CHAPTER 1

A preview of the results

Wealth comes from two sources: *production* and *predation*. Production increases wealth whereas predation transfers wealth. Production is a cooperative effort in which direct actors may gain; predation is a noncooperative effort in which the economic prey lose. Production is cooperative; predatory behavior is selfish. Selfish individuals increase their welfare at the expense of others. This book describes how economic agents and political parties generate equilibrium levels of resources devoted to predatory redistribution. In this process, lobbying expenditures are the inputs and special-interest policies and wealth transfers are the outputs.

This book develops the microfoundations of endogenous redistribution theory. Individuals and groups will devote resources to redistribution so long as the gains exceed the costs. Self-interested actors do not care whether their income derives from cooperative or noncooperative behavior. Individuals will invest in both production and predation until the marginal returns from each are identical. At this point, a redistributive equilibrium exists.

Arbitrage between economic and political activity is the driving force behind redistributive politics. Economic wealth can create political power and political power can create wealth. It is this mutual attraction between power and money that motivates redistributive activity.

Economically efficient government policies create greater gains than losses whereas inefficient policies do the reverse. Economically efficient policies usually benefit large groups; inefficient policies usually benefit only smaller special-interest groups. Both efficient and inefficient policies have redistributive effects. It is these redistributive effects (and not the overall efficiency effects) that motivate special-interest lobbies to action.

Chapter 1 of Stephen P. Magee, William A. Brock, and Leslie Young, *Black Hole Tariffs and Endogenous Policy Theory*. New York: Cambridge University Press, 1989. Adapted from Stephen P. Magee, "Summary," mimeo, University of Texas, October 1983.

This book advances the notion that the unbridled pursuit of private individual gain does not maximize society's wealth because of the negative externality of redistributive activity. Adam Smith argued that the pursuit of self-interest by individuals would lead a benign invisible hand to maximize society's income. In Chapter 15, we show that the reverse is possible: We give conditions under which the pursuit of self-interest by lobbies can cause an invisible foot to minimize society's income. We call this an *economic black hole* because lobbying can drive economic income virtually to zero. The interesting feature of invisible foot behavior is that redistributors do best when their activities are invisible to the general populace. Chapter 18 shows how political parties disguise their policies in our theory of optimal obfuscation. Redistributive activity, like criminal behavior, is most successful when undetected. In Chapter 8 we present cross-national empirical evidence that redistributive lawyering does indeed lower economic performance.

The powerless politician effect suggests that there is no solution to the economic waste caused by competitive redistribution. That is, policies are determined by rational self-interested behavior of all of the players in the system. Not even the politicians are in charge because their vote-maximizing actions are determined by the technology of collecting funds from special interests and distributing those funds to garner votes from general interests. This book builds the microfoundations of party behavior, lobby behavior, and economic behavior in a self-interested world. We speculate here that successful countries such as the United States have been coincidentally blessed by a congruence of the special interests (who wrote the Constitution) and the general economic interest. One useful outgrowth of this book might be a new slant on constitution theory, particularly in how to narrow the gap between economically efficient versus politically efficient equilibria.

Part I is about how lobbies and political parties interact to redistribute income through tariffs and trade restrictions. Part II investigates the same questions in general equilibrium. Part I provides theory and evidence explaining tariff structure (tariff levels across industries) while Part II does the same for national tariff levels (a given country's tariff level through time). Chapter 2, which precedes Part I, presents a diagrammatic exposition of endogenous policy theory and endogenous lobbying theory, plus a list of some major works on the subject.

1.1 Results of Part I

Chapter 3, written largely in 1973, is the first paper publicly presented by Brock and Magee on endogenous tariffs and endogenous lobbying. The first and most important result is that *tariffs are endogenous*. To our knowledge, this was the first paper to describe tariffs as the outcome of a

redistributive battle between lobbies fought through the political system, and with all of the key actors displaying maximizing behavior. Krueger's (1974) paper on rent seeking had maximizing lobby behavior, but there were no political parties and no voters present. In her model, lobbies expended efforts to obtain licenses under a fixed import quota.

