CEWP 20-13

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August 2020; revised June 21 2021

CARLETON ECONOMICS WORKING PAPERS

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Abstract: In a 1954 paper, A.C. Harberger claimed that the welfare loss from monopoly in U.S. manufacturing was less than .1% of national income over 1924-1928. This and subsequent claims of low monopoly welfare loss led to a backlash that argued for a second, rent-seeking loss equal to part or all of the economic profit. These cases assumed a passive role for government. In this paper, I assume an active role in which a government maximizes its 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 mainly the social cost of rent seeking plus the social cost of protectionism, or of measures that protect existing profits by restricting investment that would increase competition in markets where these profits are earned. Protectionist measures lower innovation and technological progress, but can still be a good source of political support. This gives an explanation for the persistence of inefficiency and of large differences in total factor productivity between nations.

JEL Classifications: Monopoly (D42); General Welfare (D60); Other Welfare (D69).

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

Introduction

This paper re-visits the 'welfare loss from monopoly,' a subject first raised by A.C. Harberger [Harberger 1954], 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, have been the maximum gain from re-allocating resources within manufacturing to eliminate the misallocation caused by the monopoly [Harberger, 1954, pp. 81-82].

Later, Schwartzman [1960], Worcester [1975], and Carson [1975] reinforced Harberger's claim. It was challenged 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 [1973], who used a general equilibrium model in place of the partial equilibrium approaches of other authors. (Here Carson and Worcester were commenting on Bergson's paper.)

Later, Cowling and Mueller [1978] described several omissions (notably advertising) in earlier papers whose inclusion would have raised welfare loss estimates. In addition, Rhoades [1982] 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. Laband and Sophocleus [1988] found a welfare loss from "legal/political rent seeking" equal to 22.6% of GNP in the United States in 1985. Here rent is an economic return to political activities reflecting a rent seeker's ability to obtain preferential treatment from government. Finally, Neumann [1999] analyzed the effect of monopoly on growth, finding that this was negative and 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 to the welfare loss when we explicitly model government as a maximizer of political support, as in Carson [2020]. The welfare loss then depends on how a support-maximizing government obtains its support, which depends on the nature of the political system and, in particular, on how inclusive it is. As in Acemoglu and Robinson [2012], low inclusiveness goes hand-in-hand with protection of profit by suppressing market competition, which shifts resources to competition for rent. 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 much higher

