991) discuss previous efforts to characterize economic freedom and provide a number of dimensions along which it may be measured.

[2] Strictly speaking we could interpret one set of taxes as the base period with which to compare the other, but the point is that we do not have to have comparisons only between *changes* in taxes in one country with changes in taxes in another country. We can compare the *level* of taxation at home with the level of taxation abroad.

[3] Although attributable to the tax, the triangle losses are of a "second order" of small in comparison with the "first order" rectangle losses. It is the latter that are stressed here for practical reasons. To calculate the welfare losses we need to know more information about the underlying demand and supply schedules—the relevant elasticities of demand and supply. As a matter of theory, the welfare losses are generally an order of magnitude smaller than the first order redistribution effects which are relevant to our discussion of freedom, but in principle there is no reason why they would not qualify as yet another component of freedom lost.

[4] The appropriate calculation is that the change in income, dy, equals the level of imports, M, times the (negative of) change in world prices for domestic importables, dp^*, plus the difference between the distorted value of domestic goods, p, and the world price, p^*, all multiplied by the change in domestic goods, p, and the world price, p^*, all multiplied by the change in domestic imports induced by the tariff: $dy = -Mdp^* + (p-p^*)dM$. The traditional *optimal tariff* is one that balances the gain in the terms of trade induced by the tariff, a fall in p^*, with the loss in income associated with the fall in imports.

If the home country is small in world markets, then a tariff induces no change in world prices, $dp^*=0$, and the domestic country loses in proportion to the distortion, $(p-p^*)$, which is positive as one tariff imposes a wedge between domestic and world prices, and the change in the quantity of imorts, dM, which is negative, as higher prices serve to reduce domestic imports. The effect is to reduce domestic income.

[5] The tariff will stand for general tax distortions in the following discussion. This is to simplify the exposition and retain the international flavour of the analysis.

[6] Since tariff revenue starts at zero tariff rate and ends at zero with a prohibitive tariff, there will be a region in which increases in the tariff rate increases tariff revenue, some point of maximum revenue, and a region in which increases in the tariff rate decreases tariff revenue—ultimately to zero. In the macroeconomic setting this is familiar to the popular press as the "Laffer Curve."

[7] Economic theories of rent-seeking focus on the gains, *B*, as the source of political pressure by interest groups, the producers of the importable who own some of the "fixed" factors, which lead to tariff creation.

[8] In passing it is important to remember that we are reversing the importance economists usually assign to the distortions induced by tariffs. Typically tariff revenue is assumed to be redistributed to the general population in a "lump-sum" or (at the margin) nondistorting redistribution of the tariff revenue. This is more an analytical convenience than a serious statement about the behaviour of governments. The usual notions of a tariff's distortion lies in the two shaded triangles of Figure 2. They represent the resource loss to society induced by the tariff. This is an important but very different issue than the one we are addressing here. A more detailed analysis would include both triangles as they indicate losses. As explained above, however, including them requires much more information about the details of the economy and the loss in an order of magnitude smaller than those already detailed.

[9] By analogy any other tax that chokes-off exchange.

[10] Where the measure fails to allow simple application is the case in which there is a prohibitive tariff and no domestic production. Without insight into the demand curve, there is little we can say other than to report the nominal tariff schedule.

[11] We will assume that the countries under consideration are small: they do not have the ability to affect the world price. Although no doubt an oversimplification in some situations, a great deal more information at every level of generalization—e.g. the elasticities of excess demand—is required to go much further.

[12] More precisely the rent created depends on the elasticity of supply, ε, and comes to $\$10+(1/2)t^2Q_0\varepsilon$ in the linear case, where Q_0 is the level of

domestic production prior to the imposition of the tariff. Should foregone benefits be taken into account on the demand side, we would add another triangle proportional to the square of the tariff rate, the level of domestic consumption, and the elasticity of demand.

A more complete conception of economic freedom which requires even more information would take account of the repercussions in other domestic markets. These markets may be distorted. This leads to additional revenue gathered through other taxes, and rents redistributed because of the relative price changes. Although a theoretically attractive stance, it is not a practical alternative for the present paper.

[13] Where possible the import penetration ratio is issued as reported in Pearson and Ellyne (1985, p. 404-405). Where it is not available, the world average is employed—0.33 of GDP. This is then multiplied by two under the assumption that trade is roughly balanced to obtain the direct effects on traded goods.

[14] An alternative such as costs relative to per capita domestic product would scale each individual's loss by the average level of domestic income. But the implicit assumption of such a scaling is to say that a dollar's loss in freedom in one country is different than a dollar's loss in another country.

[15] Coverage refers to the share (in value) of products restricted relative to total imports. Restricted products include "core" NTBs: variable import levies, quotas, non-automatic import authorizations (voluntary export restraints, restrictive import licensing, and trade covered by the Multifiber Arrangement).

[16] Australia, Canada, and Sweden were exluded because of problems associated with obtaining adequate measures of the NTBs (Coughlin and Wood, p. 35).

[17] This is in terms of their significance to developed countries. Their effects on exporting, poorer, less developed countries is not assessed here.

[18] Their study is drawn from an unpublished manuscript by Laird and Yeats, *Quantitative Analysis for Trade Barrier Analysis* (Macmillan, forthcoming) which appears to be the last word on the subject. In an aerlier study Roningen and Yeats conclude that there is no relation between simple coverage of a sort and relative price differences. They attribute this phenomenon to a masking of the effect of the coverage by other domestic government interferences (Vernon Roningen and Alexander Yeats, "Non-tariff Distortions of International trade: Some Preliminary Empirical Evi-

dence," in Hans Singer, Neelamber Hatti, and Rameshwar Tandon, *New Protectionism and Restructuring* (New Delhi: Ashish Publishing House): 317-332.

[19] Note that this is the quota rate in the U.S. but the coverage rate refers to the core NTBs.

[20] No coverage ratios were available on a comparable basis for Canada, nor were the detailed effects of the entire quota structure readily available for any of the other countries. Detailed studies on the structure of imports and exports have been done for European countries so that potentially there are more data available.

[21] Another difficulty is that the wage rate does not capture the full return to labour in most economies. There is to a greater or lesser extent a pro-rata splitting of publicly provided services. Thus wage alone does not capture the full value of the gain to mobility.

[22] As before our definition of freedom may conflict with income maximization. A country may not be an optimum currency area and may choose to fix its exchange rate with another country. This may increase income. But from the point of view of individual freedom within a country, it seems more reasonable to insist that an individual be free to exchange whatever currency he or she is paid for whatever other currencies are available without interference by the national authority. This begs the question, however, of competitive currency creation since it assumes the current extant units of exchange as the only alternatives.

[23] Here we ignore the issue of the loss in freedom from the initial state of reserve accumulations and look only at the implications of the changes in the stock.

[24] This is a bit ticklish. If the foreign currency depreciates against the U.S. dollar by 10%, I treat foreign holdings of a constant stock of U.S. dollars as no changes in accumulation.

[25] There are obviously more dimensions to international financial arrangements than those described here. The security of assets in Switzerland and Luxembourg is not captured by these measures, nor are the effects of multiple exchange rates in, for example, Belgium and South Africa, let alone Yugoslavia.

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Discussion

Milton Friedman liked the general approach to valuing economic freedom with a dollar measure as it goes beyond the internal calculus. The problem with this approach arises from the presence of transactions costs. There are tradeoffs to be made: national defense and tariffs, for example. A tax may be the least costly way to preserve economic freedom by preventing long-run domination by a foreign power.

Richard McKenzie remarked that what is here is an index of government impediments. But with the advent of new technologies, fewer governmental institutions are needed. Thus we are freer regardless of the state of tariffs. A well-known New York insurance company ships data (for entry into a company data base) to Ireland and then ships it back to New York each day. Newer technologies may lead to more economic freedom in and of themselves.

Tom DiLorenzo made two points. First, the costly, rent-seeking behaviour of lobby groups is manifestly obvious as one sees the many companies springing-up around Washington. Second, foreign aid has two costs. The first is the cost in economic freedom to the country giving the aid (as resources are allocated by the government), and the second is the cost to the people in the foreign country as the aid attempts to prop-up governments that reduce economic freedom.

Clifford Lewis suggested that nominal restrictions and actual restrictions on economic freedom were not always the same. In many LDC's there are prohibitive tariffs, but everything is smuggled and available. AID conducted some price surveys of certain computer products and found that they were cheaper (than in the United States) in some countries that nominally prohibited their entry. The reason is that the added cost to smuggled goods is a function of weight, and software does not weigh very much.

Jack Carr suggested that more thought be given to the points raised in the paper that tax revenue falls with the higher tax rate beyond some point, and amplified the issue that once some government is taken as needed, we must have some tax revenue. Thus to evaluate economic freedom, one needs the whole picture of a society.

James Gwartney remarked that trade taxes understate the degree of loss in economic freedom to the extent that customs inspectors have discretion about what rates to charge. The bribes to bring merchandise into a country "tax-free" should be counted against economic freedom as they add to the excess burden.

Easton replied that his measure is not a measure of excess losses but a measure of first-order losses. In particular, it measures extant price distortions that diminish economic freedom through rent reallocation as well as, in principle, the second order losses. The whole picture is not at issue, he argued, as this measure of the loss in economic freedom is a measure along

a single dimension—the economic freedom dimension, not an effort to measure the highest level of income, or even contingent freedom in the future. Thus economic freedom can be traded-off against alternatives, but this is a different issue than that of measurement and quantification.

Alvin Rabushka argued that identifying fixed exchange rates with losses in freedom is wrong. For example, Hong Kong benefitted enormously from fixed rates. Flexible rates are not intrinsic to the notion of freedom. Protection of the standard of value is what needs to be protected. Easton replied that freedom and income do not necessarily coincide, and to the extent that the foreign exchange authority is involved, resources are allocated by someone other than the individual who earned the money. Walter Block suggested that the gold standard period was one of free exchange. Milton Friedman responded that this was not the case as governments were intimately involved in the gold standard from the beginning. It was a pegged price for gold. If the market had chosen, it probably would have chosen silver. Further there was a confusion between pegged exchange rates and a unified currency. Hong Kong went to a unified currency with the United States dollar and did not prohibit the use of other currencies. The right indicator is whether there is a central bank, and in Hong Kong's case, there was no central bank. It would not improve economic freedom if California started to issue California dollars.

Walter Block argued that there was a contradiction in Easton's measure. Easton says that a government can increase income through an optimal tariff, but then tries to use income as a measure of economic freedom. How can this be if they go in opposite directions? Easton replied that we can distinguish full income and measured income. Economic freedom is part of full income. We need a marginal valuation of economic freedom to aggregate it with measured income. One possible way would be to use immigration among countries with measured economic circumstances as similar as possible. We could then "price" a measure of economic freedom in terms of immigration flows.

Milton Friedman was concerned with the use of the exchange rate to add-up losses in economic freedom across countries. He felt that some kind of purchasing power exchange rate should be used to compare countries. Is a dollar in the U.S. as relevant as a dollar in Italy? The issue is that the income used should be potential, not actual, income. If a country loses $5, then it is more serious if the potential income in that country is $50 rather

than $500. India has a potential income far greater than current income. We do not get a good measure of the scale of the economy by using current income. Easton replied than an ideal measure would be with "one world." Friedman agreed saying that the utopian level of income would be the levels of national incomes associated with freely flowing factors of production as well.

Alan Reynolds suggested that some revenue needed to be raised through tariffs. Milton Friedman responded that we use the difference between the tariff and domestic excise taxation to measure protection. Walter Block argued we need to count all current restrictions regardless of the reasons. He didn't care why there was a draft, just that it exists. Friedman replied that you may need a short-run loss in freedom to protect economic freedom in the long-run. The draft is a good example. It may be necessary in Israel or even Switzerland. In the short-run it may be impossible to satisfy the need for soldiers without some kind of forced service. It is certainly a restriction on economic freedom.

James Gwartney was concerned with Easton's measure of economic freedom that did not normalize for the size of the country. It would lead to a situation that a large country would have larger losses in freedom just because it was large. Easton replied that a dollar loss was a dollar loss and that the issue went back to that raised earlier about the purchasing power prices and potential income versus measured income.

Measures of Economic Freedom

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Introduction

DURING THE LAST RATING OF Freedom Conference I proposed a measure of economic freedom that seemed to offer some hope that a cardinal measure of economic freedom could be devised. In this paper I propose to elaborate that measure and suggest some ways in which it can be implemented.

Conceptual Measures of Economic Freedom

Although there is no generally accepted definition of economic freedom, I will define it as the allocation of one's own resources at one's own behest.[1] Two possible approaches to measuring economic freedom might be characterized as the "constructive" approach and the "impediments" approach.

At first blush, the constructive approach is the most natural to an economist. Economic freedom is conceived of as a separate argument of the utility function. An increase in "F" has exactly the same impact on utility as an increase in consumption of any other good or service. What remains to be decided is what constitutes the measure of "F." The second notion of freedom is based on impediments. The essence of this conception is that economic freedom is associated with the ability to trade at prices set by individual agents without impediment. Any artificial wedge between the price demanded and received reduces the freedom of individual economic agents. The most relevant ingredient of the artificial wedge is the application of governmental authority through taxation and regulation. The reduction in economic freedom is identified as the value of the impediments.[2]

What should a definition or a measure of freedom do? A definition should correspond to a common understanding of what economic freedom means. But whose understanding? I will take those who share the view that the (market) economy functions best with a minimum of government interference, the philosophy of economic liberalism, as the appropriate audience at least initially.[3]

A definition should pass some test of usefulness. It should be possible to use the definition to develop frameworks that answer questions we wish to pose. In this case we wish to rank countries as to the amount of economic freedom they permit. I see two competing approaches to the definition of economic freedom which are characterized in the next two sections.

The Constructive Approach

If we define freedom constructively, we need a characteristic or good or service that can be identified with economic freedom. It may be associated with a variant of a particular set of economic activities. For example, our notion of economic freedom may be that higher income yields command over more resources and makes people "freer." Alternatively, more choice or a more equal distribution of income may be what we wish to use as a definition of more freedom. In this way we can produce an index of any number of "goods" to represent economic freedom. Regardless of what is chosen, however, the constructive definition allows economic freedom to be "traded-off" against other arguments of the utility function and will

imply that there is a demand for economic freedom to which the usual economic calculus applies.

Although these are congenial terms to economists, the difficulty with this conception is that no single construction has emerged to claim the mantle of "freedom." Until such a "good" is identified, the constructivist approach is empty. To date the most promising approaches have identified many categories of activities which contribute to economic freedom (Spindler and Still (1991), Scully and Slottje (this volume) and Spindler and Miyake (this volume)). A review of past Symposia, however, provides little grounds for complacency that "something will turn up" as a common core of goods and services to identify as the set of activites constituting economic freedom.

