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The 'Welfare Loss from Monopoly' Re-visited

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Abstract: In the 1950s, economists claimed that the 'welfare loss from monopoly' in the United States was well below 1% of GNP. This led to the literature on rent seeking that argued for an additional loss equal to all or part of the economic profit. Here I identify a third loss in the form of suppression of innovation and entrepreneurship when this leads to a decrease in political support. This is most likely when a government depends heavily on 'insiders' for support. It results from a loss of rent on old technology plus the threat of an increase in political competition. It could easily be the largest loss of all.

JEL Classifications: D42, O30, P59.

Key Words: Efficiency, Inclusiveness, Political Support, Rent Seeking.

Introduction

This paper re-visits the 'welfare loss from monopoly,' a subject originally raised by A.C. Harberger, who tried to measure this loss in a paper published in 1954. As Harberger remarks [1954, p. 77], "this is not the kind of job one can do with great precision. The best we can hope for is to get a feeling for the general orders of magnitude that are involved." He then argued

that the 'welfare loss' from monopoly in the United States was less than 0.1 percent of GNP—see also Del Rosal [2011, pp. 298-99].

A welfare loss results in the first instance because the consumer surplus destroyed by raising a product's price above its competitive level exceeds the resulting gain in producer surplus. Thus, it is purely an efficiency measure. The basic approach is to divide an economy into two sectors of roughly equal output value—sector I operating under perfect competition and sector II operating under imperfect competition. In sector I firms price at marginal cost, whereas in sector II, firms take advantage of their market power to raise their prices above marginal cost; this is the source of the welfare loss.

Figure 1 therefore applies to sector II, whose demand curve is D and initial supply curve is S_B, which also measures the sector's marginal cost. The intersection of demand and supply at B gives the competitive price and quantity, P_B and Q_B. However, market power enables the equilibrium price to remain above marginal and average cost, say at P_F with quantity Q_F, so that this sector operates at F. The resulting deadweight loss equals the area of triangle FBL; a 'tiny' deadweight loss means that this area is tiny relative to the sum of output values (or values added) in the two sectors. In Figure 1, this would be roughly twice $P_F Q_F$.

The discovery of a tiny welfare loss led to efforts to uncover further costs of market power, which led in turn to the theory of rent seeking [Tullock 1967, Krueger 1974, Posner 1975]. According to this theory, firms will compete for rent, denoted by V, in the form of economic profit—or rent to a firm's market position—and incur costs in order to obtain this rent. Such rent seeking wastes resources since it does not produce a socially useful product. This waste will equal all or part of the economic profit, and if rent-seeking competition is

