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# The Welfare Loss from Monopoly Re-visited: Rent Seeking and Protectionism

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**Abstract:** In a 1954 paper, A. C. Harberger claimed that the welfare loss from monopoly in United States manufacturing was less than one tenth of one percent of national income over 1924-1928. This led to additional claims of low monopoly welfare loss and eventually to a counter-argument in favor of adding a rent-seeking cost equal to part or all of the economic profit to this loss. These arguments assumed a passive role for government. In this paper, by contrast, governments are active and seek to maximize their political support. The political support maximum then depends on the nature of the political system and, in particular, on how inclusive this system is. The same is true of the monopoly welfare loss, which becomes largely the social cost of rent seeking plus the social cost of protectionism—or of protecting existing profits by restricting investment that would increase competition in markets where these profits are earned. Protectionist measures lower innovation and the growth of total factor productivity, but can still be a good source of political support in a political system where inclusiveness is moderate to low. This can explain not only the existence of inefficiency and of large monopoly welfare loss, but also their persistence and the persistence of large differences in total factor productivity between nations.

**Keywords:** Efficiency, Inclusiveness, Political Support, Rent Seeking

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## 1. Introduction

This paper re-visits the ‘welfare loss from monopoly,’ a subject first raised by A. C. Harberger [10], who concluded that this loss in United States manufacturing was trivial—costing less than 0.1 percent of national income over 1924-28. Assuming that marginal costs were upward-sloping or constant in each industry, this would, in Harberger’s view, be the maximum gain from re-allocating resources within manufacturing to eliminate the misallocation caused by the monopoly ([10], pp. 81-82). Later, Schwartzman [19], Worcester [22], and Carson [6] reinforced Harberger’s claim to varying degrees. It was challenged, however, by Tullock [1967]—who gave examples of welfare loss beyond the one associated with the dead-weight loss triangle (area *FBL* in Figure 1)—and by Bergson [4], who used a general equilibrium model in place of the partial equilibrium approaches of other authors.

In addition, Cowling and Mueller [7] described omissions (notably of advertising) in earlier papers whose inclusion

would raise their welfare loss estimates. Rhoades [17] gave an example (U.S. banking) in which a claimed tiny deadweight loss went hand-in-hand with large re-distribution and output restriction effects, and Laband and Sophocleus [13] found a welfare loss from “legal/political rent seeking” equal to 22.6% of GNP in the United States in 1985. Here rent is a reward for political activities reflecting a rent seeker’s ability to obtain preferential treatment from government. Finally, Neumann [15] analyzed the effect of monopoly on growth, finding that this greatly increased welfare loss estimates. In general, the results of these studies varied widely and showed welfare losses that were often many times Harberger’s estimate, although not necessarily large as a share of GNP or GDP.

What is missing in each of the above papers is an active role for government. There is no explanation of why a government adopts one set of policies instead of another, although policy choices are clearly relevant to welfare loss outcomes. The contribution of the present paper is to address this omission by showing what happens when government is explicitly modeled as a maximizer of political support, as in

Carson [5]. The welfare loss then depends on how a support-maximizing government obtains its support, which depends in turn on the nature of the political system and, in particular, on how inclusive it is. As in Acemoglu and Robinson [1], low inclusiveness implies rent seeking and protection of profit by suppressing market competition. Because investment and innovation can threaten the profits of competitors, the ability to protect these profits can be a good way of attracting political support, especially when inclusiveness is moderate to low. As a result, the monopoly welfare loss can be larger and more persistent than in Harberger, Schwartzman, Carson [6], or Worcester because of greater rent seeking and/or lower rates of investment, innovation, and technological progress. Without making any extreme assumptions, the monopoly welfare loss can exceed 50% of actual output.

Consider an economy with the same two aggregate products as in Carson [5]. These are ‘useful output’ ( $Y$ )—basically goods and services that are useful in consumption or further production—and rent seeking ( $R$ ), or production of political support, which is traded for rent.  $R$  will be the numeraire and  $P$  will be the price of  $Y$  in units of  $R$ . “Only  $Y$  can yield utility from present or future consumption, the way in which useful output is ‘useful’” ([5], p. 559). Production of political support for one candidate at the expense of another, which uses resources to redistribute wealth but does not create new wealth, is social waste, and this is therefore true of  $R$ .