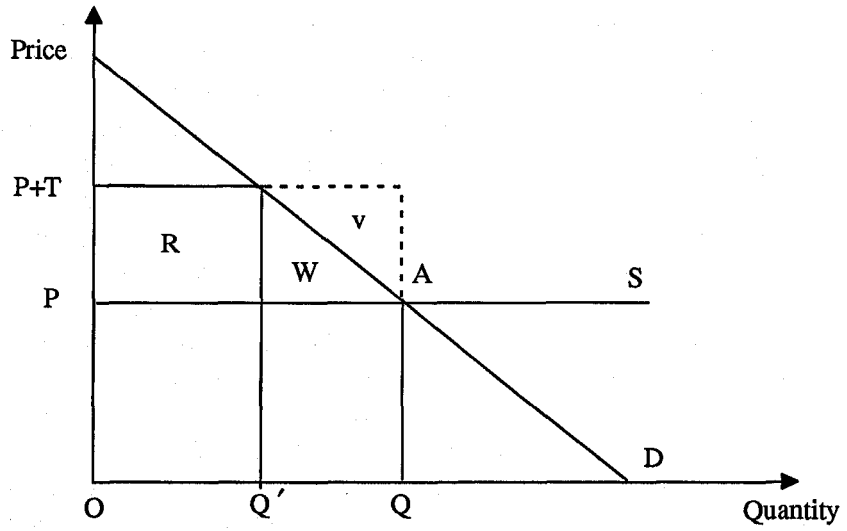
The Impediments Approach

Unlike the constructive approach, the impediments approach to a definition of economic freedom stresses interference with free exchange as reducing freedom. This approach flows from the assumption that the demand price reflects the individual's marginal benefit from consumption and the supply price reflects the marginal value of resources brought into production. Since both are the result of an "individual" optimization, any interference reduces utility. But this is awkward. As pointed out in Easton (this volume, previous chapter), an optimal tariff raises income (and, if you will, utility) of those imposing the tax. Yet, I think we are in general agreement that the tariff reduces economic freedom, i.e., if we think of economic freedom as reflecting the individual's right to the fruits of his or her own labor (or, more generally, one's own resources), then the interference in the pricing of a transaction reallocates economic rents, and that reallocation is a reduction in economic freedom—the right to allocate one's own product.[4] If the amount of one's own economic reward allocated freely could be measured directly, and valued explicitly, perhaps we would have an ideal measure. But failing this, the impediments viewpoint focusses on measuring the amount of economic rent being reallocated by government action.[5]

To see what is being defined as a loss in freedom, consider Figure 1 in which equilibrium is initially at point **A**, the intersection of the downward sloping demand schedule, **P*D**, and the (horizontal) supply schedule, **PS**,

for some good. Equilibrium prices and quantitites are at **P** and **Q**. Now imagine the imposition of a tax that increases price to **P+T**, from **P**. As is well-known, the value of the consumption foregone is approximated by the "triangle" losses in region **W** in Figure 1.[6] The loss in economic freedom, however, is something more. All transactions that were taking place at point **A** have been impeded. The impediment to these transactions is in two parts. The losses associated with foregone consumption in region **W**, plus the impediment to every transaction that is made—the rate of tax times the volume of transactions, i.e., the value of the tax, region **R**.

Figure 1. Economic Freedom and Economic Welfare Measurement



Notice what is being defined in this characterization of economic freedom. We are not defining a loss in economic freedom as the loss in economic welfare associated with a distortion. We are, instead, defining the loss of economic freedom as the (marginal) value of the distortion weighted by the number of transactions both undertaken and foregone. The triangle loss is part of the loss in freedom, but only insofar as it reflects the weight of foregone transactions rather than realized transactions. We could approximate the loss in freedom as the quantity that would have transacted without the tax, **Q**, times the distortion, in which case the rectangle,

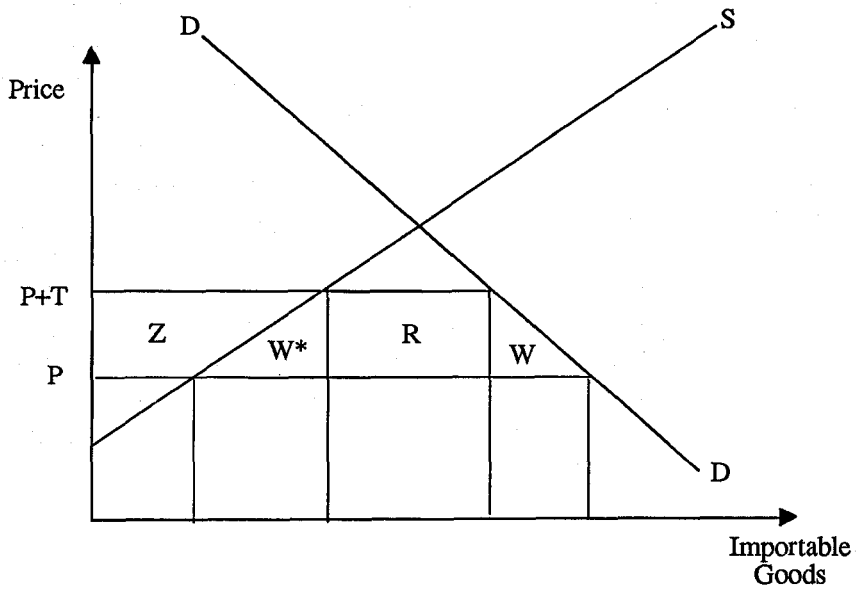
R+W+V, would provide one measure of the loss in freedom. The transaction weight with which we choose to aggregate the distortion is unimportant for small changes, but it becomes of crucial importance if we are considering distortions that are prohibitive in a market. The greater the number of foregone transactions, the more important the distinction. If we have enough information about a particular market, then we can calculate the loss in freedom as the area between the demand and supply schedules foregone.

Some Complications

This conception of economic freedom deals with rent reallocation, but there are a number of complications. In the (first) case of the simple tax described in Figure 1, the appropriate measure is the value of the tax itself, **R**, plus the triangle, **W**. In the (second) case of a prohibitive tax, then rent reallocation is approximated either at the price at which the demand schedule hits the axis, **P***, times the number of foregone equilibrium transactions, **Q**, or with sufficient information, the triangle loss itself—**P*AP**. It would be grossly inappropriate to use the actual (zero) transaction weights. In the (third) case of traded goods there are two possible measures of the loss of economic freedom.[7] These are displayed in Figure 2. We have the losses associated with the tariff revenue, **R**, and the triangle welfare losses, **W** and **W***, and in addition we include the reallocation of rent that takes place as a result of the higher prices. Area **Z** is being reallocated from consumer to producer and as a result, economic freedom is being reduced. In Easton (previous chapter) I referred to the latter as an indirect loss. This led to the observation that the loss in economic freedom in a traded-goods setting is (approximately) proportional to the volume of consumption times the value of the tariff rather than merely the value of tariff revenue plus the triangles of welfare loss.

If rent reallocation is our characterization of a reduction in economic freedom, then we need to establish some principles by which we can measure the various countries of the world. The first principle is that we can sum the measured distortions in each market to reach a total. That is, we do not have to worry about the effect that a change in a distortion in one market has on the value of the distortion in any other. Consider two

Figure 2. Economic Freedom and Traded Goods



markets in which the goods are substitutes. If we introduce a distortion in the first market, we can calculate the rent reallocation exactly as described in Figure 1. In the second market, the demand schedule will shift. To the extent that there is already an existing distortion in that market, the increase in demand will raise additional revenue and be captured fully when we measure the distortion in the second market.[8]

Thus the sum of the tax revenues plus the triangle losses in each market is a measure of the loss in (direct) economic freedom. These are losses in the sense that the government reallocates the resources directly in the case of taxation, and by forcing individuals to forego transactions in the case of the triangle losses. We saw from Figure 2 that indirect losses accumulate when goods are traded and that these losses are (roughly) proportional to the value of domestic production. Indirect losses in freedom also occur when demand shifts cause prices to change in secondary markets. Unfortunately these are less easy to measure and result from an adjustment on the part of individuals to the new configuration of demands and supplies induced by government policies.

The second principle is that for purposes of measurement, all distortions can be conceptualized as relative price distortions.[9] If there are

quantity restrictions, or there are prohibitive restrictions, then, in principle, knowledge of the relevant demand and supply schedules would allow measurment of the direct losses. Figure 1 remains appropriate with only a slight change in emphasis. Let **Q'** be the restricted quantity. The "tax revenue" becomes a reallocated rent and is now measured as an **indirect** loss of freedom. The rent accrues to whichever group has the property rights to the restricted supply, and the rest of the analysis is the same. With a prohibitive tax, knowledge of the equilibrium quantity and the highest price that could be charged would allow us to identify one measure of lost freedom—rectangle **P*Q** in Figure 1, the product of the price and the equilibrium quantity. However, if we know the demand and supply schedules, then we can either calculate the area under the demand schdule, **P*PQ**, measure of the loss in freedom as well. Although conceptually possible, calculations of this sort are commonly done with respect to the impact of non-tariff barriers and are notoriously laborious.

Directions

What then are the lessons for a set of calculations based on this methodology? In the first instance, the level of total taxation (relative to income) gives a rough measure of the direct loss in freedom through government reallocation of rents. This includes revenue taken from all levels of government.[10] These kinds of data are comparatively easy to obtain. What about the more difficult measures of impediments? In study after study (Spindler and Still (1991), Spindler and Miyake (this volume)) we see examples of the myriad ways in which governments restrict choice. There is no magic formula here. The "correct" way to do the job is to estimate the distortions in each and every market.[11]

But this is an enormous undertaking. One alternative is to consider only certain "sectors" of the economy. The rationale underlying an index is that the transaction is the unit of account. The distortion of transactions is what leads to the loss of economic freedom. Our problem is to identify a significant proportion of transactions to assure ourselves that we have a robust measure of the loss in economic freedom. But how have transactions based theories proceeded in the past? Recall the discussion underlying the early quantity theory (Friedman, 1968). Fisher wrote the quantity equation as

MV=PT where the measures of velocity and prices referred to **all** transactions. What transpired in part was that it was difficult to measure all transactions, and, gradually, **final** transactions, national income, was substituted as an available measure.[12] Although the theory looked the same mechanically, $MV_y=P_yy$, the subscripts remind us that it refers to a different level of economic activity.

Another alternative is to construct a computable general equilibrium model of the economy and identify the major distortions. Such a framework is popular in many trade and tax policy contexts but requires a decision about which sectors are most important. Finally we may wish to move to an instrumental level and try to identify a measure that we think may be associated with some of the less easily measured forms of taxation. Having chosen such a measure, we then try to find a "test" of the measure in some dimensions. This is the tack chosen in the remainder of this paper.

Indexes of Economic Freedom

In this section of the paper I illustrate a method by which two (highly imperfect) measures of economic freedom can be devised. The principle behind both measures is that the loss in economic freedom arises from two sources: the overt taxation by government, and by the regulations that the government imposes. One natural measure of the direct taxation by government is the level of government expenditures: the real withdrawal resources from the economy for reallocation.[13] No such simple tool exists for measuring the levels of regulation and the attendant loss of economic freedom. This is the major problem confronting the measurment of economic freedom in this framework.

Let us assume for the moment that we have such an appropriate indicator. If we have such a measure we could add it to the direct costs and be finished. Difficulties arise from two sources. First, if we are unable to identify the actual losses associated with the unmeasured impediments to exchange, and are forced to choose a proxy measure, how do we link this to the better identified government spending measure in a consistent fashion? Second, we want the indirect losses to be comparable to the direct losses., i.e., with total revenue (or expenditure) we have a measure of all government taxation which is gathered throughout the economy. We are

not concerned that a little further study will add a new unidentified amount of explicit revenue and hence cause a dramatic change in the measured loss in freedom from this source. With the measure of indirect costs, however, the more we study any particular economy, the more we are likely to discover regulatory impediments to free exchange. As a result there will be a tendency to identify higher costs with more closely scrutinized environments. This is likely to engender a spuriously high measure of loss for economically developed countries.[14]

Weights and Measures

Let us consider a particular proxy for regulatory cost and develop a methodology for integrating the direct and indirect costs when the latter are measured by proxy. Suppose that regulations are developed and deployed by governments in proportion to the number of government employees. Thus a greater number of government employees per capita means a greater degree of regulatory activity. Assume further that the distortion in prices caused by regulatory activity is the same in each country. We have an overall loss index that looks like (1):

(1) $$\text{Loss} = F(G,E)$$

in which the Loss is equal to some function of government spending (in levels or more likely relative to national income) and the number of employees (either in levels or per capita). If we wish to generate an index of costs, then we can do so by providing a weighted average of government spending and employment. What weights should we use in the index?

Here I think the answer is clear. The weights must derive from the universe of transactions from which they were collected. For example, suppose that government revenue arises primarily from revenue collected by a tax on income. Suppose further that impediments to exchange are primarily located in final goods and services (as distinct from intermediate goods and services). In this case the value of trade in each market relative to the sum of the value of trades in both markets would be a reasonable weight. In the example of the Loss Index of equation 1, the weights might be specified as in equation 2,

(2) $\text{Loss}=G^{\Theta}E^{1-\Theta}$, where $\Theta = [WL/(Y+WL)]$

where the Y is national income, WL, is labor income and Θ is the share of labor income (transactions) in the value of all transactions under consideration.

Index F1

The first index I have constructed is a simple one. It relates the loss in freedom to the share of government expenditures in national income and the proportion of the population that works for the government. In this case the weights are equal since the transactions cover the same ground—the entire economy. Both government revenues and impediments to exchange introduced by government employees are present at all levels of exchange in the economy. So that a doubling of the inputs amounts to a doubling of the loss in freedom, I have taken the square root of both percentages:

(3) $$F1= (G/Y)^{0.5} (EMPL)^{0.5},$$

where (G/Y) is the proportion of all government spending relative to national income, and (EMPL) is the per capita employment of all government workers—national, "state" and local.[15]

Column 1 of Table 1 lists the countries in order of their loss in economic freedom—the index, F1, which is reported in column 2. The index itself runs between zero and unity with a higher score suggesting more impediments. To see how our sample is distributed, Figure 3 displays a plot of the distribution of the values of Index F1 with a few of the developed countries identified. The ranking of the countries calls attention to the limitations of the construction. It raises the question whether Senegal is really more free economically than Canada or whether Japan is more free than the U.S. What may be highlighted here is that the amount of bureaucratic obstruction per bureaucrat is different in the different countries. The presence of a number of African countries not known for their economic liberalism raises the same question although perhaps we might also need to ask if transactions are more free than our casual empiricism suggests. Perhaps there are a large number of transactions that take place outside the range of the government's interference. Among the developed countries, however, there is some correspondence with casual observation.