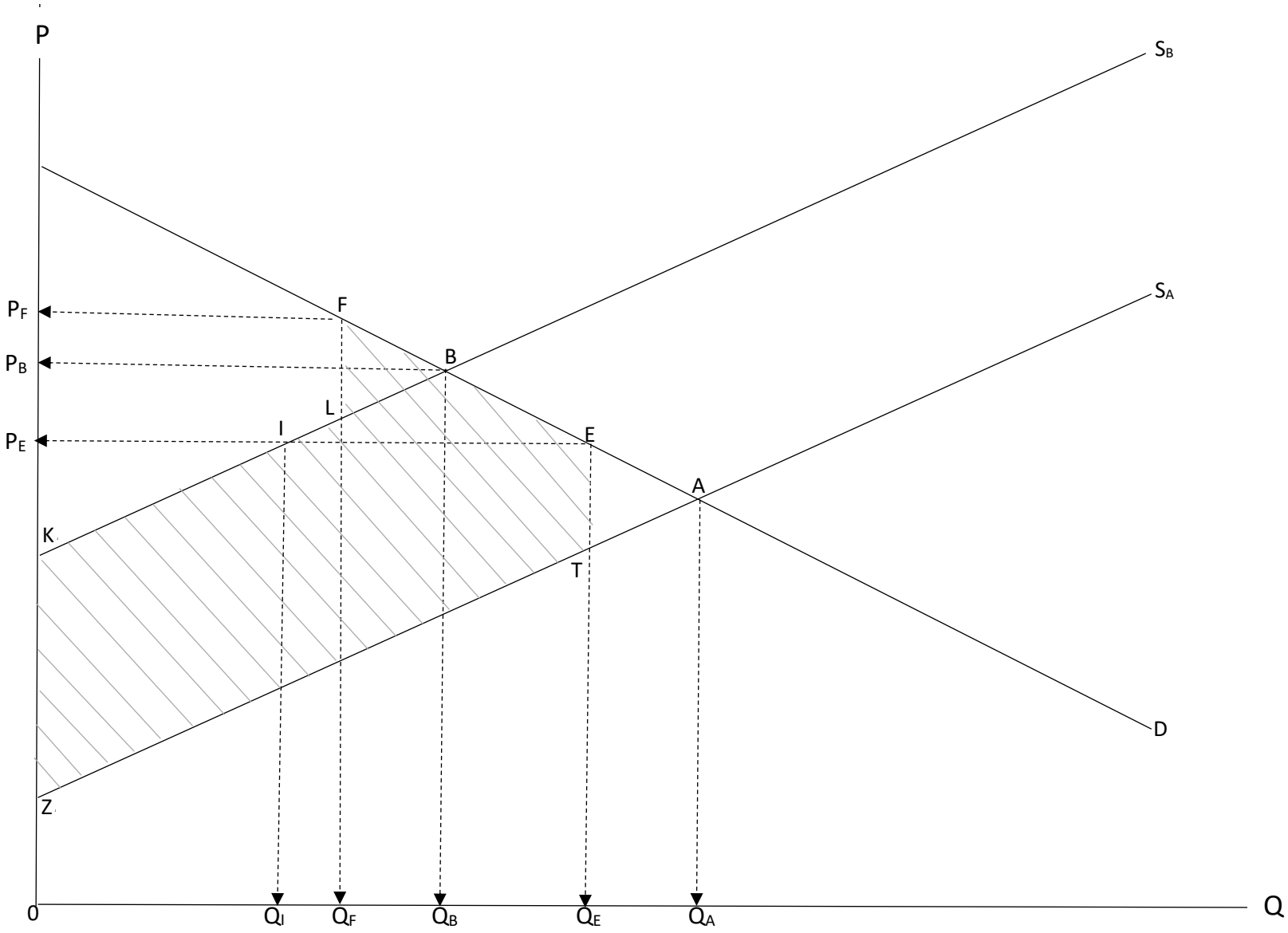

Figure 1

perfect, all of this profit will be wasted [Krueger 1974, Posner 1975]. If there are no fixed costs, the profit and waste in Figure 1 equals the producer surplus, which is the area under the price line, P_FF, and above the supply curve, S_B, between $Q = 0$ and $Q = Q_F$. Since fixed cost is rent to fixed factors of production, I shall assume for simplicity that this rent in sector II goes to the recipients of profits in this sector. Then we can again take *V* to be the producer surplus in sector II.

The total welfare loss is area P_FFBLIK, which is clearly larger than area FBL. But even if it is 10 times as large, the welfare loss would still be less than one percent of GNP, although it could be greater in a different economic and political system. In this context, rent-seeking competition is generally not perfect. Let *C* denote rent-seeking cost and *G* denote rent-seeking profit, so that $V = C + G$. Here *V* is also the gross rent and *G* is the net rent in sector II.

A government supplies monopoly rights because it wants something in return, namely political support. Political support can take many forms, depending on the nature of the political system, including money, resources, campaign rallies, monitoring of political opponents, delivery of votes, intimidation, and assassination or imprisonment of opponents or opposition parties or factions. Thus, different individuals are generally not perfect substitutes in supplying support, and a government facing any sort of political opposition will use *G* to attract support to itself. These considerations suggest that *G* will be positive when *V* is positive. Likewise, *C* will be positive if firms and their stakeholders compete for *V* by supplying political support. Such rent seeking represents an alternative use of resources to wealth creation. In Figure 1, *C* is all or part of area, P_FFLIK. The welfare loss from monopoly is *C* plus area FBL, which will be larger than area FBL alone.

To bring in the broader picture, I follow Carson [2020] in assuming two basic sources of political support—wealth or income creation and wealth or income redistribution. The 'inclusiveness' of a political system is measured by the share of wealth creation in support. 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. In relying on redistribution, it exploits differences in ability to supply support.