In an endogenous policy model, *policies play the same role in politics as prices* play in an economy: Both are equilibrating variables that adjust until opposing forces are balanced. When the demand for wheat is high, the price of wheat is high. Similarly, powerful groups with high demands for protection will obtain higher tariffs than smaller and weaker groups. Just as prices equate demand and supply at the margin, so do redistributive policies equate, at the margin, pressures for and against a given type of redistribution. The textile lobby may obtain a 20% tariff, whereas a weaker lobby such as leather may obtain only a 5% tariff. If these are equilibrium tariffs, attempts to increase the textile tariff from 20% to 21% would encounter greater opposition than support (as would an increase from 5% to 6% for the leather tariff).

A second result is that *lobbying is endogenous*. The assumption of vigorous competition between the political parties means each lobby can only influence the electoral success of its party and not the position that the party took on tariffs. Should the lobby contribute funds to its favored party to maximize that party's probability of election? The answer is "no." The rational lobby will maximize the income of its membership, which is a weighted average of its expected income under each of the two possible political outcomes (say, Democrats vs. Republicans), less the lobbying costs. In equilibrium, the lobby's last dollar contributed to politics should generate just a dollar in additional income to the lobby membership. Anne Krueger's (1974) work on rent seeking was a pioneering paper on endogenous lobbying.

A third result is the concept of *political efficiency*. In a competitive political system, policies will proliferate so long as they increase the probability of election of the party sponsoring the policy. In an efficient political system, there is no new policy that will increase the welfare (probability of election) of one of the parties. The list will include both welfare-increasing (Pareto) and welfare-reducing (redistributive) policies.

There is a *trade-off between economic and political efficiency*. Redistributive policies that benefit one of the parties may be deleterious to the economy; similarly, the elimination of some inefficient redistributive policies may harm one or more political parties at the polls and may reduce the level of public discussion about some important political issues (because less lobbying money is available). We speculate that the most efficient economic systems will be in countries that have not achieved political efficiency (i.e., in countries where the parties have not sponsored all of the redistributive poli-

cies at their disposal). In these countries, the level of lobbying for redistributive policies will be lower; hence the level of resources to fund political campaigns will be lower. The down side to this is that all political issues will receive less public discussion. Similarly, countries with more efficient political systems will have greater lobbying, greater funds for campaigns, and more public discussion. Unfortunately, they will also have more distortionary redistributive policies, regulatory entanglements, and politically created economic inefficiency. We also define the conditions required for an *Arrow–Debreu endogenous redistributive political equilibrium.* In this model, each individual (i.e., entity) must calculate the effect of a tariff on its excess demands for each good. Each individual allocates its resources between production and predation so as to maximize its welfare.

An important result is our development of the *probabilisitic voting model,* a major theoretical alternative to the median voter model. There is a protectionist lobby that would gain from a tariff (or any form of protection), and a proexport lobby that would gain from an export subsidy (or any other form of export promotion). Each lobby contributes resources to the parties so long as the expected dollar return from the contribution exceeds its cost. Thus, the lobbies maximize their expected returns from their political investments. There are two political parties: A protectionist party sponsors a tariff, and a proexport party sponsors an export subsidy. Each party sets its policy to maximize its probability of election.

Party competition drives the *political parties to act as Stackelberg leaders.* Any party that acts as a Stackelberg follower or in Cournot–Nash fashion will have a lower probability of election than if it acts as a Stackelberg leader; consequently, it chooses the latter strategy. (A Cournot–Nash actor takes the current values of the other players' decision variables *as given* when plotting a strategy; a Stackelberg leader calculates how the other players' decision variables respond to variation *in his own* decision variable before plotting a strategy.) When a party acts as a Stackelberg leader, it anticipates how much lobbying money it will receive for all possible levels of its policy. It then picks the policy level that yields it the most votes (i.e., that maximizes its probability of election). Ironically, this means that the policy chosen by each party will be determined before any funds to be contributed by a lobby start flowing. Hence, in a sense, the level of the policy is based on anticipated rather than actual lobby contributions. We construct a *Stackelberg-leadership pyramid* to describe the game-theoretic equilibrium concept: that is, how all of the actors interact. The pyramid is realistic in that the power is greatest, the actors fewest, and the information best at the top of the pyramid.