Figure 3. Impediments to Freedom: Index F1

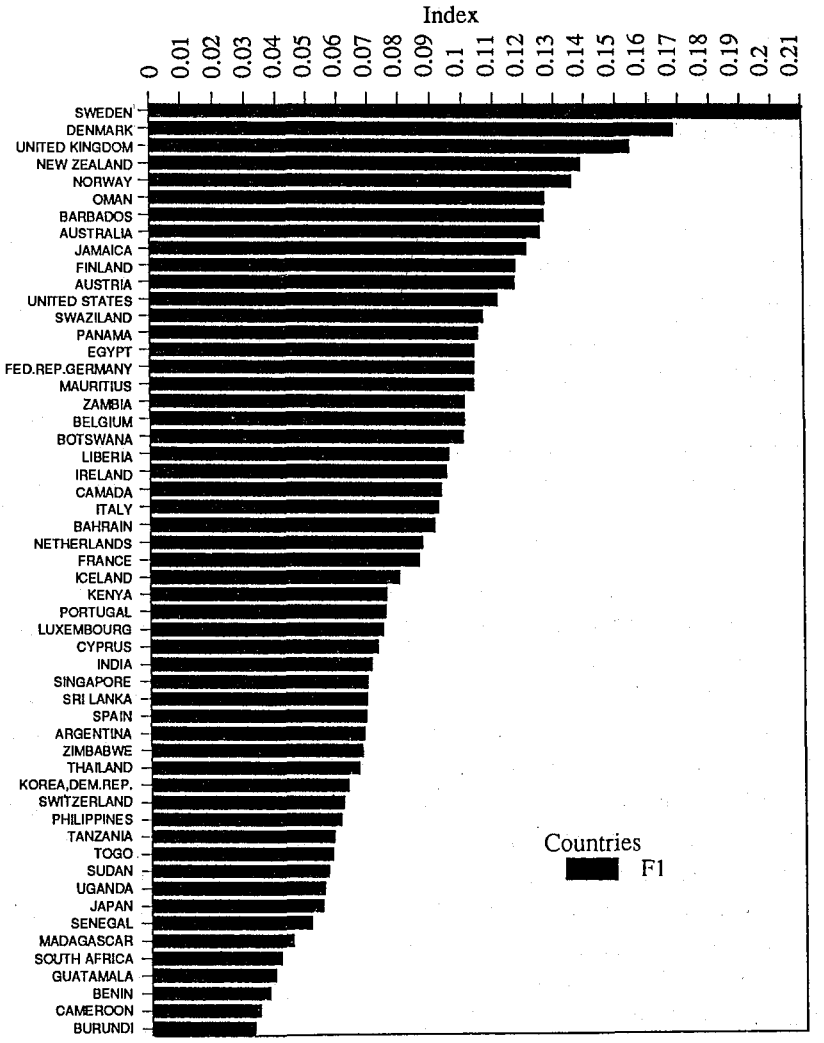


Table 1. Economic Freedom Ratings
(Least free shows highest impediment score)

Country	F1	F2	F2(G)	F2(E)	F2/ PGDP (1987 U.S. Dollars) Per Capita	Country
Sweden	0.21	287	280	7	0.40	Zambia
Denmark	0.17	271	264	7	0.39	Liberia
United Kingdom	0.15	2286	2183	103	0.39	Oman
New Zealand	0.14	4942	4134	808	0.36	Sweden
Norway	0.14	244	235	9	0.35	Swaziland
Oman	0.13	854	824	30	0.34	Botswana
Barbados	0.13	801	752	49	0.32	Jamaica
Australia	0.13	1224	1163	61	0.31	Panama
Jamaica	0.12	4466	3780	686	0.30	Denmark
Finland	0.12	314	310	4	0.29	Senegal
Austria	0.12	3537	3068	470	0.29	United Kingdom
United States	0.11	302	295	8	0.29	India
Swaziland	0.11	388	366	22	0.29	Egypt
Panama	0.11	214	206	7	0.27	Kenya
Egypt, Arab Rep.	0.10	2778	2424	353	0.26	New Zealand
Germany, Fed.Rep.	0.10	305	296	9	0.26	Zimbabwe
Mauritius	0.10	100	97	2	0.25	Tanzania
Zambia	0.10	3908	3347	561	0.25	Norway
Belgium	0.10	1290	1231	58	0.23	Portugal
Botswana	0.10	152	147	4	0.23	Togo
Liberia	0.10	115	112	3	0.23	Uganda
Ireland	0.09	1867	1713	154	0.22	Ireland
Canada	0.09	95	95	1	0.21	Burundi
Italy	0.09	155	150	5	0.21	Sudan
Bahrain	0.09	3005	2651	354	0.20	Germany
Netherlands	0.09	534	471	63	0.20	Mauritius
France	0.09	2590	2175	415	0.20	Finland
Iceland	0.08	2505	2106	399	0.20	Austria
Kenya	0.08	2348	1885	463	0.20	Australia
Portugal	0.08	123	120	3	0.19	Madagascar

Table 1. Economic Freedom Ratings
(Least free shows highest impediment score)

Country	F1	F2	F2(G)	F2(E)	F2/ PGDP (1987 U.S. Dollars) Per Capita	Country
Luxemburg	0.07	1529	1189	340	0.19	Barbados
Cyprus	0.07	3366	2818	547	0.19	United States
India	0.07	354	338	15	0.19	Philippines
Singapore	0.07	915	897	19	0.18	South Africa
Sri Lanka	0.07	252	249	4	0.18	Cameroon
Spain	0.07	1937	1709	228	0.18	Italy
Argentina	0.07	2326	1971	355	0.18	Belgium
Zimbabwe	0.07	1371	1266	106	0.17	Cyprus
Thailand	0.07	353	328	25	0.17	Sri Lanka
Korea,Dem. Rep.	0.06	2700	2293	407	0.16	Canada
Switzerland	0.06	109	106	2	0.16	Benin
Philippines	0.06	417	386	31	0.16	Thailand
Tanzania	0.06	2049	1773	277	0.16	Netherlands
Togo	0.06	1733	1448	285	0.16	Bahrain
Sudan	0.06	2135	1815	320	0.15	France
Uganda	0.06	688	628	60	0.14	Korea
Japan	0.05	2115	1830	285	0.14	Luxemburg
Senegal	0.05	1223	1079	144	0.14	Spain
Madagascar	0.05	1675	1332	342	0.13	Iceland
South Africa	0.04	552	465	88	0.12	Argentina
Guatemala	0.04	1427	1151	276	0.11	Singapore
Benin	0.04	1526	1232	293	0.10	Switzerland
Cameroon	0.03	190	176	13	0.10	Guatemala
Burundi	0.03	1248	1051	197	0.09	Japan

Sources: Construction as explained in text.

A Second Index

The first Index is just that. It is an index without any real dimensionality of its own. Until we can identify some way to test it for consistency and stability, there is little to be said for it other than that it picks up some variables that we might reasonably think are associated with economic freedom. The second index is more in the spirit of the cardinal measures that I have advocated. The attractiveness of using government spending as a measure of the distortion is enhanced if we set ourselves to calculating the per capita loss in income associated with government interference. In this case we compute government expenditure per head, displayed in the column labelled F2(G) in Table 1, and add it to the value we attach to the loss in economic freedom associated with the number of government employees, the column headed F2(E). The crux of the matter is to provide a sensible basis on which to evaluate the cost in economic freedom imposed by each government employee.

An approach to this pricing problem is to find some tradeoff between the utility diminishing properties of government employees and other aspects of life. To this end I have estimated an immigration function for the United States. In principle, immigration depends upon any number of economic factors and constraints.[16] My framework is to regress the rate of immigration from each country to the U.S. on the proportion of income spent by the government and the per capita number of government employees and several other variables including per capita income and whether the country imposed emmigration restrictions. This is written as equation 4:

$$(4) \qquad IMM = \alpha_0+\alpha_1(G/Y)+\alpha_2 EMPL+\alpha_3 \log(GNP)+\alpha_i X_i$$

where IMM is the amount of immigration into the U.S. from each country (1981-87) relative to the population of that country, (G/Y) is the share of all government spending in national income, EMPL is the per capita number of government workers, and log(GNP) is the logarithm of per capita GDP.[17] Among the variables included, the vector, X_i, in equation (4), were several different measures of emmigration restrictions and political and civil liberty indexes familiar to those who have followed this literature. Once the

regression results have been calculated, ask the following question: What is the trade-off between income and the number of government employees?[18] This question can be answered by looking at the tradeoff between real income and the number of employees of government. A given level of immigration can be obtained by having either more government employees per capita or a lower level of domestic income. This means that we can attach a value to the number of employees of government—in this case the ratio between the estimated values of α_2/α_3.

A Regression Digression

The results of various regressions for the United States are presented in Table 2. The first regression shows that there is a negative relation between the rate of emigration to the U.S. and each government's spending although this is not of particular importance to our analysis.[19] At the same time, there is a positive relationship between the number of government employees per capita and emigration to the U.S. I have highlighted this result because the same pattern persists in all the regressions (both for the U.S. and Canada). The units of the dependent variable are per thousand of population. Thus an increase in government spending from 10% of national income to 20% of national income will lower the rate of immigration to the U.S. by 3 per thousand (from the immigrant's country.) Similarly, an increase in government employment per capita from 1 to 11—the extremes of the range, will be associated with an increase of roughly 13 per thousand.[20] As is to be expected, the R^2 is low and the standard error of the estimate is large relative to the mean of the dependent variable.

Table 2: Rates of Immigration to the U.S., 1981-87
Dependent Variable is IMM (35 Observations)

Regression 1:

VARIABLE	COEFFICIENT	T-STAT.,
C	6.03	1.31
(G/Y)	-0.27	-2.01
EMPL	1.27	2.38

R-squared 0.16, Mean of dependent var, 2.36
Adjusted R-squared 0.11,
S.E. of regression 7.9

Regression 2:

VARIABLE	COEFFICIENT	T-STAT.,
C	42.49	2.14
(G/Y)	-0.37	-1.68
EMPL	1.75	2.76
LPGDP	-4.28	-1.92
EM1	-7.21	-2.34

R-squared 0.29, Mean of dependent var, 2.36
Adjusted R-squared 0.20
S.E. of regression 7.54,

Regression 3:
Number of observations: 53,

VARIABLE	COEFFICIENT	T-STAT.
C	21.45	1.57
(G'/Y)	-0.15	-0.98
EMPL	1.10	2.20
LPGDP	-2.14	-1.41
POLIT	-2.12	-0.72
EM1	-4.06	-1.84

R-squared 0.20, Mean of dependent var, 1.57
Adjusted R-squared 0.11
S.E. of regression 6.51

Sources: IMM, Table 7 (Department of Commerce); G, and raw data for EM1 (Spindler and Miyake, HF4 and HF6); EMPL (Heller and Tait, Table 21); G',(Wright, various countries); POLIT, (Gastil and Wright); PGDP, and population (AID, Table I).

The second regression in the table, a more complete specification, indicates that although the t-values are marginal by traditional statistical standards, nonetheless the effect of per capita income and EM1, a dummy variable that identifies whether the country has any form of emigration restriction, are consistent with our expectations.[21] Higher income abroad reduces emigration to the U.S. A country with 10 percent higher income will reduce immigration to the U.S. by roughly 4 per thousand. Emigration restrictions imposed by foreign countries reduce it as well.

The third regression in the table shows the consequences of including Gastil and Wright's (1988) measure of political freedom. A similar pattern of results obtained when their measure of civil liberties was used as well—a result not reported. Unlike Friedman's (1988) finding that civil liberties predicted growth rates better than political freedom, I found both to be insignificant in predicting emigration to the U.S.[22] The third regression is also illustrative of several efforts to extend the analysis. The expenditure measure is different. In order to expand the sample it is limited to central government expenditures. A number of other experiments were tried with different measures of political freedom and dummy variables for regions and the like. Except for reducing the significance levels of all the variables, the signs and magnitudes remained as reported in Table 2.

A similar approach was taken to the Canadian immigration rate. These results are listed in the Appendix as Table A. Only four years (1984-87) of data are used and there is some indication that the influence of Canadian immigration restrictions changed during the period. Although the signs are consistently the same as those obtained for the U.S., the significance levels are lower. There are also fewer immigrants in comparison to the U.S.

There is a final observation to support the notion that something useful is being identified by the regression. I regressed the difference (suitably normalized to reflect the different sample size) of the rate of immigration from each country to Canada less the rate of immigration to the U.S., **DIF**, on the measure of each country's government expenditure and government employment. This is reported in Table 3. Since both countries are politically stable and share many attitudes and values, I was curious as to the effect of our two measures. As is apparent from the positive sign on (G/Y), those who come from countries which have relatively more government spending come to Canada, and from the negative sign of EMP, those who come from countries that have more government employees per head come to

the U.S. This would be consistent with the casual observation that emigrants are selecting on the basis of whether they prefer relatively fewer impediments to the market or more government expenditure. During this period, Canadian policy has not been designed to admit the most economically able.

Constructing the Index

With the estimates of the coefficients on EMPL and log(PGDP) from which we form the ratio, α_2/α_3, we can develop our additive index. The weight on EMPL is roughly 0.4 x Y.23 This sub-index, which gives the value of EMPL in promoting emigration to the U.S., is reported in Table 2(E). The sum of the two sub-indexes, F2(G) and F2(E) is reported as F2. In addition, the final numerical column of Table 1 is a normalized score—the index F2 relative to per capita GDP. It is this magnitude that is reflected in the ranking of the final column. Figure 4 displays the plot of these per capita scores. It is interesting that among the developed nations the rank remains relatively similar to that devised in the first index. Unlike the first index, however, index F2 reflects the dollar value of the impediments.

Table 3. The Difference Between Per Capita Immigration to Canada and Per Capita Immigration to the United States

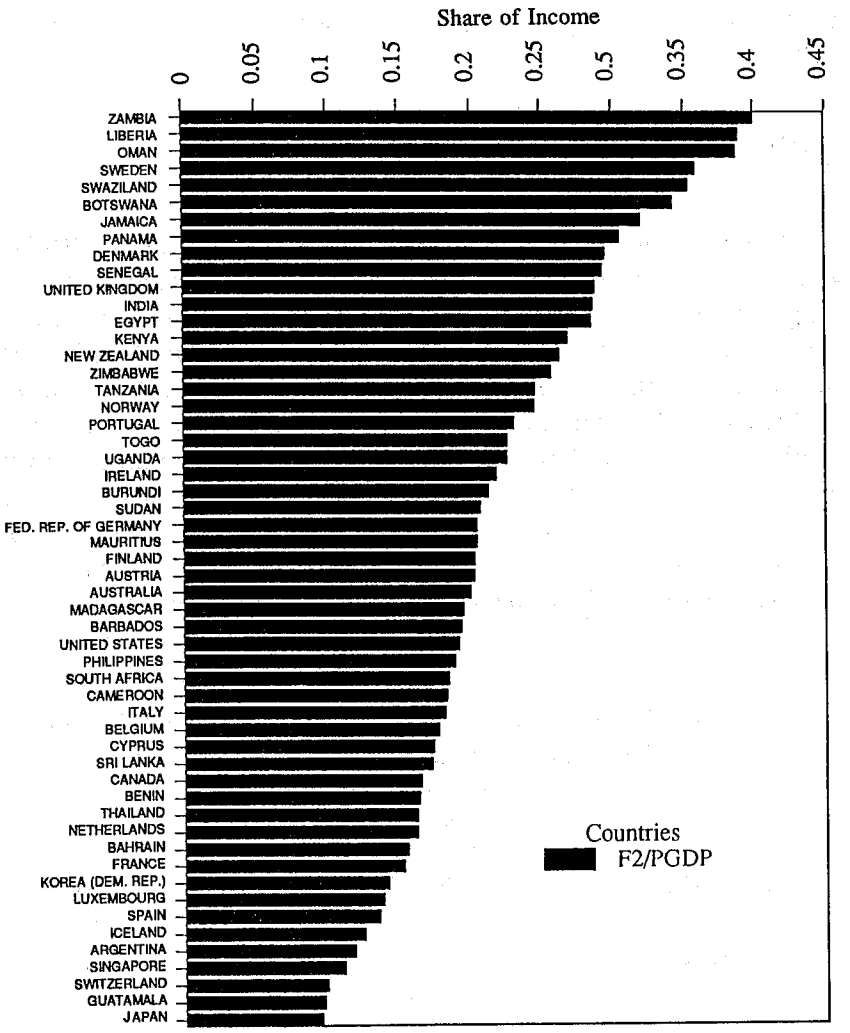
Dependent variable is DIF
(34 observations)

VARIABLE	COEFFICIENT	T-STAT.,
C	-5.38	-1.34
EMPL	-1.07	-2.32
(G/Y)	0.24	2.04

R-squared 0.17, Mean of dependent var, -1.93
Adjusted R-squared 0.11,
S.E. of regression 6.91

Sources: See Table 2 and Table A.