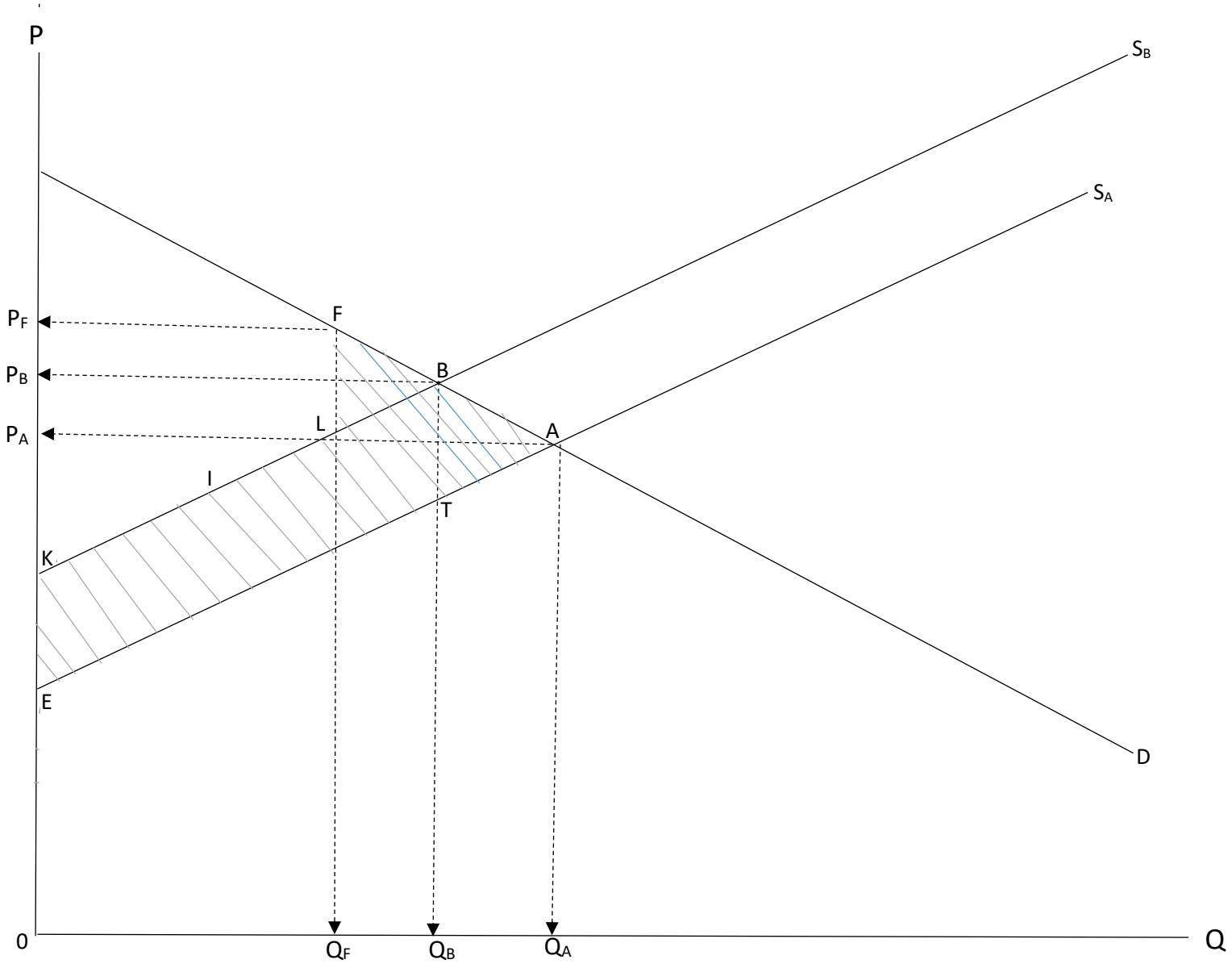

Figure 1

than in Harberger, Schwartzman, Carson [1975], or Worcester because of greater rent seeking and/or lower rates of investment, innovation, and technological progress.

To investigate this, I assume an economy with the same two aggregate products as in Carson [2020]. 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. "Only Y can yield utility from present or future consumption, the way in which useful output is 'useful'" [Carson, 2020, p. 559]. Production of political support for one candidate at the expense of another, which uses resources to redistribute wealth but does not create any new wealth, is social waste, and this therefore applies to R. I take R as numeraire and P and Q as the price and quantity of Y in units of R. National income in units of R is then $PQ + R$. 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. 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 assumed to be at F. If the economy is competitive, the outcome is at A, where R equals zero—Angelopoulos, Philappopoulos, and Vassilatos [2009, p. 280] mention Ireland and the Netherlands as countries where rent seeking based on preferential treatment by government was essentially zero over 1980-2003. At F, a 'deadweight' loss equal to the area of triangle FBL arises because the consumer surplus destroyed by keeping P above P_B exceeds the resulting gain in producer surplus. The social optimum is where total consumer plus producer surplus is maximized. This occurs at A. The 'welfare loss from monopoly' at any other point is the percentage loss of surplus from that available at A. At F, this loss is $(Q_A - Q_F)/Q_A$ if we use the potential maximum as our base or $(Q_A - Q_F)/Q_F$ if we use the actual outcome as our base. The term, $(Q_A - Q_F)$, gives the loss of Q_A owing to the effects of market power, while Q_F tells us how much of Q_A is left after this loss is deducted. We also note that $Q_A - Q_F = (Q_A - Q_B) + (Q_B - Q_F)$.