In an endogenous political equilibrium, neither the two parties nor the two lobbies get everything that they want: Each player's optimal behavior de-

pends on the actions of the other three players. Each player maximizes his (her/its) position, but subject to three constraints imposed by the other players. Ironically, since the parties cannot select the policies that are in the best interests of the country, we have the *powerless politician effect: Government policies are outside of policymaker control.*

The next result is the *contribution specialization theorem.* Assume that the protectionist lobby is attempting to decide on its lobbying expenditures in a two-party race. Let the protectionist party support a 20% tariff while the proexport party favors a 10% export subsidy. Because the policy positions are already set, as the parties are Stackelberg leaders, the only thing left for the two lobbies to influence are the probabilities of election of the parties. It is clear that the protectionist lobby should specialize its contributions and give only to the protectionist party. That is, the welfare of the protectionists increases with probability of election of the protectionist party, but decreases with the probability of election of the proexport party. If the protectionist lobby contributed to the proexport party, it would lower its chances of getting a 20% tariff and increase its chances of getting the unwanted 10% export subsidy. Similar arguments apply to the proexport lobby, which should give only to the proexport party. Hence, both lobbies should contribute exclusively, each to its most favored party.

There will be *nonparticipation of lobbies in Hotelling races* (in which the political parties quote identical positions). For example, if both parties quote an identical policy (e.g., both parties support a 10% tariff), neither lobby will contribute any funds because the policy chosen after the election will be the same regardless of which party is elected. A related result is the *nonexistence of a Hotelling equilibrium on special-interest issues*. Since we know that the lobbies will contribute to neither party, neither party would gain by quoting a nonzero position on the tariff – voter hostility would be encountered with no offsetting gain in contributions.

The results in Chapter 3 suggest that, as we look across countries, we should observe (1) that protariff and proexport lobbies support different parties and (2) parties will not take identical positions on the issue of protection. We do not test these implications in this book.

Chapter 4 explores the campaign contribution specialization theorem in greater detail, as well as the larger question of optimal contribution strategies of a special-interest lobby. There are three reasons why lobbies give to political parties: policies, future access, and avoidance of retribution effects. We find three exceptions to the contribution specialization theorem. The first is that a lobby *might contribute to both parties in the presence of imperfect information*. The requirement for this result is that the lobby must believe that it can influence the policy that each party will provide. Through time,

however, it should learn that sophisticated parties (playing a Stackelberg-leader game) will have already anticipated their moves and set their trade policy. A second exception is that *access effects might also generate contributions to both sides*. Some donors anticipate the need for access to a party in the future (on unspecified issues) and they believe that it will be available only if they have contributed in the past. This might induce the protectionist lobby to contribute to the proexport party in the hopes that it would get some future unspecified benefits. A third exception is that a lobby may *contribute only to its nonfavored party if retribution effects are present.* Protectionist contributions to the protectionist party will be reduced to the extent that the protectionists anticipate that the proexport party (if elected) will punish them for giving to the protectionist party. If there are access effects, so that a protectionist lobby would normally give to both parties, but the proexport party is retribution prone, then a protectionist lobby might give only to the nonfavored proexport party.

There are three empirical implications of the special-interest lobbying model. The specialization effect of contributing only to the most favored party increases with the size of the contributors. Thus, *large donors are more likely to specialize their contributions* on a single party. Also, *contributions* (based on policy positions) *will be independent of the probabilities of election*. The protectionist lobby will give only to the most protectionist party (not to the party most likely to win), and the amount it will give is driven not by the probability of its election but by the *marginal probability of election.* The latter is the increase in the probability of election caused by additional lobbying funds. For example, if the protectionist party has an 80% chance of being elected, and if a large contribution will not increase that chance much (because of diminishing returns, voter satiation with advertising, etc.), then the protectionist lobby should not contribute, because of the low marginal payoff. On the other hand, if the protectionist party has a 10% chance, but a contribution will increase its chances dramatically, then a contribution by the protectionists may be rational. On the other hand, contributions for retribution and access effects do not follow this independence effect: They *will* be affected by the probabilities of election. A final empirical implication is that *polarized parties generate greater special-interest contributions*. That is, polarized elections, in which the parties are far apart on redistributive issues, generate greater lobby contributions to both parties than campaigns in which the parties are closer together.

There is a generalization of the campaign contribution specialization theorem. To how many parties should a lobby contribute when there are n parties? The *rational lobby will contribute to* $n - 1$ *parties,* at most. The generalized rule is never to contribute to the least preferred party.