Figure 4. Impediments to Freedom: Index F2



Some Reflections

Although the indexes above are imperfect instruments, it seems to me that this technique for constructing a cardinal measure of freedom's loss has potential. A more useful approach would be to identify all the emmigrants from a country and evaluate their destinations in a simultaneous matrix. With some recognition of the barriers to emmigration and immigration, the evaluation placed by movers on the non-monetary economic characteristics of freedom may be identifiable. This is not the only way to measure the implicit characteristics of economic freedom, but it is one way.

A second extension is to identify bureaucrats engaged in the act of regulation and try to measure the losses they cause within one or another country in specific well defined situations. This could serve to sharpen the cost estimates directly.

A third problem is to tackle the losses in freedom imposed by particular regimes that effectively stymie certain kinds of economic transactions. Communist regimes need to be assessed differently than Western regimes—at least at this point. Likewise dictatorships may also need a different set of variables.

Finally, the estimates in Table 1 may be too generous. We undervalue the costs of freedom of government. Both revenue and expenditure distort. If resources are the vector, **R**, to which factor rewards, **w**, pertain, and outputs are denoted by the vector, **Y**, to which prices, **p**, are relevant, then it is not double counting to measure the losses in freedom as the sum of both sides of the equation: $(w'-w)R(w')=(p'-p)Y(p')$ where the " ′ " indicates a distortion from the free market price.

Appendix

Table A. Rates of Immigration into Canada, 1984-87

Dependent Variable is IMM

(35 observations)

1. VARIABLE	COEFFICIENT	T-STAT.
C	0.34	0.85
(G/Y)	-0.02	-1.52
EMPL	0.10	2.29

R-squared 0.14, Mean of dependent var 0.24
Adjusted R-squared 0.089
S.E. of regression 0.68

2. VARIABLE	COEFFICIENT	T-STAT.
C	1.30	1.05
(G/Y)	-0.01	-0.79
EMPL	0.12	2.25
LPGDP	-0.12	-0.73
EM1	-0.45	-1.50

R-squared 0.22, Mean of dependent var 0.24
Adjusted R-squared 0.11,
S.E. of regression 0.68

3. VARIABLE	COEFFICIENT	T-STAT.
C	3.21	1.84
(G/Y)	-0.02	-1.29
EMPL	0.10	1.94
LPGDP	-0.26	-1.41
EM1	-0.50	-1.70
POLIT	-0.58	-1.52

R-squared 0.27, Mean of dependent var 0.23
Adjusted R-squared 0.15
S.E. of regression 0.67, Sum of squared resid, 12.85

Sources: IMM, Table 2.39 (Statistics Canada); G, and raw data for EM1 (Spindler and Miyake, HF4 and HF6); EMPL (Heller and Tait, Table 21); G',(Wright, various countries); POLIT, (Gastil and Wright); PGDP, and population (AID, Table I).

Notes

[1] Finding a definition with which we may all agree is not an easy matter in any discipline. Bertrand Russell (1956) points out that "The question 'What is a number?' is one which has been often asked, but has only been correctly answered in our own time." In Easton (previous chapter, this volume) I identify what I take to be some of the limitations of this definition of economic freedom.

[2] We are characterizing one dimension of choice, economic freedom. We may choose to impose a tax or other distortion, but this tradeoff among economic freedom and other "goods" is a separate issue.

[3] Clearly someone with a philosophy that there is something intrinsically good about a government allocating resources rather than the individual allocating resources will be dissatisfied by my characterization of economic freedom.

[4] Here is where a (constructive) definition of freedom as an argument of the utility function becomes most attractive. There would be no paradox in saying that the commonly calculated "optimal" tariff raises income and yet reduces utility. In the traditional calculation only income matters for reaching the "optimum." Once "F" is in the utility function directly, it is part of full income and consequently a full partner in the optimization calculus.

[5] In a different context Harberger (1964) has referred to "the economics of the nth best." As a practical matter, rather than search for some kind of global optimum, we are constrained to consider the effects of relatively small changes in various impediments.

[6] There are a number of theoretical reasons why this definition of changes in economic welfare is less than fully satisfactory (Silverberg, 1978) although for our purposes, the approach is adequate.

[7] These are explored in Easton (previous chapter, this volume).

[8] This is true if the supply schedule is horizontal. If it has a non-zero slope then in the second market there is going to be an indirect rent reallocation in addition to the direct effect captured in the higher tax.

[9] Although tariffs and quotas have equivalence as far as rent transfer is concerned (although different people may receive the rent), their properties differ in other contexts, e.g. stability of equilibrium is affected by the choice of one or the other. Other measures such as content requirements,

"health" restrictions and the like are difficult to assess, but ultimately can be converted into price increases.

[10] As a matter of practice, government expenditures are probably a better measure than revenue since they include implicit taxes are well as currently identified taxes. One might also choose to double the tax burden as whatever is received distorts one margin, and then does so again as it is spent. We are ignoring the "triangle" losses by simply using spending, too.

[11] I have not chosen to develop various "ordinal" measures of economic freedom. In addition to having difficulty deciding what numerical values to place on particular characteristics, I have been unable to decide on a metric with which to aggregate the various categories. This is not the same thing as saying that the ordinal measures devised are not useful. Those by Spindler and Still (1988), and Spindler and Miayake (1990), for example, are both interesting and useful as they call attention to many features in various economies that are distorted.

[12] In addition, of course, the theory itself evolved.

[13] This ignores the issues raised in Easton (previous chapter, this volume) about the indirect losses in economic freedom associated with traded goods.

[14] I have had to ignore (what were!) the Communist countries because information on "budgets" is so very different from that reported in the West.

[15] A more sophisticated measure would identify direct revenue per employee and develop a sense of the number of "obstructive" bureaucrats.

[16] Determinants of immigration are notoriously cranky with simple measures like per capita GDP in one country relative to another generating "wrong signs" in the regression and the like. The results of the regressions should be judged in this context.

[17] The ratio (G/Y) is included to control for the revenue function of some government employees. This given the amount of revenue raised, the measure EMPL is linked to immigration.

[18] More formally, immigration will take place only if there is some utility gain to emmigration (to the U.S.). If the change in immigration is zero, then the gain in utility is zero as well. Thus set dI=0 so that if utility (associated with the act of immigration) is held constant, $(\delta U/\delta E)/(\delta U/\delta Y) \mid U = (\alpha_2/\alpha_3)$ which is the relative price of government employees., i.e., it is the tradeoff in terms of real income of those who are emmigrating (to the U.S. or Canada.)

[19] The rate of immigration (per thousand) to the U.S. from each country is the seven year total from 1981-87 divided by the 1986 population.

[20] Of course these are estimated as a cross-section and as a result speak to extant levels of spending and employment, not to changes in a particular country. A more careful look at the time series would be appropriate.

[21] This latter measure is derived from Spindler and Miyake (1990) where those with any restriction, their values 2-5 received a score of 1, and unimpeded emmigration received a 0.

[22] It may be that they are more effective in predicting the total immigration from their respective countries, but this hypothesis I did not test.

[23] That is, $dI=\alpha_2 dEMPL+\alpha_3(dY/Y)$ and for $dI=0$, $(\alpha_2/\alpha_3).Y.\ dEMPL=dY$

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Discussion

Milton Friedman wanted clarification of Table 1. Easton explained that column 1, Index F1, was separate from the total dollar index of Index F2, column 2, which was in turn composed of the two subindexes (in the next two columns). The per capita measures which were suggested (as an alternative to the gross dollar measures) at the previous conference were the final column of figures and provided the ordering for the countries along the right-hand side. Friedman felt that we should look at the components and see which performed better relative to peoples' judgment rather than rely exclusively on the aggregate index. Easton agreed that some measure of the usefulness of the measure is necessary, but none was developed in this paper.

Zane Spindler made two points about the assumption that government employees perform in the same obstructive ways. He suggested that the reason that India does not rank the way one would think is because an Indian government employee imposes a restriction in a very different way than a government employee in the U.S. Often the Indian government employee will sell the restriction. Second, with respect to immigration, a country may restrict immigration or emigration as a way of capturing the market for its regulation. Thus regulation would be correlated with immigration or emigration.

Juan Bendfeldt wondered whether there was a problem with the regression to the extent that there may be a correlation between government expenditures and government employees per capita. What does the gov-

ernment do with tax revenue? They hire employees. Easton responded that he had run the estimation as a two-stage least squares and although the significance level dropped, there was little change in the coefficients from such a correction. Zane Spindler pointed out that from his tables, although there is such a correlation, it is far from perfect suggesting that some governments are more effective in there use of employees.

Juan Bendfeldt felt that the use of emigration was a useful way of capturing the loss of freedom but that illegal immigration makes these data most unreliable. For example, outside of Guatemala city with 2 million people, the next four cities of Central America with the greatest population are in the United States! They send money back, and so we can see roughly how many people there are abroad. Further, government employment is difficult to measure. There are non-government institutions that function only for the government, and contracting-out is another way to evade responsibility in the official budget but still obtain additional services. Easton did not have any specific information on either of these issues other than the data sources referred to in the paper. Easton remarked that there were no migration data comparable to the International Monetary Fund's, Direction of Trade.

Alan Stockman wondered how U.S. immigration quotas from different countries, would affect the measures Easton used. Second, since government spending is already in the regression equation, is it necessary to aggregate the measures in F2? Finally, thinking of the measures of F2(G) and F2(E) as related to the "bundling issue" in the Jones/Stockman paper (this volume), is this classification an "E" component or a "G" component: a theoretical categorization or one of convenience, and might they not serve to offset or ameliorate one another? Easton argued that his measures were for conceptual reasons as government expenditures crudely capture tax revenue reallocation issues, while the number of government employees were meant to correlate with the degree of regulatory interference with the economy. Perhaps they offset one another to some extent, he maintained, but then the regression is simply picking-up a net effect. As far as the effect of specific U.S. quotas, even though the U.S. had a different system than Canada during this period (Canada used a point count over certain specific characteristics), the similarity of the results for the two countries suggested that it was a useful indicator and gave some confidence in the results.

James Ahiakpor wondered if using both the wage bill and national income in the weights of equation 2 reflected double counting. Easton argued that you need to double count since each is a separate source of distortion. What the double counting in the weights does (in equation 2) is to allow the aggregation of both sources of the distortions. The weights themselves sum to unity. This is not really double counting, but it is a way of assuring that many layers of distortion can be analyzed in a consistent fashion.

Milton Friedman commented that the regressions (1 and 2) show that the higher the percent of income spent by government, the lower the level of emigration. This may reflect the inadequacy of measured income. It is disturbing from the point of view of relying on the ratio of government spending to income. Juan Bendfeldt pointed out that the measure of government's take may be nonlinear. A 13% take from a developing country may be more important than a taking of 40% in a developed country. He found in Guatemala that every time revenue went above 7.7%, the government ran into trouble with decreased national growth. Perhaps there is a "neutral" point of smallest damage, he suggested. Alan Stockman pointed out that the (negative) correlation between the government share of income and emigration means that government spending provides benefits as well as tax losses. The loss of economic freedom should be "added" to welfare. For the measure of economic freedom, however, they should not be netted out. Easton agreed saying the sign of the relationship does not matter since (we agree) that government spending reduces economic freedom which is what it is being calculated. What the regression serves to do is to price government employees. Where this would lead to trouble is if government employees were seen as handing out goodies and thus were valued not for their role as obstructing but for their role in providing benefits. Recall Table 3 takes the relative amounts of immigration between Canada and the U.S. Milton Friedman agreed that high government spending brings benefits as well as costs, but argued that it may also reflect the inability of governments to spend in low income countries in the same way they can in high income countries.

James Ahiakpor was unclear why the optimum tariff didn't lead to a proper measure of welfare. Easton responded that it would if we had the appropriate valuation of economic freedom—that is the tariff maximized a full, freedom inclusive measure of welfare, but then it would balance out

the gain in income with that of the loss of economic freedom imposed by the tax.

Alan Stockman wondered if we can get black market data on the right way to emigrate. In Hong Kong they sell a magazine called "Emigrate." Juan Bendfeldt answered that there are such data. In Guatamala there are tours advertized in which they guarantee that they will get you into the Unites States. With the new immigration laws, the cost went up to $7,000. Immigrants expect to repay it within two years. Many Chinese have paid $15,000 to get a Guatemalan passport. The data are available strictly from the newspaper. Alan Stockman suggested that The Liberty Fund could fund a project to gather these kinds of data.

Rating Economic Freedom: Capital Market Controls and Money

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University of Toronto

Introduction

WHEN I WAS ASKED BY the Fraser Institute to examine the degree of economic freedom in domestic capital markets I thought this was a very interesting and feasible research project. I quickly agreed to undertake this research. I made my decision without having attended or read the output from the first two conferences on economic freedom. I have since corrected that deficiency and have given considerable thought to the question. I am now much more humble about the nature of progress that can be made on this research topic.

Before proceeding to analyze economic freedom in domestic financial markets there are a number of important issues to discuss. These issues have been addressed in the first two conferences, but there was no clear consensus on a number of these issues. A resolution of these issues is

absolutely vital before any empirical examination can take place. I will try to avoid repetition of the earlier discussion but I feel it is imperative to clarify these issues and state my position on these matters.

Is Economic Freedom a Means or an End?

In the second conference Milton Friedman (my most respected teacher) stated that for him economic freedom (as well as political freedom) is an end by itself. There is a problem in making economic freedom one of the arguments in an objective function. By doing so one arbitrarily decides the issue of whether economic freedom is a good thing. For a number of us, this is an inherently obvious point. However there will be those who do not hold this view. They may have other objective functions. They may believe that income equality or income security should be ends and hence should be arguments in an objective function. Different individuals may posit different objective functions. This being the case it is near impossible to conduct a rational debate among individuals with different points of view. Each individual will posit their own objective function and there will be no way to choose among competing functions. Hence there would be no objective way to decide on various public policies.

This issue is very much like the issue of the role of tastes and preferences in explaining economic behaviour. A number of economic facts can be explained by adoption of a particular utility function. In addition, changes in the data can almost always be explained by resorting to changes in the utility function (i.e. changes in tastes and preferences). My methodological bias is to try to explain as much as possible without resorting to specific utility functions. Similarly, I propose to start with a very general objective function. In this objective function economic freedom will not appear (it will be a means not an end).