National income—ie., GDP or GNP in units of  $R$ —is then  $PQ + R$ , where  $Q$  is the quantity of  $Y$ .  $PQ + R$  is assumed to be the same, for any division of GDP/GNP into  $Y$  and  $R$ , which makes the welfare loss from monopoly a loss that results solely from monopoly pricing. The higher is  $P$ , the higher this loss will be. Figure 1 shows demand and supply curves for  $Q$ . Here  $D$  is demand, and  $S_B$  is supply if competition and innovation are discouraged in order to protect existing rents, while  $S_A$  is supply if market competition and innovation are encouraged even when they destroy rent. For any given supply price,  $S_A$  gives a higher quantity supplied than  $S_B$ , and for any given quantity supplied, the supply price is lower on  $S_A$ . In each case, the supply curve also gives marginal cost.

When restrictions on investment protect market power—which makes it profitable to price above marginal cost—the long-run outcome in Figure 1 is the monopoly outcome at  $F$ . If the economy is competitive, the outcome is at  $A$ , defined as the point where all resources are used to produce  $Y$ , and therefore where  $R$  equals zero. This is also the social optimum where total consumer plus producer surplus is maximized. At  $F$ , a ‘deadweight’ loss equal to the area of triangle  $FBL$  arises because by lowering  $P$  from  $P_F$  to  $P_B$  and shifting all resources out of rent seeking, it would be possible to increase  $Q$  from  $Q_F$  to  $Q_B$  and consumer plus producer surplus by area  $FBL$ . This is still not a welfare optimum, however, until the restrictions on investment that protect monopoly profit at  $F$  are removed. Since these restrictions also lower innovation, their removal improves technology,

which shifts marginal cost downward from  $S_B$  to  $S_A$ .

At  $F$ , the ‘welfare loss from monopoly’ is  $(Q_A - Q_F)$ , which is usually taken relative to actual output,  $Q_F$ , but can also be taken relative to the potential maximum output,  $Q_A$ . The term  $(Q_A - Q_F)$  gives the loss of  $Q_A$  owing to the effects of market power, which raises  $P$ , while  $Q_F$  tells us how much of  $Q_A$  is left after this loss is deducted. Are there nations without rent seeking based on preferential treatment by government? Angelopoulos, Philappopoulos, and Vassilatos ([3], p. 280) mention Ireland and the Netherlands as the only countries in Europe where such rent seeking was essentially zero over 1980-2003.

## 2. The Role of Rent Seeking

The argument that monopoly welfare losses are small relative to national income led to efforts to uncover further costs of market power, and this is how rent seeking became the major part of this loss [20, 11, 16]. Before rent seeking, the monopoly welfare loss was basically a loss from producing a sub-optimal mix of goods. Suppose an economy consists of a competitive sector and a monopoly sector, each producing a kind of useful output. Then the monopoly sector supplies too little output because it restricts output below the competitive level in order to maximize profit. The competitive sector supplies too much output, since it is assumed to employ all resources not working in the monopoly sector. This lowers the monopoly welfare loss below what it would be if these resources remained unemployed or were wasted, as in the production of  $R$ .

Let  $V$  denote total rent. Since rent is desirable, people will compete for it, and this constitutes rent seeking. In this paper, they compete by supplying political support to a government and/or to one or more of its political opponents. Suppose the economy goes from  $F$  to  $B$  in Figure 1 by having all resources that were producing  $R$  moved to the production of  $Y$ , and by introducing marginal-cost pricing of  $Y$ , while keeping in place all the protectionist restrictions at  $F$ . As  $Q$  increases from  $Q_F$  to  $Q_B$ , the gain in surplus will be  $R_F$  + area  $FBL$ , where  $R_F$  is the value of  $R$  at  $F$ . If rent-seeking competition is perfect, this becomes area  $FBL$  plus the value of  $V$  at  $F$ , say  $V_F$ . Let  $G_F$  be the total profit from this rent seeking. Under perfect competition,  $G_F = 0$ , giving  $V_F = R_F + G_F = R_F$ .