Let 'insiders' be those with a relatively high ability to provide political support and 'outsiders' be those with a relatively low ability. To gain support from redistribution and to lower the support of political opponents, a government transfers *V* from 'outsiders' to 'insiders'—eg., by giving insiders market power and/or by subsidizing insiders and taxing outsiders. In order to have support value, *V* must be targeted to specific insiders who are good at supplying support. Protection that is determined by other factors—such as standard copyright and patent laws—and cannot be targeted has no support value. A government that loses its ability to target *V* cannot punish insiders who lower their support or reward insiders who raise their support. Even if *V* is large, its support value will be zero. But if a government targets *V* effectively enough, it may be able to raise its support despite the inefficiencies from price distortions and rent seeking to which its redistribution gives rise. See Lizzeri and Persico [2001]. Such governments are gaining support by trading efficiency for targeting.

Provided governments can control the distribution of *V*, the less inclusive a political system is, the more a government will rely on insiders for support and the more likely there is to be a political monopoly of power [Carson 2020]. Political competition then takes the form of competition to be the monopolist. Also, the less inclusive a political system is, the greater will

be the support derived from rent seeking, and the greater will be the protection, as measured by V, from market competition. In this way, political monopoly translates into economic monopoly. A support-maximizing government will seek to keep V high when inclusiveness is low and GDP – V high when inclusiveness is high. The share of wealth creation in political support turns out to be the same as the share of outsiders, keeping in mind that outsiders lose from redistribution, but can gain from wealth creation.

For a political system that is maximally inclusive, $V = 0$ holds at the support maximum, and the distinction between insiders and outsiders vanishes. The more inclusive a political system is, the more efficient the associated economic system will be, and a government will try to change the political system in a way that raises its support. For example, suppose that a government is unable to control the distribution of V and that $V > 0$. Then this government can gain support by making the economy more competitive—causing GDP – V to rise—and changing the political system to raise inclusiveness.

Innovation

To bring innovation into the picture, suppose that supply curve S_A in Figure 1 results from a cluster of one or more related innovations that shift marginal cost downward from S_B. As a result, sectoral output supplied at any price increases from the amount read off supply curve S_B to the amount read off S_A. We can think of Q as indexing the services provided by the group of products to which the innovations apply rather than product quantities. Then improvements in product quality expand the supply of these services at any given price. This

allows us to consider innovations that raise product quality, as well as those that just reduce product cost.

Since sector II is imperfectly competitive, suppose that the post-innovation outcome is at E with price P_E and quantity Q_E, consisting of Q_I supplied by producers using the old technology and ($Q_E - Q_I$) supplied by producers using the new technology. If we ignore rent seeking, the net social gain from innovation is the gain to the innovator—the area between the two supply curves and under P_E between zero and Q_E, or area KIETZ in Figure 1—plus the gain to society other than the innovator—or the area of triangle BEI plus the area of triangle FBL. Area FBL plus area BEI gives the increase in consumer surplus over and above the loss of producer surplus by firms using the old technology, while area KIETZ gives the producer surplus gained by the innovator.

The total social gain from these innovations is therefore area FBL plus area BEI plus area KIETZ—or the shaded area KILFBETZ—plus any decrease in C when the economy moves from F to E. If $C = C_B$ before these innovations and $C = C_A$ afterward, the net social gain is area KILFBETZ plus $C_B - C_A$. This is also the social loss if the innovations are suppressed. In addition, new technologies will often have applications that are not foreseen when they first appear or will lead to other new technologies with unforeseen applications. Thus, the social gain, including these externalities, from innovation could be higher than area KILFBETZ plus $C_B - C_A$. In general, C may either rise or fall as a result of innovation.

Assuming it can target V, a support-maximizing government will use V, rather than consumer surplus, as its measure of the benefit from innovation when inclusiveness is low. Thus, it may discourage innovations with positive social gains, as defined above, and/or

encourage innovations with negative social gains. Because the sources, nature, and timing of innovation are hard to foresee, the best way a government can encourage it is by establishing the right environment—including market competition, well-developed financial markets, freedom from market and trade distortions, a strong educational system, and a good transportation and communications infrastructure plus some degree of patent and copyright protection.

A key question then is whether a government would want to establish an environment favorable to innovation and to entrepreneurship more generally as part of its political support maximization, and the answer depends on the nature of the political system. Such an environment is compatible with maximizing wealth creation, which is a goal when inclusiveness is high. If inclusiveness is low, however, support comes mainly from insiders, and the key success indicator in maximizing support is *V*. A problem then is that innovation increases competitive pressures on prior rents, whose survival requires protection from such competition. Thus, innovation may lower political support by lowering *V*. Indeed, if consumers and innovators are outsiders and producers using old technology are insiders, the cluster of innovations whose effects are depicted in Figure 1 must be support decreasing. This is because innovation leads to a loss of producer surplus on old technology equal to part of area P_FFLIP_E.