Consider a general individual utility function (for which one can get almost universal support)

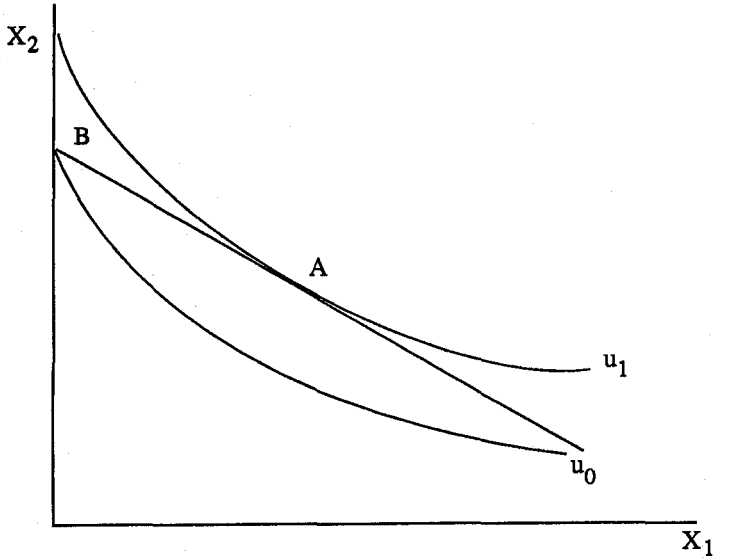
$$U_i = f(X) \tag{1}$$

where U_i is the utility of the ith individual and X is a vector of goods and services (including leisure).

All economists, whether free marketers or not should have no objections to the utility function in (1). In this utility function, economic freedom does not appear as an argument. An increase in economic freedom (holding X constant) does not lead to an increase in utility.

Although economic freedom does not appear as an argument in (1); nevertheless, traditional economic theory would yield an important utility enhancing role to economic freedom.

Figure 1. Economic Freedom and Utility



Consider the case where an individual consumes 2 goods, X_1 and X_2, has a fixed income, and faces fixed prices. In a world with complete economic freedom, equilibrium A in Figure 1 will represent the point of maximum utility for this particular individual. Now suppose the state imposes a restriction on the operation of free markets; the state forbids the production or sale of X_1. The constrained equilibrium in this case is B. Clearly at B the individual is at a lower level of utility than A. Restrictions on the freedom to freely choose those commodities which maximize utility will result in a lowering of utility. In this example, less economic freedom always leads to a loss of utility. Economic freedom is a means of allowing individuals to reach maximum satisfaction. It should be noted that similar examples could be constructed on the production side of the economy.

This proposition concerning free markets is an example of what is perhaps the most famous and (perhaps most important) proposition in all of economics and that is the proposition of gains from trade. Free exchange maximizes the gains from trade. Any restriction on free exchange will eliminate profitable opportunities of gains from trade and hence will reduce the overall level of welfare.

The methodology adopted in this paper will be to assume a generalized utility function where economic freedom is not an end. We will then examine economic theory to see how economic freedom affects the operation of the economy. A complete research strategy should test these propositions concerning economic freedom. (These tests are not carried out in this paper.)

Definition of Economic Freedom

If there was one question that was not resolved in either of the first two conferences it was the definition of economic freedom. Everyone agreed that economic freedom was multi-dimensional and a nebulous concept at best. As a student of Milton Friedman I will adopt his methodology that "you cannot define a measure without knowing what the purpose of the measure is" (p. 15, draft of second conference). For one purpose you may adopt one definition and for another purpose you may adopt another definition.

One should note that the problem of finding an empirical counterpart to a theoretical concept is almost universal in economics. Consider an example from monetary economics. The concept of money is crucial in monetary economics. However there has been considerable debate over the exact definition of money. There is a large continuum of financial assets. Where you draw the line and call one set money and the other non-money financial assets is a very difficult problem. Economic theory offers little guidance. What one has to ask is for what purpose one is defining money. For this, economic theory is a necessity. If one has an economic theory that says that the money supply is a prime determinant of the price level, then one can adopt a definition of the money supply which best predicts the price level.[1]

It is this approach that I propose to adopt with respect to the definition of economic freedom. In the previous section we have argued that economic freedom leads to increased levels of utility. One can define economic freedom as that index which best predicts levels of utility. However such a definition is inoperable because utility is not measurable. In addition we desire a definition of economic freedom which is applicable to a country as a whole and not to each individual. With a lot of hand-waving we can use some definition of income as a proxy for utility. To arrive at an aggregate measure, we would add up individual income and obtain national income.

Now we would define economic freedom as that index which best predicts levels of national income.[2] In this sense, the index of economic freedom would be like the index of leading economic indicators. Both are multidimensional and both are meant to predict national income. It is important to note that national income by itself cannot be used as a measure of economic freedom. Economic freedom is only one of a number of factors determining national income. One needs a complete theory of income and economic growth in order to define economic freedom. It should be noted that economists have no good answer to the fundamental question of why some countries are rich and some are poor and why some countries grow at a fast pace and others grow slowly. For simplicity assume a neoclassical production function

$$Y = f(K,L,A,EF) \tag{2}$$

where Y is national income, K is capital, L is labour, A is land including national resources, and EF is an index of economic freedom.

Clearly there can be two countries with the same amount of economic freedom but different levels of national income because there are different levels of the other factors of production. Similarly there can be two countries with the same factors of production but different levels of income. One country may have free markets and the other country may have restrictions which prevent factors moving to where they can contribute most to national income.

In summary, I propose to define economic freedom as that index which adds the greatest explaining power (i.e. has the largest partial correlation coefficient or equivalently the largest "t" value) to the national income equation, given all the other factors determining national income.

One data set would be used to define economic freedom. Clearly one would need other data set to test the propositions that economic freedom is an important determinant of national income.

There are important policy reasons why the proposition of the influence of economic freedom on national well-being should be tested. If restrictions on economic freedom can be shown to lower income levels, a strong case can be made to eliminate these restrictions. Hence one wants to define economic freedom in order to better understand its role in influencing national well-being. Once it can be demonstrated that economic freedom is welfare enhancing, there is a stronger possibility of convincing governments to allow greater degrees of economic freedom.

Difficulty in Applying Any Definition of Economic Freedom

From a theoretical point of view the methodology outlined in the previous section seems simple enough. However, this methodology is very difficult to implement in the real world. The example illustrated in Figure 1 is a clear example of a government restriction that reduces economic well-being. Unfortunately there are a large number of government actions which are not as clear-cut. The government undertakes a large number of actions. The question is which of these actions are restrictions on economic freedom and as a consequence welfare reducing. In an initial examination of government actions it is not obvious which actions should be placed in the freedom reduction category. (In fact, I will argue that in the absence of a well defined economic theory, it is impossible to classify government actions.) Consider the following examples from financial markets.

(a) A number of researchers (see White (1984)) have claimed that the period 1795-1845 in Scottish banking could be characterized as a free banking period. This period would be characterized as one with no restrictions on banking. This view has been challenged by Carr and Mathewson (1988).[3] We argued that three Scottish banks enjoyed the privileges of limited liability granted by the Scottish Parliament. All other banks had to accept unlimited liability. Entry was free but not on the same terms as the three limited liability banks. Is this restriction of unlimited liability a relevant restriction on economic freedom? One cannot answer this ques-

tion in the absence of some economic theory explaining the importance of the liability rule. The accepted wisdom of the time was that the unlimited liability restriction for new entrants was in the public interest. It protected depositors and protected the integrity of the banking system. Mathewson and I argued that this restriction was in the private interest of the three limited liability banks. Competition was allowed but the playing field was not level. I would argue that this restriction reduced economic freedom and lowered national income. The restriction did raise the income of the owners of the three limited liability banks (assuming that the entire income was not dissipated in rent seeking activities). One cannot characterize government actions unless one understands the effects of these actions and the rationale for these actions. As the above example illustrates, this is not an easy matter to do.

(b) In 1934 in the United States and in 1967 in Canada, deposit insurance was enacted. Did this action reduce economic freedom? Friedman and Schwartz (1963) argued that deposit insurance was necessary to eliminate the contagion effect inherent in bank runs. Carr and Mathewson (1989) present a private interest explanation of deposit insurance. We argue that this scheme subsidized small banks (typically new entrants) at the expense of large incumbent banks. If Friedman and Schwartz are correct deposit insurance would increase national income. According to this interpretation deposit insurance would be desired by all banks as it would improve depositor confidence in the banking system. This view would argue for government rules mandating deposit insurance. These rules could not be interpreted as reducing freedom as they would be desired by all economic agents. On the other hand I would argue that such schemes would reduce national income. Large banks would oppose such rules and small banks would desire them. Clearly a resolution of this issue is needed for a correct definition of economic freedom. Clearly such a resolution is not a simple matter.

(c) Most countries impose restrictions on both the asset and liability side of a number of financial intermediaries. In Canada, the asset portfolio of insurance companies is restricted. Are these restrictions reductions in freedom? Or are these restrictions the result of the most efficient way for insurance companies to post bonds. The liabilities of insurance companies are very long-term. Insurance companies can sell insurance policies to policyholders promising them a particular investment policy. After funds

are collected insurance companies could change the investment policy to the detriment of policyholders. Both parties know about the possibility of such opportunistic behaviour. The problem for the insurance company is to find the most efficient way to post bonds which guarantee no change in the riskiness of its portfolio after an insurance policy is purchased. Regulation may be the optimal form of bonding. If such is the case all economic agents desire such regulation and it cannot be viewed as freedom reducing. In addition such restrictions, according to this theory, would not reduce national income.

These are but three of many examples of the difficulty of defining which governmental actions reduce economic freedom. In addition to these difficulties, there are the difficulties of knowing which restrictions on economic freedom are binding? Which restrictions do economic agents easily get around? Faced with these difficulties researchers may throw up their hands and argue that it is impossible to define economic freedom. However I have taken to heart one of the prime messages of the first conference that 'anything worth doing is worth doing imperfectly.' It is hoped through conferences like these one can slowly converge on the optimal definition of economic freedom.

The above discussion indicates that a *detailed* knowledge of *each* country examined is needed to even begin to define economic freedom. At the outset I must admit that I do not possess this knowledge. I know most about financial markets in Canada. Next I know about the U.S. situation. However the farther geographically I get from Canada the less detailed knowledge I possess. Hopefully the conference will correct some of these defects. For future research, given the knowledge required for this research, I would suggest collaborative efforts by scholars chosen from the various countries to be examined.

Rating Economic Freedom in the Money and Capital Market Sectors

Financial Deregulation in the Seventies and Eighties

The purpose of this paper is to rate the level of economic freedom that currently exists in the financial sectors of a number of countries. The countries I propose to examine are Canada, the United States, the United Kingdom, Japan, West Germany and France. If this exercise were done twenty years ago for these same six countries I am convinced that the level of economic freedom in this sector of the economy for all six countries would be substantially less than it is today. In the '70s and '80s financial deregulation has played a significant role in raising the level of economic freedom. Before I embark on the empirical task of rating economic freedom I would like to address the question of why there has been an almost universal movement to freer financial markets.

One hypothesis would be that governments value economic freedom higher today than they did twenty years ago. Unfortunately I do not think there is any evidence to support this hypothesis. The hypothesis I propose to explain worldwide financial deregulation is consistent with the private interest theory of regulation I described in the previous section. I believe financial regulation was adopted, to a large extent, to protect local monopolies. This regulation was in the private interest of the owners of the local monopolies (or the cartels). This regulation was not in the general public interest. In the '70s and '80s financial innovation led to the development of close substitutes for these monopoly services.[4] With the elimination of the monopoly, it was no longer in the interest of the former monopolists to maintain the economic restrictions. As a consequence, these economic restrictions were abandoned. Consider the following three examples.

(a) Since 1933 commercial banks in the United States had been prohibited from paying interest on demand deposits. In addition the Fed through Regulation Q limited the interest rate that commercial banks could pay on time deposits. One interpretation of these interest rate restrictions is that they were put in place to eliminate commercial bank competition for deposit funds. These interest rate restrictions in essence enforced a commercial bank cartel. In the late '60s and '70s inflation in the United States

became both high and volatile. This led to high and volatile interest rates which increased the cost to depositors of keeping funds in commercial banks. High and volatile interest rates led to financial innovation. (As the returns to innovation increase, one would expect an increase in innovation). Brokers developed money market mutual funds which were essentially a way to pay interest on demand deposit. With the development of this substitute for a bank deposit, it was no longer in the interest of banks to have the government maintain interest rate restrictions. In 1980 the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) was passed and in 1982 the Garn-St. Germain Act was passed which had the effect (among other things) of removing interest rate controls on money.[5] It should be noted that this example is consistent with the private interest theory of regulation. It is difficult to argue that these interest rate restrictions were in the public interest from 1930 to 1980 (presumably to prevent destructive competition in the banking system leading to a complete collapse of the system) and they were no longer in the public interest in the 1980s (when bank failures continued at a significant rate).

(b) Regulations in the province of Ontario essentially prevented foreign securities firms from entering the Canadian market. Although some people argued that it was in the public interest to have the securities industry controlled by Canadians clearly such protection was in the private interest of Canadian securities firms. In July 1987 the Canadian securities market experienced what became known as the Little Bang.[6] One of the provisions of this deregulation was to allow foreign securities firms into the Canadian market. What is the explanation for this deregulation? I don't believe that this deregulation was due to the Canadian authorities finally seeing the light. This deregulation was forced on the Canadian authorities. Canadian firms in the 1980s were finding that they had alternatives to raising funds other than the use of the Canadian capital market. With deregulation in other countries, Canadian firms could more easily raise funds on world capital markets and bypass the local securities firms. The Canadian firms needed international linkages in order to compete. As such Canadian firms now found it in their interest to have the government allow foreign firms into the Canadian capital market.[7] Again this example supports the private interest theory of regulation.

(c) On October 27, 1986 substantial deregulation occurred for financial institutions operating in the City of London (this deregulation was known

as the Big Bang). On this date the practice of fixed minimum commissions for trading securities on the London stock exchange was eliminated. This change was forced on the LSE by the British government. Why did the British government bring about such a change. Again I would argue that fixed minimum commissions prevented broker competition and hence was in the private interest of stock brokers. However since the mid-1970s broker commissions were being deregulated on world stock exchanges. Investors could trade stock on a number of world exchanges. Deregulation in New York and other markets forced deregulation in London.[8] Again this example supports the private interest theory of regulation.[9]

Empirical Rating of Economic Freedom in Money and Capital Markets

As instructed I will assign for each category in each country an integer on a scale of zero to ten. Ten will represent the highest freedom rating and zero will represent the lowest. It will be obvious that such rating schemes are highly judgemental. However their main purpose will be in comparing one country relative to another. Table 2 presents the ratings of each category for each country.

(a) Regulation of the Central Bank

(i) Is the power of the central bank to print money restricted?

The question of the existence of a central bank should be dealt with before examining the powers of the central bank. A standard proposition in monetary theory has been the necessity of government (either acting on its own or through a central bank) to control the money supply. Almost all monetary authorities today monopolize the issue of banknotes. The economic rationalization for this monopoly has been that the issue of banknotes is a natural monopoly. Banknote issue is considered a public good. Recently this view has been attacked primarily by proponents of free banking.[10] Free banking advocates recommend abolishing central banks and allowing for competition among private producers in the issuing of currency.

I could spend considerable time discussing this issue but unfortunately for the empirical purposes at hand the issue is moot. All the countries I examine in this study have active central banks and there is little likelihood

that this situation will change. If the main purpose of an index of economic freedom is comparative (either comparing different countries at one point in time or one country at different points in time) then for present purposes one does not have to resolve the debate over competitive note issue. Again this is another example of an issue which is still hotly debated in economics. It is not an easy matter to decide whether restrictions on private note issue are in fact restrictions on economic freedom which led to a reduction in national income.