This is the “full dissipation outcome,” which is assumed in most empirical studies of rent seeking. If  $G_F$  is positive, however,  $R_F$  will be lower than  $V_F$ . Why might this occur? A government supplies monopoly rights because it wants political support in return. This support can take many forms, including deception, monitoring, money, resources, voting, vote suppression, ghost voting, intimidation, persuasion, imprisonment, torture or assassination of political opponents, destruction of opposition parties or factions, etc. A government will use  $G$  to attract support to itself and to lower the support for political opponents.

However, let ‘insiders’ be those with a relatively high ability to provide political support in exchange for rent and

‘outsiders’ be those with a relatively low ability to do this. To gain support for itself and to lower the support of political opponents, a government transfers rent from outsiders to insiders—eg., by protecting insiders from competition, which gives them market power in setting product prices, or by taxing outsiders and using the proceeds to buy political support directly from insiders. If all potential insiders were perfect substitutes in supplying political support,  $G$  would be zero because insiders would have no bargaining power vis-à-vis government; it would be too easy to replace them.

But at least some insiders are likely to have no perfect substitutes since most support activities mentioned above require specialized skills. This gives bargaining power to insiders with the right skills and makes their loyalty valuable as a way of lowering the amount of  $G$  that a government must pay to get any given level of support. In this paper, one cannot assume full dissipation.

In addition, if rent is to have support value, a government must be able to target increases in  $V$  and in  $G$  to specific insiders who are good at supplying support. A government with no ability to target  $V$  or  $G$  cannot punish insiders who lower their support or reward insiders who raise theirs. But if a government targets rent and rent-seeking profit well enough, it can raise its support by redistributing income despite the inefficiencies from protectionism, rent seeking, and poor management to which this redistribution gives rise. See Lizzeri and Persico [14]. (Poor management is a problem since managers are chosen mainly for their ability to supply political support, rather than for their ability to manage.)

Carson ([5], pp. 557-565) assumes two basic sources of political support—wealth creation and wealth redistribution. The less ‘inclusive’ a political system is, the more its government will rely on redistribution and rent seeking for support and the less it will rely on wealth creation; for the specific definition of ‘inclusiveness’ used here, see Carson ([5], pp. 557-561). Thus, the greater will be the protection, as measured by  $V$ , from market competition and the more monopolistic the economy will be, in the sense that  $P$  will be higher. In addition, when inclusiveness is moderate to low, a government will rely for support on the loyalty of insiders, whose numbers are small relative to the size of the population. This suggests an autocracy or dictatorship, since the policies of this government are unfavorable to the bulk of the population, and consumer plus producer surplus, especially the former, is relatively low. Thus, a monopoly of political power goes hand-in-hand with monopoly in the marketplace.

A support-maximizing government will keep  $V$  relatively high when inclusiveness is low—assuming it can target successfully—and  $V$  relatively low when inclusiveness is high. When  $V$  is maximized,  $R$  and  $G$  will be maximized as well ([5]; pp. 563-565), and inclusiveness will be minimized at zero. All support then comes from insiders. The other extreme arises when  $V = 0$ ; then inclusiveness is maximized at one. Everyone becomes an outsider, and maximizing political support is the same as maximizing wealth creation, regardless of to whom this wealth goes. If inclusiveness takes

an intermediate value between zero and one, support will depend on both  $V$  and  $Y$ . The economy will have both competitive and monopoly elements, as well as production of political support in exchange for rent.

Finally, a government will try to change the political and economic systems in ways that raise its support. For example, suppose that a government is unable to target  $V$ , but that  $V$  is positive. Then this government can gain support if it can make the economy more competitive—causing  $V$  and  $G$  to fall—and the political system more inclusive. Likewise, if  $V$  is low, but a government has a high ability to target  $V$ —ie., to redistribute income to people with a high ability to supply political support, it can gain support by making the political system less inclusive and raising  $V$ .

### 3. The Welfare Loss

Rent seeking is hard to observe directly. As a result, it is measured through proxies, but often, only ‘crude’ proxies are available ([12], pp. 56-61). Thus, a precise estimate of the welfare loss from monopoly is beyond reach, and one must be content to find a credible lower bound for this loss. In order to be economical in the quest for such a boundary, several promising lines of approach in the literature are ignored here. These can be found in the references—notably, Acemoglu and Robinson [1], Cowling and Mueller [7], Laband and Sophocleus [12], Neumann [15], and Schmitz [18].