The last result is an *empirical test of the contribution specialization theo-*

rem. The data were not taken from tariff lobbying but rather from contributions to American presidential races. This should provide a tougher test for the theorem because a presidential race is a multi-issue race and much more complicated than a tariff. In the 1964, 1968, and 1972 presidential races, 7%, 14%, and 8% of the contributors, respectively, gave to both parties. We found that the larger contributors tended to give to one side, as hypothesized, in 1968 and 1972, whereas this was not the case in 1964. Thus, the data gave modest support for the hypothesis in two out of three elections.

Chapter 5 presents the basics of *endogenous tariff theory*. Result 1 is the *reverse-slope theorem*. Imagine a two-dimensional diagram with the tariff position of the protectionist party on one axis and the export subsidy of the proexport party on the other axis. When we plot the reaction curves (the optimal strategies) of each party, we find that the slopes of the curves have opposite signs in the neighborhood of equilibrium. To label this behavior, we say that the party with the positively sloped curve "emulates" the actions of the other party (when the other party raises its policy, so does the emulator), while the party with the negatively sloped curve "counteracts" the actions of the other party.

Result 2, the *reverse-shift theorem*, suggests that certain exogenous shocks cause one of the parties to increase its policy and the other to reduce its policy. Thus, the tariff and the export subsidy will generally move in opposite directions in response to shocks. There is mild qualitative evidence for this phenomenon in the postwar period among the Western democracies: For the 1950s and 1960s, tariffs fell while export promotion grew. However, we do not examine this empirical phenomenon in this book.

The reverse-shift theorem forms the basis for results 3 and 4. Result 3 is the *policy-distance paradox*. It is possible (though not inevitable) that both the protectionist lobby and the proexport lobby become more powerful and yet the distance between the two parties falls (i.e., the sum of the equilibrium tariff and the equilibrium export subsidy falls). One possible consequence of the decline in policy distance is that contributions to both parties might fall, despite the initial increase in lobby power.

The reverse-shift theorem also generates result 4, the *distortion paradox*. Both distortions may increase, and yet the average of the two may fall. (The weights are the probabilities of election of the two parties.) This is possible when the increase in the policy of the high-distortion party causes its probability of election to fall a great deal. Next, we get a result that sounds tautological but is not: *Inconsistent parties* increase the likelihood that the endogenous policy equilibrium will be *unstable*. If each party's reaction curve is highly elastic with respect to the other party's policy, then the parties are inconsistent (i.e., they make wide swings in their positions for small changes

in the position of the other party). In this case, the Cournot–Nash tariff equilibrium will not be stable. That is, if two parties are in the neighborhood of this equilibrium, they will not converge but rather diverge from it.

Next, we generalize these propositions. The *generalization of the reverse-slope theorem to many parties* suggests that if party 3 raises its tariff in response to a tariff increase by, say, party 5, then party 5 will lower its tariff in response to an increase by party 3. We suspect that the reverse-slope theorem might be quite general and applicable to most redistributive policies in a democracy. The reverse-slope theorem *generalizes to constant-sum games* between two parties (not just unity-sum games involving the probability of election). For example, it would apply to *asymmetric externality* situations in which one industry generates a negative externality (e.g., a pollutive steel plant) while another industry generates a positive one (e.g., a suburban housing development). An increase in the size of the housing development would increase the value of the steel mill, but an increase in the size of the steel mill would reduce the value of the suburb. Given certain assumptions, the reverse-slope theorem holds for constant-sum games *with many political parties*.

Chapter 6 constructs a model of the microfoundations of endogenous lobbying theory. Particularly applicable to industry lobbying, the model describes the optimal contributions by each member of a protectionist lobby, the equilibrium behavior of each member depending on the amounts given by all other members. A tariff creates a public good for all of the protectionists in a given industry, regardless of whether they contribute to the tariff effort. Thus, this chapter explores conditions required for Olson's (1965) voluntary provision of a public good. The first result in this chapter is a *model of the industry lobby as a noncooperative n-person game*. It retains the stringent assumption that each lobby member acts selfishly (i.e., only in its own interest). We do this by formalizing the importance of public-good effects relative to private-good effects for each member of the lobby. When the public-good effects dominate, free-riding is a serious problem. In this case, an individual, who is small relative to the lobby as a whole, does not perceive any effect of a contribution on group effectiveness and will not contribute. When there are firm-specific gains, however, such as the Chrysler bailout by the U.S. government, lobby contributions are greater. Almost by definition, lobby effectiveness increases with the private-good effects and decreases with the public-good effects.