The following are the salient points on central banks in the six countries examined.[11]

Canada

The Bank of Canada is wholly owned by the government of Canada. In fact the Minister of Finance holds all Bank of Canada shares. Technically the Bank is responsible to its sole shareholder, the Minister of Finance. The Bank of Canada has a statutory duty to maintain the domestic value of the currency, to control the external value of the currency and to maintain full employment. The government has the power to issue directives to the Bank. In practice, the Bank cannot follow a monetary policy different from that desired by the government and no directives have ever been issued. The Governor of the Bank of Canada is appointed for a 7 year term and the Bank is accountable to Parliament.

United States

The Federal Reserve System is a federal government agency consisting of 12 banks whose stock is owned by commercial bank members. The Federal Reserve has a statutory duty to supervise the banking system. The Federal Reserve is responsible to Congress; it must report twice a year on its policies. This report is to Congress and not to the President or Executive. The Federal Reserve is formally independent of government; however, as a practical matter the Fed is in continuous discussions with the Executive branch. The Chairman of the Federal Reserve System is designated by the President for a four year term (which is renewable).

United Kingdom

Since 1946 the Bank of England has been 100% owned by the government. The Bank has a statutory duty to supervise the banking system. The Bank of England is not independent of the government. The Bank is subject to the directions of Treasury, although in practice decisions over monetary policy are reached jointly. On a few rare occasions disagreements between the Bank and Treasury have been publicized. The Bank of England is not accountable to Parliament although as a matter of courtesy files its annual report with Parliament. The Governor is appointed by the government for five years (term is renewable).

Japan

The Bank of Japan is 55% government owned and 45% privately owned. The Bank has a statutory duty to maintain the domestic value of the currency and to control credit expansion. Actions such as changes in banks' reserve ratios require the approval of the Minister of Finance. Open market operations and discount rate changes do not require government approval. The Bank is accountable to the Japanese Diet. The Governor is appointed by cabinet for a 5-year term (renewable).

West Germany

The Bundesbank is 100% owned by the government. It has statutory duties to maintain the domestic value of the currency, to supervise the banking system and to facilitate the clearing of cheques. The government has separate powers to fix exchange rates and regulate the inflow of foreign capital. The Bundesbank is independent of parliament and is independent of the federal government. The federal government may ask for decisions to be deferred to a maximum of two weeks. The Bundesbank has an obligation to support the economic policy of the government but the important point to note is that this obligation is limited by the statutory duty of the Bundesbank to safeguard the currency. Conflicts between the Bank and the government have occurred but have not been of great significance. The Governor is appointed by the President on the nomination of the federal government for an 8 year term.

France

The Bank of France is wholly owned by the government. The Bank has a statutory duty to control credit expansion and to supervise the banking system. The Ministry of Economics fully controls Bank policy. This control extends even to the day-to-day operation. There is no accountability of the Bank to the French Parliament. The Governor of the Bank is appointed by the President on the advice of cabinet for an indefinite term. The President can dismiss the Governor at any time.

As the above descriptions of the central banks show, no central bank is restricted by some external rule in its control of the money supply. A Gold Standard rule would greatly reduce the discretionary powers of the central bank. A Gold Standard will not guarantee short-run price level stability but such a standard would guarantee long-run price level stability. However, it is unlikely that any country will relinquish control over its money supply and adopt some sort of commodity standard. A monetary growth rule as proposed by Milton Friedman would also restrict the arbitrary power of the central bank. Again none of the six central banks have such restrictions.

Statutory restrictions seem the greatest for the Bundesbank. Although the Bundesbank is required to support the economic policy of the government; this support is tempered by its obligation to safeguard the domestic value of its currency. Because of this obligation I will give the Bundesbank a rating of 6. The Federal Reserve is technically independent of the executive branch and I will give it a rating of 5. I give the central banks of Canada, U.K. and Japan a somewhat lower rating of 4. My reasons are as follows. All three of these central banks are subject to significant control from the government of the day. In Canada and the U.K., the Bank is subject to government directives. In Japan the Minister of Finance has been noted for announcing by himself discount rate policy.

In addition these central banks all engage in "moral suasion" in their conduct of monetary policy. In Canada, the Bank of Canada has made requests of chartered banks for which they have no legal authority. In the past the Bank of Canada has requested that the chartered banks limit their loans to sales finance companies. Also the Bank of Canada asked the chartered banks to voluntarily agree to a "secondary reserve ratio" (this was before a change in the Bank Act which gave such a power to the Bank of Canada). The implied threat had been that through changes in reserve requirements (which the Bank has no power to make anymore) or open

market operations or some other Bank action that banks could be punished for non-compliance. This use of moral suasion is a fundamental violation to the rule of law. Fortunately for Canada, as the number of banks have increased, the use of moral suasion has diminished for obvious reasons.

In the U.K., the Bank of England works through conventions and understandings with the banks.[12] The actions of the Bank of England have been described as conducting business through informal and friendly conversations as if the Governor was a senior partner in the banking firm dealing with junior partners (the banks).

In Japan moral suasion is known as 'window guidance.' The Bank of Japan determines each bank's reserve requirements and informally negotiates each bank's quarterly lending ceiling. As such it is difficult to expect individual banks to resist a request from the Bank of Japan to refrain from selling U.S. dollars.[13] Again such actions are contrary to the basic principle of the rule of law.

The Bank of France is completely controlled by the government. There is no restraint on the government's ability to use the printing presses to finance government expenditures. As such I gave the Bank of France the lowest rating for economic freedom; a rating of 3.

(ii) Has the central bank succeeded in providing a stable monetary environment?

The major goal of any monetary system is to provide for a stable currency so that private contracts can be made with the minimum amount of uncertainty. In such an environment where the freedom to engage in exchanges of all kind is maximized, national income will be maximized. This question can clearly be evaluated more objectively than the previous question.

Table 1 presents the inflation rates for our six countries for the last five years. In terms of average inflation rates Japan and West Germany experienced the lowest inflation rates whereas the U.K. and France experienced the highest inflation rates. Inflation is a source of government revenue. The higher the inflation rate the higher is the tax on cash balances. In addition for tax systems which are not fully indexed, higher inflation rates in effect mean higher average income tax rates. (These increases in tax rates are particularly pernicious since they occur without any specific act of parliament or congress). Finally if inflation is unexpected, this unexpected inflation reduces the real cost of government debt (i.e. this unexpected inflation is in effect a partial repudiation of the debt).

Table 1. Inflation Rates 1984-1988*

	Canada	U.S.	U.K.	Japan	West Germany	France
1984	4.3	4.3	5.1	2.3	2.4	7.4
1985	4.0	3.6	6.1	2.0	2.2	5.8
1986	4.2	2.0	3.4	0.6	-0.2	2.5
1987	4.4	3.6	4.2	0.0	0.3	3.3
1988	4.0	4.0	4.9	0.7	1.2	2.7
Mean	4.2	3.5	4.7	1.1	1.2	4.3
Standard Deviation	0.3	0.8	1.0	1.0	1.3	4.7

*Inflation is measured by the Consumer Price Index. Data is taken from *International Financial Statistics* published by the International Monetary Fund.

Economists are concerned not only with average inflation but also the volatility of inflation. The more volatile inflation, the more unexpected inflation one will observe. The more volatile inflation the more difficult it is to negotiate long-term contracts. In the late '70s the high and volatile inflation rate made it very difficult (and costly) to issue long-term debt.

Hence both high and variable inflation rates are harmful to the economy and harmful to overall economic freedom. In giving rankings to the performance of various countries one should note that standards change over time. After the double digit inflation of the '70s, Canada's inflation rate of 4% is considered low by most economic observers. However when inflation reached 4% in the late 1960s this was deemed to be a national emergency and a Royal Commission was appointed to investigate the causes of the inflation problem.

Since Japan and West Germany have the lowest inflation rate and relatively low inflation volatility they receive a rating of 9. Canada has a slightly higher inflation rate than the U.S. but it has a more stable inflation rate. I awarded the U.S. and Canada a rating of 7. France has a slightly lower inflation rate than the U.K. but the volatility is much greater. I awarded France a rating of 5 and the U.K. a rating of 6.

(b) Regulation of the commercial banks

(i) Is there free entry into the commercial banking business?

This again is one of those questions for which there is no easy answer. Take the example of Canada. Up until the Bank Act of 1981 it was almost impossible for foreigners to set up a bank in Canada and it was extremely difficult for new domestic firms to enter the field. (A separate act of Parliament was required to set up a Bank.) Although new banks were rare, there were many new entrants into financial institutions which were providing services which were close substitutes to those provided by banks (e.g. trust companies, mortgage loan companies, savings and loans, credit unions, caisse populaires and suitcase banks).

The key question is how effective was the restriction on bank entry? Although non-bank financial intermediaries could enter, it is important to note that the banks had a monopoly on the clearing mechanism. Hence these substitute banks could compete effectively in the provision of time deposits but couldn't compete effectively in the demand deposit market. After 1981 in Canada, a separate act of Parliament was no longer needed to incorporate a bank, entry of foreign banks were permitted,[14] and the chartered banks' monopoly of the clearing system was eliminated. Currently, competition in the banking industry is very healthy in Canada. As such I give Canada an 8 in ease of entry.

In the U.S., banks can be incorporated nationally or at the state level. All national banks have to belong to the Federal Reserve system and state banks have the option of joining the Federal Reserve system. One advantage of belonging to the Fed is obtaining the cheque clearing services provided by the Fed. The large number of U.S. banks would be an indication that entry into the banking field in the U.S. is relatively easy. However the large number of U.S. banks is partially due to the restrictions on branching that exist in the U.S. In some cities (e.g. Chicago) banks are only allowed one branch. In some states banks can branch within the city but not outside the city. Branching across state lines is forbidden. There are those who contend that loopholes in the statutes (i.e. the use of bank holding companies) can be found that do in fact allow for more branching than would at first appear to be the case. However, it seems clear that the anti-branching provisions of the federal and state governments severely limit competition in the U.S. market. Because of these anti-competitive restrictions I would rate the U.S. banking system a 6 on freedom of entry.

In the U.K., London is a large international banking centre. Foreign entry is relatively easy although there are some restrictions (the U.K. has certain reciprocity requirements). In the U.K. the Bank of England has the authority to deny a banking licence. A rating of 8 is given to the U.K.

Japan has substantial barriers to foreign banks. There are large administrative barriers to foreign banks. In addition, domestic banks are granted more favourable capital-asset ratios. Because of these barriers Japan is given a 4.

West Germany has a large number of banks (in 1988 there existed 4,438 banks). There are 58 foreign bank branches. In West Germany, there are a number of conditions to be met in order to obtain a banking licence. Once these conditions are met, the banks have a right in law to be granted a licence. One possible measure of the increasing competition in the banking market is the falling interest rate margins for German banks.[15] A score of 8 is given to West Germany.

In France banking has a large degree of government involvement. Three of the four largest retail banks still belong to the state. Because of the large involvement of government run banks, a score of 2 was given on freedom of entry into the French banking market.

(ii) Are deposits insured by a government agency?

In the introduction I argued that deposit insurance is one of those issues where the effects on economic freedom are very contentious. The conventional wisdom is that government mandated deposit insurance is in the public interest protecting against bank runs. This argument depends critically on the belief that bank depositors face sufficiently high marginal costs of information that they are unable to distinguish between firm-specific shocks and industry wide shocks. I reject this argument. I argue that deposit insurance is in the private interest of smaller banks and is a restriction on economic freedom. (As such it is very much like the anti-branching provisions in the U.S.). Deposit insurance encourages more risk taking of the banks and results in more bankruptcies.[16]

Deposit insurance was first started in Canada in 1967. De jure, the current limit is $60,000 Canadian but de facto there seems to be no limit. In the U.S. deposit insurance was initiated in 1934 and the current limit is $100,000 U.S. Both systems are non-risk rated. A rating of 5 is given to both Canada and the U.S. In the United Kingdom government run deposit insurance only came into force in 1982.[17] The insurance covers 75% of the

first £20,000 of bank deposits.[18] The British system of co-insurance tends to minimize the moral hazard problem of the insurance scheme. Depositors still have an interest in monitoring the riskiness of the bank's portfolio. A rating of 6 is given to the U.K.

Japan has a government run system of deposit insurance that insured deposits in 1986 to a maximum of 3 million yen. This limit was expected to increase to 10 million yen. Japan gets a score of 5. West Germany has no compulsory deposit insurance scheme. Private banks set up their own Deposit Protection fund in 1976. Given the voluntary nature of the German scheme, a score of 8 is given.

No evidence of any deposit insurance scheme could be discovered for France. However, given the fact that three of the four largest banks are publicly owned the government in effect guarantees bank deposit. A score of 5 is awarded for France.

(iii) Are there reserve requirements on the banks?

There is an argument in monetary economics that fractional reserve banking is inherently unstable. One aspect of this argument is that because of fractional reserves, that in times of banking panics, even very solid and safe banks will experience runs. This argument depends for its validity on the same assumptions needed to favour government imposed deposit insurance. It requires an inability of depositors to distinguish between firm-secific and industry wide shocks. In such a world only a bank with a 100% reserve will be spared a run. If one believes in free banking then there is no need to have any imposed legal reserve requirement.[19] Banks will have their own optimal reserve ratio and depositors will know what reserves each bank maintains.

Hence this is another one of those contentious issues. One school of thought would argue for 100% reserves. Another would argue that any formal reserve requirement is an undue regulation on banks. Such reserve requirements act as a tax on banks (a tax that other financial institutions do not have to bear and hence impairs the competitiveness of the banks). In addition these legal reserves perform no economic function. These reserves cannot be called upon by the bank in times of financial crises.[20]

It should be noted that even among economists who favour 100% required reserves, there would be no agreement that a 30% reserve ratio is superior to a 20% reserve ratio because there would be no reason to believe that banks subject to a 30% ratio would have less risky portfolios than banks

subject to a 20% ratio. Clearly 100% is better than either 30% or 20% but it is not clear that 30% is superior to 20%.

No country in our sample has 100% reserve requirements. All these countries have a fractional reserve banking system. From 1960 to 1984 the average reserve requirement on bank deposits was 6% for Canada, 8% for the U.S., 7% for the U.K., 3% for Japan, 11% for West Germany and 4% for France.[21] There is too small a variation to award any difference in scores. All countries are awarded a 5.

(iv) Are there interest rate ceilings on what the banks can pay on deposits?

Usury laws are perhaps one of the earliest forms of restriction on economic freedom. Usury laws have been very common in the banking field. Currently there are no effective restrictions on what banks can pay on deposits in both Canada and the United States. In the U.S. interest is not allowed on demand deposits. However the use of NOW and Super NOW accounts effectively gets around this restriction. Also DIDMCA has gotten rid of the Regulation Q ceiling on time deposits. Due to this relatively free environment I will give both Canada and the U.S. a score of 9.

I could find no evidence of effective interest rate restrictions for the U.K. and West Germany. Both of these countries get a rating of 9.

In France there are no interest bearing current accounts (as is allowed for in most European countries). In addition, for term deposits below 100,000 francs the maximum rate of interest is 5.5%. Because of these restrictions on the ability of banks to freely raise deposit funds France gets a rating of 3.