To begin with, three simplifying assumptions will be made: (a). The demand and supply curves of the economy whose monopoly welfare loss is sought are linear, as in Figure 1, between  $Q_F$  and  $Q_A$ . (b). Redistribution does not shift demand. Then, since the size of national income is the same, regardless of inclusiveness, changes in inclusiveness will not shift demand, and outcomes  $A$ ,  $B$ , and  $F$  all lie along a single demand curve,  $D$ . The elasticity of demand then equals one at  $A$ , since expenditure on  $Q$  reaches its maximum where  $R = 0$ . (Moreover, firms are competing for customers; there is no requirement for the demand elasticity to exceed one.) Above  $A$ , demand is elastic since with linearity, elasticity rises with  $P/Q$ . (c). Marginal cost is constant or rising in order to avoid problems that arise with non-convexities.

The loss of surplus from being at  $F$  rather than at  $A$  is the total surplus at  $A$  minus the total surplus at  $F$ . This equals area  $KILFBATE$  in Figure 1 plus the rent-seeking cost at  $F$ , or  $R_F$ . The lower is the inclusiveness of the political system at  $F$ , the higher up the demand curve  $F$  will be for given  $A$ , and thus the higher the monopoly welfare loss will be. This loss is given by  $(Q_A - Q_F)/Q_A$  or by  $(Q_A - Q_F)/Q_F$ , depending on the choice of base. This loss will be derived as a function of two costs—the social cost of rent seeking and the social cost of protectionism.

Because national income is the same, regardless of its division into  $Y$  and  $R$ ,  $P_B Q_B = P_F Q_F + R_F$  in Figure 1. As noted earlier, Laband and Sophocleus ([13], p. 271) estimated the cost of rent seeking to be 22.6% of GNP in the United States in 1985—an estimate that does not require full

dissipation of rent. As a result,  $R_F/(R_F + P_F Q_F) = .226$  or  $R_F/P_F Q_F = .292$ , since  $(R_F + P_F Q_F)$  equals national income in the present context. For Laband and Sophocleus, the key to getting an estimate of  $R_F$  was to proxy the level of rent seeking by looking at the number of practicing lawyers in the economy, since lawyers play a prominent role in rent seeking ([13], p. 271). Because  $R_F = .292 P_F Q_F$ , it follows that  $Q_B = 1.292(P_F/P_B)Q_F$  and  $(Q_B - Q_F) = Q_F[(P_F/P_B)(1.292) - 1] > .292 Q_F$  since  $P_F > P_B$ . Assuming that  $P_F = 1.1 P_B$ , which is consistent with elastic demand, it follows that  $(Q_B - Q_F) = .421 Q_F$ . Here the emphasis is on the gain from re-allocating resources to  $Y$ , where they are socially productive, and away from  $R$ , where they are socially unproductive.

Since  $R = 0$  at both  $Q_A$  and  $Q_B$ , one can write  $Q_A = T Q_B$  where  $T$  measures the technology advantage of  $Q_A$  over  $Q_B$ .

In going from  $B$  to  $A$ , technology will improve, owing to the removal of restrictions on investment and innovation, and  $(Q_A - Q_B)$  will rise. Moreover, as time goes by, this additional freedom will yield more and more technological improvement, so that  $(Q_A - Q_B)$  will tend to rise over time. A specific value for  $(Q_A - Q_B)$ , is gotten by comparing total factor productivity growth in the United States with that in West Germany over 1974-1990. *TFP* growth averaged 1.87% in West Germany vs. .56% in the United States ([8], p. 7) during that period, which includes 1985 and is book-ended by the end of the ‘economic miracle’ in 1974 and German Reunification in 1990. It could be considered a relatively normal time vs. what had gone before and what came afterward.