It is plausible, moreover, that most consumers and innovators would be outsiders and that most producers using old technology would be insiders. Insiders are the ones receiving protection from competition, but they are generally a small percentage of the population and are chosen for their ability to supply political support in return for rent. They are not selected for administrative, managerial, and entrepreneurial skill—or for their willingness to take on

business risk—except insofar as these make them better suppliers of support. Even if the innovators are insiders, the cluster of innovations whose effects are shown in Figure 1 will be support decreasing if the support lost because of the loss of area P_FFLIP_E in producer surplus exceeds the support gained from acquiring area KIETZ. A cluster of innovations may either raise or lower total producer surplus and thus *V*. In the former case, area KIETZ is larger than area P_FFLIP_E, while in the latter area P_FFLIP_E is larger.

Even if area KIETZ is larger, however, and the innovators are insiders, innovation may be support decreasing. The political support gained from area KIETZ could even be negative since the accumulation of wealth from innovation and entrepreneurship could finance a political opposition. Even if this does not happen, a government's ability to control the distribution of *V* has a support value, as we have seen. Maintaining an environment favorable to innovation and to entrepreneurship more generally causes some loss of this ability since incomes will come to depend at least partly on ability to create wealth rather than on ability to supply political support in return for rent. Thus, even if an environment unfavorable to innovation gives rise to lower rents, it may still have a higher support value if it allows better targeting of rents in return for support.

When support maximization leads to suppression of innovation and preservation of the outcome at F, the welfare loss from both political and economic monopoly equals area KILFBETZ plus $C_B - C_A$ plus any loss owing to failure to realize the positive externalities described above. We could add area EAT to this welfare loss—since E represents an imperfectly competitive outcome—causing it to become area KILFBEATZ plus the other terms above. However, Schumpeter [1950] famously argued that innovation required imperfect competition,

since perfect competitors are too small and insecure. This would preclude adding area EAT, since a solution at A would be unattainable. The Schumpeterian hypothesis has been challenged [eg., Symeonidis 1996], and the empirical evidence appears to be inconclusive. Of course, government protection of monopoly power and profit can also deter innovation by giving large firms low-risk access to profit. Thus, if outsiders who are innovators become insiders, as in Freeland [2012, pp. 277-286], this is likely to deter future innovation. Either area KILFBEATZ or area KILFBETZ is potentially many times as large as area FBL.

While it is hard for a government to foresee and thus to manage innovation, it can more easily manage a program of copying technology—using both legal and extra-legal means—that is new to the domestic economy, but already in use or under development elsewhere. If a government can gain access to such technologies, it will have opportunities to promote growth based on them. The technologies in question are often protected, although developed economies sometimes allow relatively easy access to less developed countries. Whether protected or not, copying technologies may be less costly than inventing them and bringing products based on them to market for the first time. This is especially true if the economy in question has another advantage, such as a large domestic market or a low-cost factor of production, like labor or human capital, which these technologies require.

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 are a major barrier to the entry and expansion of small and medium-sized firms [Aghion, Harmgart, and Weisshaar, 2008, esp. pp. 50-54]. Thus, a strong program of technology copying may be harmful to innovation. At best, it allows a nation to keep up technologically, with some lag, and

it too threatens rents on older technologies. Thus, managing such a program so that it increases political support will likely include efforts to turn entrepreneurship outward in export-led growth, in order to allow for more protectionism at home.

The welfare loss from monopoly can therefore be large, even if we ignore the most obvious costs of political monopoly, such as loss of civil liberties and human rights. When innovation is suppressed, moreover, the cost of protectionism in the form of technological backwardness and lower output falls on insiders (or their descendants) as well as on outsiders—for an example, see Freeland [2012, pp. 277-286]. A fallacy of composition is involved here. Protection against competition from innovation for just a few insiders may not lower the economy's total factor productivity growth more than marginally, but protection for all insiders could lead to total factor productivity stagnation. Over a decade, the welfare loss from such stagnation could easily reach 20-25% or more of GDP and cause GDP per capita to stagnate, as a rising capital-to-labor ratio causes the marginal product of capital to fall.

Note:

*I am indebted to Sarah Aboul-Magd for drawing the diagram.

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