In Japan interest rates on deposits with commercial and other banks are limited by ceilings under the Temporary Interest Rates Adjustment Law and guidelines set by the Bank of Japan. No interest has been allowed on current accounts since 1944. It is estimated that almost two thirds of Japanese savings deposits remain under interest rate constraints. The Ministry of Finance sets maximum interest rates for money market certificates $69,000 or lower. Overall, about one third of deposits are under interest rate controls. This represents a subsidy to Japanese banks. The total value of these subsidies to Japanese banks has been estimated at about 3.7 trillion yen or 1% of GNP.[22] Because of these substantial interest rate restrictions, Japan gets a rating of 3.

(v) Can banks enter the security business?

Banks, almost everywhere, have restrictions on the product lines they can offer.[23] One important restriction is on the ability of banks to enter the security business. Firms can borrow either from banks or from capital markets. Restrictions on the ability of banks to enter the security business greatly hamper the ability of banks to compete on the asset side of their balance sheet. I would interpret such restrictions as one impairing economic freedom and enacted primarily to protect the private interest of security dealers. However there is a public interest argument which is advanced to support this restriction. Suppose a bank owns stock of a certain corporation. This bank would have a conflict of interest if it decides to make a loan to this corporation. Because of this potential conflict the government enacts conflict of interest and self dealing provisions to protect bank depositors (and possibly certain classes of bank shareholders). Separation of banks and security dealers is one way to avoid conflict of interest.[24]

The important point to note is that conflicts of interest arise very frequently in economic exchange (this is essentially what economists call the principle-agent problem). Whenever a broker advises a client to buy or sell a stock the broker is in a potential conflict (because he earns commission on the transaction). Either through bond posting or reputational effect the conflict will be solved or in the absence of a solution, the acts of advice giving and stock trading will be separated. If conflicts are so severe, then the market will by itself separate out the activities which are in conflict. There is no need for artificial government separation of the activities.

In July 1987 the Little Bang in Canada resulted in brokers and banks no longer being kept apart. As a result of this deregulation, five of Canada's six largest banks rushed to buy brokerage and security firms. Because of this relative free environment, I will give a 9 to Canada.

The Glass-Steagall Act has kept banks and stockbrokers apart in the U.S. since 1933. Although the years have seen some erosion of Glass-Steagall, essentially U.S. banks have been unable to underwrite corporate securities as many European banks do. Through bank holding companies there has also been erosion of Glass-Steagall. The U.S. Congress is currently considering changes to Glass-Steagall.[25] In addition, at the beginning of this year the Fed decided to allow bank holding companies to underwrite corporate debt and to consider allowing them to underwrite corporate equities within a year. As of now there are still substantial restrictions on

the ability of banks to underwrite corporate securities. A rating of 4 is given to the U.S.

The Big Bang in the U.K. in October, 1986 opened up the possibility of full membership on the London Stock Exchange to domestic depository and other financial intermediaries. Prior to the Big Bang there was a traditional division in the U.K. between banks and brokers. Now all large British and foreign banks have entered the security business either through merger or starting up new firms. A score of 9 is given to the U.K.

Japanese law allows Japanese banks to own no more than 5% of a securities firm.[26] However there is a substanital loophole in the law. The law does not stop a bank's associates from having holdings in securities firms. In effect Japanese banks do own securities firms. Japanese banks are allowed to trade in everything but equities and they trade in these through the security companies they control. It should be noted that new products introduced by Japanese banks require approval by the Minister of Finance. Since it would appear that U.S. and Japanese restrictions are similar but the Japanese restrictions are not as effective. A rating of 6 is given to Japan.

In West Germany, the German universal banks act as brokers, there is no separate profession of stock broker. A score of 10 is given to West Germany.

Stockbroking firms in France had until 1988[27] a monopoly on securities trading. Last year the capital in France's 61 stockbrokers was opened up. Now banks, insurance companies and other financial institutions are allowed equity ownership in the 'agents de change,' the small number of companies which essentially run the Bourse.[28] Since last year, 30 of the 45 brokers operating in Paris had been bought and major French banks have been the largest investors. A score of 8 is given to France.

(c) Regulation of Capital Flow

(i) Are there exchange controls?

Canada has no exchange controls. A rating of 10 is given to Canada.

Although the U.S. has no exchange controls, there are certain restrictions for security reasons. Receipts of funds from Cuba, the People's Republic of Kampuchea, the Democratic People's Republic of Korea and the Socialist Republic of Vietnam are generally prohibited, in addition to certain types of payments from the Socialist People's Libyan Arab Jamahiriya. Also there are certain reporting requirements. Travellers enter-

ing or leaving the United States carrying more than $10,000 U.S. in cash or negotiable instruments must report this or face confiscation of the property. A rating of 9 is given to the United States.

All forms of exchange controls were abolished in the U.K. in 1979. Currently the U.K. has no exchange controls. A score of 10 is given. Similarly West Germany has no exchange controls and a score of 10 is given.

Exchange controls were substantially liberalized in Japan under the Foreign Exchange and Foreign Control Law. The limited exchange control system is operated primarily by the Ministry of Finance, the Ministry of International Trade and Industry and the Bank of Japan (acting as the agent for the government). Unrestricted non-resident accounts in yen may be opened by any non-resident with any authorized bank in Japan. Both residents and non-residents may acquire foreign currency deposits with authorized banks in Japan and the freely exportable limit is 5 million yen. Overseas deposits by resident individuals up to the equivalent of 10 million yen are subject to automatic approval by the Bank of Japan. Capital transactions are in principle free unless required to follow certain procedures. For example, foreign loans by banks are legally subject to prior notice with a waiting period but in a large number of cases they can be made upon notification. Because of these restrictions a rating of 7 is given to Japan.

Exchange controls exist in France and are administered by the Bank of France. In March, 1989, they were liberalized. Now holders of French francs are able to lend them freely abroad. All inward and outward payments must be made through approved banking intermediaries by bank transfer. However individuals may not hold a foreign bank account or have a foreign currency account in France. It is expected that these controls will disappear by the end of next year. France is awarded a score of 4.

(ii) Can foreigners invest freely in the domestic economy?

There are a number of restrictions on foreign investment into Canada. There are specific restrictions in the financial, broadcasting and uranium sectors. For example, foreign schedule B banks are limited to 16% of the market.[29] Inward direct investment is governed by the Investment Canada Act. Under the terms of this act, new foreign investments are in general subject to notification requirements but not to review.[30] Direct acquisition of businesses with assets over $5 million and indirect acquisitions for business exceeding $50 million are subject to review. Acquisitions below these limits and investments in new businesses in "culturally sensitive"

sectors may also be reviewed.[31] Investment subject to a review must be shown to yield net benefit to Canada. There is a large amount of subjectivity in this test. Under this rule the Canadian government can either encourage or discourage foreign investment. Although investment controls in Canada in the 80s are substantially more liberal than they were in the 70s, Canada still has in place extensive controls over foreign investment. A score of 4 is given to Canada.

In the U.S. investments in banks are subject to federal and state banking regulations. Ownership of U.S. agricultural land by foreigners (or by U.S. corporations which is more than 5% foreign owned) must be reported to the U.S. Department of Agriculture. Also certain states impose restrictions on purchase of land by foreign nationals. The Trade Bill of 1988 required review of certain foreign takeovers of American firms and allowed the President to oppose takeovers in industries which would endanger national security. National security is interpreted to include among others the oil, natural resources and defence sectors. By March of 1989 the Pentagon was reviewing 35 proposed takeovers and was under pressure to even be more active in this field. National security may become the catch-all category in the U.S. just as culturally sensitive industries play the same role in Canada. Nevertheless the U.S. has less stringent foreign investment controls than Canada. I rated the U.S. a score of 7.

There are no general restrictions on foreign ownership in the U.K. With the exception of South Africa, both direct and portfolio investments may be made by foreigners. However, the foreign takeovers of companies that by their size or nature constitute a vital part of British industry may be subject to considerations under the Fair Trading Act of 1973. Also the government has the power under the Industry Act of 1975 to prevent or undo undesirable takeovers of important manufacturing undertakings. In 1988 the British government imposed a 15% ceiling on non-British shareholdings in Rolls-Royce (the aero-engine maker privitized in 1987). As can be seen the British government has discretionary power to oppose any significant foreign takeover. The power exists, whether the current government chooses to use it or not. The U.K. gets a score of 5.

Table 2. Economic Freedom Rating

U.S.	U.K.	Japan	Germany	France	Canada	Weighting Factor
(a) Regulation of the Central Bank						
(i) Is the power of the central bank to print money restricted?						
5	4	4	6	3	4	5%
(ii) Has the central bank succeeded in providing a stable monetary environment?						
7	6	9	9	5	7	20%
(b) Regulation of Commercial Banks						
(i) Is there free entry into the commercial banking business?						
6	8	4	8	2	8	5%
(ii) Are deposits insured by a government agency?						
5	6	5	8	5	5	5%
(iii) Are there reserve requirements on the banks?						
5	5	5	5	5	5	5%
(iv) Are there interest rate ceilings on what the banks can pay on deposits?						
9	9	3	9	3	9	5%
(v) Can banks enter the security business?						
4	9	6	10	8	9	5%
(c) Regulation of Capital Flows						
(i) Are there exchange controls?						
9	10	7	10	4	10	12.5%
(ii) Can foreigners invest freely in the domestic economy?						
7	5	2	9	3	4	12.5%

Table 2. Economic Freedom Rating

U.S.	U.K.	Japan	Germany	France	Canada	Weighting Factor
(d) *Regulation of the Stock Market*						
(i) Are there fixed commissions on stock transactions?						
10	10	2	2	2	10	5%
(ii) Are there restrictions against insider trading?						
2	3	7	9	5	4	10%
(iii) Is there a securities regulator?						
3	4	2	8	5	5	10%
Overall Rating						
6.1	6.3	5.3	8.3	4.3	6.6	100%

In Japan the Foreign Exchange and Foreign Trade Control Law governs inward investment. The foreign investor must make a report to the Minister of Finance. The establishment of branch operations, acquisition of a major equity interest, the acquisition of shares in unlisted companies, the acquisition of 10% or more of shares in a listed company and any change in the business objectives of a company more than 33% foreign owned all come under direct investment regulations. These regulations empower requests or orders for suspension or modification of any aspect of the transaction that the minister deems to adversely affect Japanese national security, public order, public safety, the activity of Japanese enterprises in related lines of activity, the general performance of the economy or for the maintenance of mutual equality of treatment of direct investment with other countries. It will be noted that the Minister can disallow foreign investment because the foreign competition harms domestic firms. The provisions place very stringent controls on foreign investment.

In addition the government restricts foreign investment (and private investment) in water supplies, the postal service, telephone service, telex and telegram, tobacco, industrial alcohol and salt. Also certain corporations

are listed as "protected corporations" and have a limit on total foreign ownership in them. Japan gets a score of 2.

West Germany has very little in the way of controls on foreign investment. Nonresident direct investment, purchases of real estate in Germany for investment or personal use and purchases of German or foreign equities do not require approval. The only industry wholly closed to private enterprise is the post office. In all industries except banking and insurance 100% foreign ownership is permitted. West Germany gets a score of 9 on freedom of investment controls.

The French government requires prior approval for foreign direct investment in a large number of industries. Direct investments are generally considered those which acquire 20% or more of outstanding shares. The Treasury is entitled to issue a finding within 1 month to forbid the foreign investment should such investment be deemed to jeopardize public health, order, security or defence. In addition there are restrictions to foreign investment in a large number of industries. French governments have traditionally intervened to protect French industry from international competition.[32] The powers of the Ministers in France are not as all pervasive as those in Japan. France receives a rating of 3.

(d) Regulation of the Stock Market

(i) Are there fixed commissions on stock transactions?

Fixed commissions on stock exchanges is indicative of a broker's cartel in stock trading. In Canada stock commissions are subject to individual negotiations. The Securities Act Amendments of 1975 in the U.S. instructed the Securities and Exchange Commission to outlaw fixed brokerage rates on the NYSE. The Big Bang in London brought about freely negotiated brokerage rates. Each of these countries score 10.

In Japan brokerage fees are charged according to a rigid non-negotiable schedule set by the Tokyo Stock Exchange and approved by the Ministry of Finance. Brokerage fees are generally more expensive for large transactions than in other countries but cheaper for small transactions.[33] Japan gets a rating of 2. Germany and France also have fixed commissions. They also receive a rating of 2.

(ii) Are there restrictions against insider trading?

Insider trading laws are perhaps the most debated in deciding their effect on economic freedom. There are those who believe that insider

trading represents a violation of a fundamental trust. On the other side it is argued that insider trading laws prevent individuals from acquiring information which is important in stock evaluation. Without the free flow of information, the whole efficiency of the stock market can be threatened. I would argue that the market itself can punish any abuse of privileged position.[34] The threat to the free flow of information imposed by insider trading rules represents a fundamental threat to the efficiency of the stock market and to fundamental economic freedom. The right to acquire information and act on that information is a fundamental economic right.

The Companies Act of 1952 in Canada makes it an offense for a director to speculate in any of the company's securities. The main problem was uncertainty over the meaning of speculation (generally the term only referred to short sales). The securities act of 1966 required directors to disclose dealings in their own company shares and stated that if a director made use of confidential information for his own benefit which if known publicly would affect the price of shares, the director is liable for compensation to any person or companies for losses suffered.

In 1988 new insider trading rules were introduced in Ontario which gave the Ontario Securities Commission (OSC) a much wider latitude in introducing circumstantial evidence. The use of circumstantial evidence in criminal prosecutions cannot be considered as one which accords with the basic principles of justice. Also the definition of an insider was widened to include so-called tipees—any investor who receives confidential information not available to the marketplace in order to make trading profits. This definition would seem to include any entrepreneur who invests resources to uncover valuable information. Is it desirable to forbid company executives, lawyers, secretaries, analysts, arbitrageurs, investment bankers, shop-floor workers and middle managers from trading in company stock? Calling these people insiders will certainly discourage the collection of valuable information. In addition insider trading penalties were increased from a $2,000 fine and/or a 6-month jail term to a fine up to 3 times the insider trading profits and/or two years in jail.[35] Given Canada's extensive insider trading regulations (although there have been very few prosecutions) a rating of 4 is given to Canada.[36]

Insider trading prosecutions have been very frequent in the U.S. and very rare in Canada. At the end of 1988, President Reagan signed a bill increasing insider trading penalties and making companies potentially

liable for insider trading by their employees. Maximum criminal penalties are now 10 years and the maximum fine is $1 million for individuals and $2.5 million for corporations. This bill allows the SEC to seek civil fines against companies if they "knowingly or recklessly" fail to detect and prevent insider trading by their employees. Because of the large number of prosecutions, a rating of 2 is given to the U.S.

The Companies Act of 1985 in the U.K. defines the circumstances where directors are not allowed to deal in shares of the company: when there are price sensitive matters under discussion and 2 months prior to the announcement of results and dividends. The Financial Services Act of 1986 gave the Secretary of State the power to appoint inspectors to investigate possible insider trading. A legal problem in the definition of an insider revolved around the meaning of the word "obtained." The trial judge in the Fisher case (a London barrister and businessman charged with insider trading) acquitted Fisher because he ruled Fisher was given the information and did not actively seek it. The Law lords recently ruled on appeal that people who deal in shares on the basis of what they know to be unpublished price-sensitive information are guilty of insider trading no matter how the information came into their possession. At the time of this ruling in April of 1989 the Department of Trade and Industry had 45 cases of insider trading under various stages of investigation. In the U.K. insider trading is a criminal offence punishable with jail terms up to 7 years. A rating of 3 is given to the U.K.