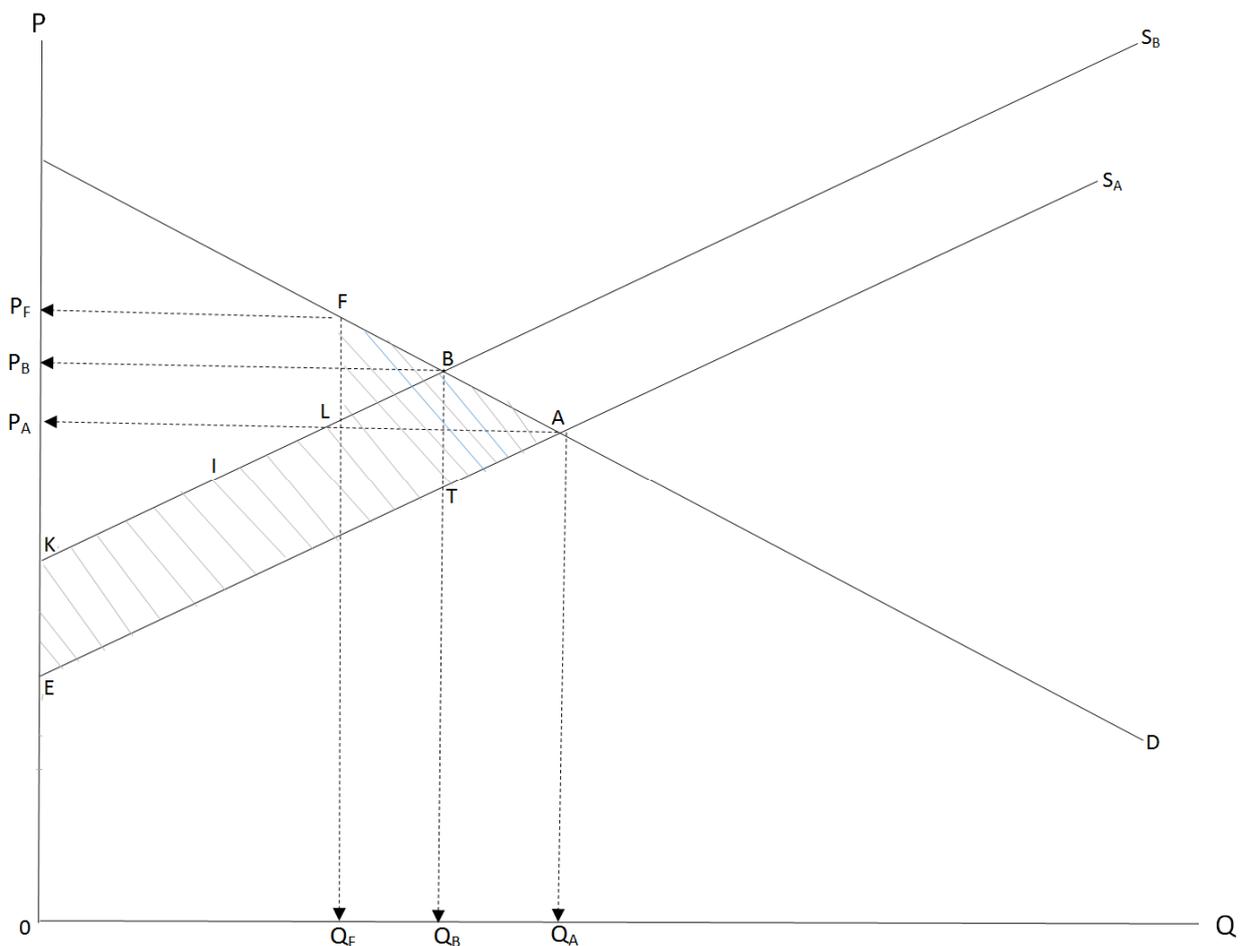


Figure 1. Three Outcomes: Competition at A, Competition with Investment Constraints at B, and Monopoly at F.

In this context, rent seeking was initially low when West Germany was founded in 1949. Witt ([21], p. 365) writes, “Still heavily influenced by their experience of the Great Depression and its mass unemployment and hardship, which had paved the way for the Nazis’ rise to power, the framers of Germany’s economic constitution considered a social ethos [to be] a moral imperative.” Subsequently, however, this imperative declined, and rent seeking rose, especially as a result of reunification.