Second, conditions are developed for *existence and uniqueness* of an equilibrium. Third, conditions are specified on the net marginal value products of each member, yielding *Olson's exploitation of the large by the small.* Let all of the members of the lobby be of equal size. Then increase the size of

one of them. That member increases its lobby contribution while all of the smaller players decrease theirs. Total lobby contributions increase while per-member contributions decrease. In this experiment, both the total stakes increase and the shares of the gainers become more unequal. If we hold industry sales constant but increase the number of players, then total contributions decrease with the number of firms in the industry. In this case, total lobby contributions approach zero as the number of lobbying members increase. This result is consistent with the powerlessness of many consumer lobbies.

Fourth, in this same model we explore two important considerations suggested in the literature on lobbying: *perceived effectiveness and noticeability*. In addition, we develop restrictions on the contribution functions that guarantee the following three forms of Olson–Stigler lobby behavior:

1. Lobbying contributions are homogeneous of degree 1 with respect to the stakes (i.e., double the size of the industry and lobbying expenditures will double). Similarly, a doubling of the sales of each firm in an industry would double the total lobby contributions of the industry.
2. Protectionist lobbying contributions are maximized when there is only one seller, that is, a single import-competing monopolist who does not have to worry about free-riders.
3. Increases in the inequality of the benefits from a tariff increase total lobbying contributions. Conditions sufficient to give these results are the following. There is an initial phase of increasing returns of group benefits from contributing, followed by one of decreasing returns; each contributor perceives that the increase in the total group benefits from its contribution are less than its marginal cost; and the marginal private gains to each individual of contributing are identical across givers.

Fifth, we construct a *simplified model* by assuming that all of the members of the lobby are of equal size. We get four results:

1. Consider the case in which there are no private benefits to contributing to the lobby and all of the members are of equal size. In this case, there is a unique Nash equilibrium in the total level of contributions but an indeterminate composition of that total among the lobby members. Because of the latter, lobby members may contribute very unequal amounts and some may contribute nothing at all in equilibrium. Total lobbying contributions are unchanged if we add to the industry another firm that has the same level of sales as all of the other (identical) ones: A larger industry effect is just offset by a

smaller share effect. Thus, total lobbying expenditures are independent of the number of identical members. These results apply to consumer lobbies. Only if there are private benefits does the addition of another identical firm increase total lobby contributions.

2. If there are both public and private benefits present, then addition of another identical firm to the lobby will reduce per-member contributions but increase total lobby contributions. The industry is now larger and so are lobby contributions.
3. A larger number of firms in the industry but with industry sales unchanged will lead to no effect on the total lobbying effort only when the benefits of lobbying are fully private (i.e., there is no free-riding).
4. With both public and private benefits present, an increase in the number of firms in an industry of fixed size causes a decrease in total lobby contributions.

How would one use this theory to explain tariff rates across industries? The *lobbying power function* is the sixth major result. It states that industry tariffs can be explained as a simple product of a concentration measure and the value of industry sales. Given both public and private benefits from lobbying, assume that the total level of funds flowing from a protectionist lobby can be described as the product of the lobby's gain from the passage of a tariff and the Herfindahl index of the shares that each lobby member would have in that gain. If industry tariffs increase monotonically with protectionist lobbying expenditures, then the power function conforms to the usual econometric specification that industry tariffs should be positively correlated with the product of the Herfindahl index of industry structure and the total value of sales across industries. Chapter 6 highlights the number of theoretical assumptions required to obtain this specification. However, it does not solve the problem of labor and capital free-riding on each other in such a model.

Result 7 deals with the relationship between *tariffs and the size of political jurisdictions*. If aggregation of political units into larger ones increases protectionist lobbying expenditures relative to free-trade expenditures, the equilibrium tariff increases. This suggests that the senators from a U.S. state would be more protectionist than the members of Congress from the same state. It turns out that special-interest lobbying can either increase or decrease relative to general-interest lobbying as we move to larger geographical aggregations of the same individuals: The direction of the results depends on the size of the public versus private lobbying effects.

When the free-rider problem is severe, the senators will be more special-interest and favor higher tariffs than the members of Congress. Consider first