Insider trading is illegal in Japan but the definition of an insider is fuzzy and it is not clear what constitutes inside information. Violations of the insider trading law are not subject to criminal penalties. As a result, up to now, insider trading has not been taken too seriously in Japan. In May of 1988 Japan introduced a tougher new insider trading regulatory code. It is not clear whether this is an effective code. A rating of 7 is given to Japan.

West Germany has no legislation concerning insider trading. As such a rating of 9 is given.

Since 1967 the "Commission des Operations de Bourse" has imposed criminal sanctions for insider trading and the spreading of false or misleading information. In addition directors and certain designated employees are required to disclose stock exchange transactions in their company's stock. French authorities have a reputation for lax enforcement of insider trading rules. As a consequence France receives a rating of 5.

(iii) Is there a securities regulator?

Here as in all questions of regulation there are the two opposing theories of regulation. One would be that securities regulation is in the public interest ensuring a well-run securities market and protecting the consumer of security services. The other theory of regulation would argue that this regulation is protectionist and favours private interests. We will take this latter interpretation and assume that over-all the securities regulator infringes on economic freedom.

In Canada securities regulation is a provincial matter. There is no federal regulator. Canada does have active provincial regulators. The fact that there are 10 separate regulators does provide some competition in the regulatory market. This impinges on the ability of regulators to control the market. Too stringent regulation may cause firms to move to other provinces. As such a rating of 5 is given to Canada.

The U.S. does have a very active federal securities regulatory. The Securities and Exchange Commission (SEC) regulates almost every aspect of the securities industry. The U.S. receives a rating of 3.

The Big Bang in London brought about a new system of regulation of the investment business. This new system has been described as a 'structure of self-regulation within a statutory framework.' Regulation depends on the specific rules established by the Securities and Investment Board (SIB - consists of 18 members appointed by the Secretary of State and the Governor of the Bank of England),[37] the various Self Regulatory Organizations (SRO's), Recognized Investment Exchanges (RIE's) and Recognized Professional Bodies (RPB's).

It should be noted that the SIB has similar authority to the SEC. However because of the existence of competing regulatory bodies a rating of 4 is given to the U.K.

In Japan the 1948 Securities Exchange Law created a Securities and Exchange Commission but it was abolished in 1952. The Department of Securities administers security regulation under the direction of the Finance Minister. Hence the Finance Minister is the chief securities regulator. This sytem is inferior to an SEC system because there is no independence of the regulator from the government. The government is the regulator itself. Such a system has the potential of involving more rent seeking activity than a SEC system. A score of 2 is given to Japan.

The securities market in Germany is basically self regulatory. There is no securities act comparable to the U.S. or Canada. There is no regulatory agency like the SEC. The self governing stock exchanges (of which there are 8) make their own rules concerning the trading of securities. A score of 8 is given to West Germany.

The Commission des Operations des Bourse (COB) was created in 1967. It supervises the public insurance and trading of securities similar to the SEC. However unlike the SEC, the COB cannot prosecute offenders, has a small budget and only about 13 investigators. France gets a rating of 5.

Overall Rating and Conclusions

There is no easy way to arrive at an overall rating for each country. Twelve ratings have been given to each country in four categories. I propose to give each category a weighting of 25%. Within each category the weighting scheme is shown in Table 2. The provision of a stable monetary environment is considered to be essential to the freedom of contract. This gets a weight of 20%. The five questions on regulation of banks each get equal weight of 5% and the two questions on regulation of capital flows get equal weight of 12.5%. In the regulation of the stock market the question of fixed commissions gets a weight of 5% and the other two questions get a weight of 10%.

West Germany with a rating of 8.3 ranks number 1 in terms of economic freedom in money and capital markets. Canada, U.S. and the U.K. are for all practical purposes tied for second place with ratings between 6.1 and 6.6. Japan ranks next with a rating of 5.3 and the worse performance is recorded by France with a rating of 4.3.

Notes

[1] It should be noted that a particular data set is used to define money. One would need another data set to test the proposition that money influences prices.

[2] One could debate for a long time which definition of national income to choose. Regardless of the definition, one would want to define income as permanent income.

[3] Also see Rothbard (1988).

[4] This is consistent with the view of Milton Friedman that although monopoly can exist in the short-run it cannot exist in the long-run (unless it is fully protected by government).

[5] It should be noted that the 1933 prohibition of interest on demand deposits was not repealed. However banks were allowed to issue negotiable order of withdrawal (NOW) accounts which were in effect a way of issuing interest-bearing demand deposits.

[6] Deregulation of the London security market in October 1986 was known as the Big Bang.

[7] A similar story could be told about transportation deregulation. Airline deregulation in the U.S. forced similar deregulation in Canada. A large part of the Canadian population have easy access to U.S. airports. Similarly, U.S. trucking and train deregulation forced Canadian deregulation. Goods going from Vancouver to Montreal could just as easily use U.S. routes as Canadian routes.

[8] One may ask why it was necessary for the government to force the LSE to change its rule. Why didn't the LSE change the rules by itself. A possible answer to this question is that not all brokers would be hurt by international competition. Those brokers dealing in securities which were listed solely on the LSE would not be hurt by international deregulation. Clearly, international competition would reduce political support for fixed minimum commissions and with reduced political support such a policy was no longer politically viable.

[9] This example traces British deregulation to U.S. deregulation. Commissions on the NYSE were deregulated in the mid-1970s. One can ask what started this whole process off. Why did the NYSE deregulate commissions. A possible answer is that financial institutions were accounting for a larger and larger share of trading volume of the NYSE. The development of computers allowed large institutions to trade blocks of share off the NYSE. To be competitive, the NYSE had to reduce commission fees for their customers. Hence this example also illustrates the importance of substitute products in eroding monopoly positions.

[10] The modern attack on this view started with Klein (1974). For a complete analysis of the free banking position see Selgin (1988).

[11] The description of the activities of the central banks is taken from Fair (1979).

[12] See Revell (1973).

[13] It should be noted that the Federal Reserve is not adverse to making such requests. However, with the large number of U.S. banks such a request is bound to be ineffective.

[14] These foreign banks are known as Schedule B banks. They are restricted in their ability to branch and on the share of the market they are allowed. The recent Canada-U.S. Free Trade Agreement has freed U.S. Schedule B banks from these restrictions.

[15] From 1983 to 1987 interest rate margins fell by about .4 of a per cent.

[16] Not one Canadian bank failed during the Great Depression but there were bank failures after deposit insurance was introduced in 1967.

[17] Building societies have their own scheme.

[18] Foreign banks can be exempted if they have their own scheme in their home country.

[19] The Bank of Canada is proposing a complete abolishment of reserve requirements for the Canadian banking system.

[20] This was a bitter lesson that U.S. banks discovered during the Great Depression.

[21] This data is taken from Brock (1989). It is interesting to note that many Latin American and African countries have both high reserve requirements and high inflation rates. For Latin American countries reserve requirements are in the 30 to 40% range.

[22] See Euromoney, February 1988, p. 37. It should be noted that these interest rate controls exist in Japan in spite of attempts at deregulation. In addition, it should be noted that some observers claim that Japanese banks do in fact get around some of the interest rate controls. If this is the case the estimate of the subsidy will be on the high side.

[23] Part of this is due to the desire of regulators to restrict the riskiness of banks' portfolios in a regime of non-risk rated deposit insurance.

[24] In Canada, no one can own more than 10% of a chartered bank. The rationale for this restriction is to prevent the bank from self-dealing (e.g. making loans to its major shareholder). Such restrictions prevent the exis-

tence of major shareholders and this may very well prevent significant shareholder monitoring of management because of the free rider problem.

[25] As of September 30, 1986 there were 6,550 bank holding companies in the U.S. Through this form of organization U.S. banks have been able to avoid some of the anti-branching restrictions and some of the product line restrictions imposed on them.

[26] This rule is known as Article 65 and dates back to the time of U.S. occupation. Essentially Article 65 is importation by the occupation administrators of Glass-Steagall into Japan.

[27] The year of Le Petit Bang. The monopoly existed from the time of Napoléon.

[28] The monopoly was broken primarily because of the development of substitutes. It was estimated that at the height of the bull market, the LSE traded 25 to 30% of the shares of the top quarter of French companies. See International Management, January 1989, p.18.

[29] Under the Free Trade Agreement, U.S. banks are exempt from this restriction.

[30] For U.S. companies, the Free Trade Agreement has modified these terms.

[31] As one can imagine industries try to convince the government that they are culturally sensitive in order to receive protection from foreign competition.

[32] Sometimes the French government has prevented takeovers by increasing the cost to the foreign firm of the takeover. Such actions as asking for guarantees to keep the management French and to ensure all French nationals keep their jobs are typical examples.

[33] As would be expected average commissions on the TSE are higher than those charged on the NYSE. With more and more international competition, this differential may be difficult to maintain.

[34] If a firm deems that trading by certain individuals could be harmful to its owners, then employment contracts can have clauses which prevent such trading.

[35] It should be noted that after the Boesky case in the U.S., the OSC spent almost 2 years and $1 million investigating insider trading. As a result of this investigation, 3 individuals face losing their rights to trade stock for using information to make trading profits.

[36] Canada has had one high profile insider trading case and the government (of British Columbia) lost this case; the case of the former Premier

of British Columbia (William Bennett, Jr.) trading in the shares of Doman Industries Ltd.

[37] The SIB is the overall regulatory agency under the Act. It can investigate and prosecute. The SIB has the power to withdraw or suspend authorization to carry on an investment business if a firm fails the 'fit and proper test.'

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Discussion

Tom DiLorenzo suggested that there is over $100 billion per year allocation of U.S. government loans, loan guarantees, and government sponsored enterprises like Fanny-May and Ginny-May and off budget items that crowds out private allocations for which some sort of measure should be made. Walter Block liked the table at the end and felt that the weights were reasonable, but would change the rating on the U.S. for insider trading to a 2 rather than a 5. He also saw no difference between government deposit insurance and government house insurance, and thus felt it should be privatized from the perspective of economic freedom. Portfolio regulation on insurance companies is also an abridgement of freedom. Similarly stock market regulation is also a restriction on economic liberty. It is a restriction on a private company, the stock exchange, who agree on the rules for whoever wants to play. The fractional reserve system seems to require the government to intervene in the face of banking bankruptcy, and Block saw no economic justification for such a stance as it prevents bankruptcy from playing its role in the economic system. Milton Friedman asked Walter Block whether government provisions for bankruptcy reduce economic freedom, to which Block responded, "yes." Friedman pointed out that bankruptcy is a legal arrangement by which bad debts are allocated, and may not qualify as a restriction. Bernard Siegan indicated that bankruptcy provisions were considered by Justice Marshall in 1827 as a violation of the obligation of contract clause of the Constitution unless both parties agreed. But more to the point of the paper, he did not see a consistent thread of a maximization of economic liberty through the absence of coercion. Carr replied that in the paper he looked at how restrictions affected economic well-being. If there are restrictions that are meaningful, then they have to be judged by some standard. If they reduce freedom to transact in financial markets, then they reduce economic well-being.

Edward Crane did not like the 5 given to the U.S. for deposit insurance which he feels should be private—if at all. This in turn would give rise to a demand for a market accounting of financial institutions' portfolios. Carr argued that the ranking reflected relative levels. Canada and the U.S. are the same so both get a 5. Milton Friedman argued that there may be some occasions when government interventions are justified. For example, de-

posit insurance, established in 1934, laid the foundation for recovery from the Depression. Today there is no justification for such an intervention. Going back to the bankruptcy issue, he asked Siegan to suggest what Marshall would have done as an alternative to bankruptcy legislation. Siegan said suit would be brought against the offender as in any other failure to pay a contract. Friedman pointed out that the issue is not an argument of principle since there is government intervention in both potential processes. The question is which is the most effective way of enforcing this type of contract. Block maintained that there is a violation of economic liberty, regardless of economic efficiency. The bankrupt should be treated as a thief. Clifford Lewis wondered whether market failure was a good argument for intervention in this context. Friedman remarked that he, too, was skeptical of many examples of market failure, but in some cases, you have to choose among alternatives, both of which may be coercive and lead to a choice that balances among the levels of coerciveness and efficiency.

Carr, responding to the argument that portfolio regulation reduces economic freedom, suggested that when we observe ubiquitous legislated rules governing insurance companies portfolios, and we are unable to see who this benefits in the industry, it may be that it protects freedom. For example, if the public wants to be protected from a one-time shift in portfolios by insurance companies, and the least costly way of doing so is through legislation, then the companies themselves may acquiesce happily. We cannot just dismiss the rules as freedom reducing. Furthermore, Canada went through the Depression with fractional reserve banking, no deposit insurance and no bank failures. The only failures have been recent during the period in which deposit insurance has been in force. There is no incentive to monitor portfolios now, and the response is clear.

Ed Crane wanted Milton Friedman to reconsider his approach to market failure. Look at the $200 billion in liabilities to S&L's the deposit insurance system has caused, he requested, and consider the problem as a matter of principle. Tax withholding is another issue that reduces freedom. Friedman responded that on the tax withholding point, he had supported it as a measure taken in the midst of the Second World War, but there was little justification for it in peace time. On the more general point, he agreed that the government's action causes incentives that may not be desirable, but in certain cases, at particular times, the actions are justified. If it needs

the money to fight a war, it is hard to stand on principle in the face of necessity. Gerald Scully maintained that Friedman trivialized the difference between contract and bankruptcy. Bankruptcy is an ordered allocation of assets, while enforcement of contract law means rendering a judgment which may mean payment of more than is currently available and must be paid over time. Bankruptcy reduces freedom from this perspective. Friedman wondered whether driving on the right side of the road reduces freedom. In Block's sense, yes, he suggested, but since we need some mechanism to decide certain issues, he viewed bankruptcy as one set of rules. Siegan pointed out that the penalty for the contract may affect the kinds of contracts into which one enters. Bankruptcy is one set of rules, while the law of contract is another. Friedman argued that in principle, since some decision must be made about the rules of the contract, bankruptcy is just one set of rules like any other. Carr suggested that bankruptcy does not prevent contracts. It is for residual claimants. Some way of allocating assets and settling contracts is needed.

Alan Reynolds felt that changes in economic progress can be related to economic freedom even though Carr does remark that the levels of economic progress are very different and may not be related directly to levels of economic freedom. DiLorenzo felt that the production function does not reflect the effects of economic freedom. Carr responded that the production function is just a method for organizing our thoughts about these issues. If one wants to do the simple correlation between economic freedom and GNP, fine, but economic freedom can also be included as an input. Walter Block was unhappy with identifying economic freedom with economic welfare such as GNP. Carr responded that if you accept the production function in which economic freedom is another factor, then the next step is to try to get an empirical measure of the inputs. When one tries to get an empirical counterpart to the theoretical measure, there are problems—the usual problems. In any production function analysis some method is needed for deciding what is the "best" definition in the context of some specific problem. There is no absolute definition of economic freedom. Using a problem to identify a characterization of economic freedom is the only way to proceed. There may be better ways to proceed, but he did not see them on the table.