Over 1974-1990, the average annual growth of total factor

productivity in West Germany exceeded that in the United States by about 1.3%, as noted above. Suppose that this growth disadvantage starts at zero and then lasts for 10 years in the economy whose monopoly welfare loss is being computed. Thus,  $T = (1.013)^{10} = 1.138$  when the 10-year period comes to an end. This is the result of slower growth and technological backwardness caused by protectionism, which increases over time as long as the monopoly persists and total factor productivity grows more slowly than under competition, owing to greater constraints on investment. In

order to calculate  $(Q_A - Q_B)$ , note that  $(Q_A - Q_B) = (T - 1)Q_B = .138Q_B = .138(1.421)Q_F = .196Q_F$ . Then:

$$(Q_A - Q_F) = (Q_A - Q_B) + (Q_B - Q_F) = .196Q_F + .421Q_F = .617Q_F = .382Q_A. \quad (1)$$

In the long run, the welfare loss from monopoly is more than 60% of actual output and more than a third of potential output.

Since more than one-third of  $Q_A$  is lost owing to monopoly, less than two-thirds remains. Because this is happening at the political support maximum, the resulting inefficiency can persist over the long run. However, it is possible that Laband and Sophocleus over-estimated rent seeking in the United States in 1985. Therefore, suppose that the cost of rent seeking is just 15% of GNP/GDP rather than 22.6%. Then  $R_F/(R_F + P_F Q_F) = .15$  or  $R_F/P_F Q_F = .176$  in the economy whose monopoly welfare loss is being estimated. Because  $R_F = .176P_F Q_F$ , it is also true that  $Q_B = 1.313Q_F$  and  $(Q_B - Q_F) = .313Q_F$ , which gives  $(Q_A - Q_F) = .509Q_F = .337Q_A$ . The monopoly welfare loss is still over half of  $Q_F$  and more than one third of  $Q_A$ .

Finally, at least for a time, a government with moderate to low inclusiveness may be able to avoid part of the monopoly welfare loss by turning entrepreneurship outward in export-led growth. Here, the economy is divided into a competitive sector, which accounts for most exports, and a protected sector, which supplies mainly the domestic market plus a major part of the government's political support. Potentially, this allows protection on the domestic market to become more compatible with entrepreneurship and high rates of investment and growth. However, this system is also prone to instability in the form of a tendency for the politically powerful protected sector to grow at the expense of the competitive sector. This limits both export capability and growth of GDP.

It also makes more attractive a program of boosting total factor productivity growth by copying targeted technologies that are new to the domestic economy, but already in use elsewhere. These technologies can help the competitive sector to achieve and expand export capability. If a government succeeds with such a program, it will have an opportunity to promote catch-up growth based on the technologies in question. In this way, copying technology can increase growth and total factor productivity, while lowering the monopoly welfare loss—at least for a time. Knowledge of the technologies in question is often protected, but copying them, legally or otherwise, can still be cheaper than inventing them and bringing products based on them to market for the first time.

However, programs aimed at copying technology often use supply restrictions, such as credit rationing, to ensure that firms in the program have low-cost access to key resources. These restrictions are a major barrier to the entry and expansion of small and medium-sized firms ([2], esp. pp. 50-54). In this way, a large program of technology copying can become a barrier to innovation, and at best, it allows a nation to stay technologically abreast of its competitors.

## 4. Conclusion

The actual 'welfare loss from monopoly' can be far above most conventional estimates. This is true even if one ignores the most obvious costs of political monopoly, such as the loss of civil liberties and human rights, as well as the welfare loss triangle that gives the traditional monopoly welfare loss. As outlined above, the bulk of this loss equals the cost of rent seeking plus the cost of protecting monopoly profit, which gives rise to technological backwardness and lower output. This cost can fall on insiders (or their descendants) as well as on outsiders—see Freeland ([9], pp. 277-286). A fallacy of composition is also present here. Protection from competition for just a few insiders can enrich them without lowering the economy's total factor productivity by much, but protection for all insiders will lead to stagnation of total factor productivity growth, unless this can be avoided by channeling entrepreneurship outward via export-led growth. In time, national income per capita could stagnate as well, since without rising *TFP*, a growing capital-to-labor ratio will cause the marginal product of capital to fall.

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