Rent Seeking and Political Support

The argument that monopoly welfare losses are small relative to national income 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]. Its premise is that firms and individuals will compete for rent, whose economy-wide value is V. In this paper, they compete by supplying political support to a government and/or to one or more of its political opponents. Suppose we go from F to B in Figure 1 by moving all resources that were producing R to the production of Y, while requiring marginal-cost pricing of Y and keeping in place all the restrictions used to protect existing profits at F. As Q increases from Q_F to Q_B, the gain in surplus is R_F + area FBL. 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 equals zero, giving $V_F = R_F + G_F = R_F$.

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, vote suppression, ghost voting, intimidation, persuasion, imprisonment, torture or assassination of political opponents, destruction of opposition parties or factions, etc. A government facing any sort of political opposition will use G to attract support to itself and to lower the support for political opponents. It uses a positive R to generate political support from rent creation and a positive G to claim that support for itself.

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-a-vis government. 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 size of *G* that a government must pay to get any given level of support.

In addition, if rent is to have support value, a government must be able to target changes in rent and in rent-seeking profit to specific insiders who are good at supplying support. Protection that cannot be targeted has no support value. A government with no ability to target *V* cannot punish insiders who lower their support or reward insiders who raise theirs. But if a government targets rent and rent-seeking profit or protection 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 [2001]. (Poor management is a potential problem since managers are selected primarily for their ability to supply political support, rather than for their ability to manage.)

The policies of any government toward investment and innovation depend on what maximizes its political support. Carson [2020, pp. 557-565] assumes two basic sources of 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 [2020, 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 addition, when inclusiveness is low, a government will rely on the loyalty of a base of support that is usually small relative to the population, but many of whose members have a strong and visible commitment to this government. Thus, in order to attract insider support, the expected life of government should be relatively long. This implies a monopoly of political power to go 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 $[(PQ + R) - V] = (PQ - G)$ relatively high when inclusiveness is high. When *V* is

maximized, *R* and *G* will be maximized as well [Carson 2020; pp. 563-565], and inclusiveness will be minimized at zero. All support then comes from insiders. By contrast, when $V = 0$, inclusiveness will be 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 ($PQ - G$) to rise—and making the political system more inclusive. Likewise, if *V* is low, but a government has a high ability 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*.

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 [Laband and Sophocleus, 2019, pp. 56-61]. Thus, we cannot expect to get a precise estimate of the welfare loss from monopoly, and we try only for a credible lower bound to this loss. We begin with three simplifying assumptions: (a). The demand and supply curves of the economy at *F* whose monopoly welfare loss we seek to find are linear, as in Figure 1, except possibly below *A* along the demand curve. Here no outcome can occur, however, since it would require more resources than are available. (b). Redistribution does not shift demand. Thus, if the size of a unit of *R* is fixed, regardless of inclusiveness, changes in inclusiveness will not shift demand. The elasticity of demand then equals one at *A*, since expenditure on *Q* reaches its maximum there. (Moreover, firms are competing for customers; there is no

requirement for 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.

As noted earlier, when firms have monopoly power in Figure 1, the equilibrium price and quantity supplied of *Y* are at *F*. In this sense, *F* is the 'monopoly alternative,' whereas *A* is the 'competitive alternative.' 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. Area KILFBATE plus R_F is therefore the welfare loss from monopoly. The lower is inclusiveness at *F*, the higher up the demand curve *F* will be for given *A*, and thus the higher the monopoly welfare loss will be. We recall that this loss is given by $(Q_A - Q_F)/Q_A$ or by $(Q_A - Q_F)/Q_F$, depending on what we use as our base. The key piece of information we need is Q_F/Q_A, which we shall derive as a function of two costs—the social cost of rent seeking and the social cost of protectionism or of protecting existing profits from competition via measures that restrict investment.

Because GNP and GDP remain constant along the demand curve in Figure 1, $P_BQ_B = P_FQ_F + R_F$. We recall that Laband and Sophocleus [1988, p. 271] estimated the cost of rent seeking to be 22.6% of GNP in the United States in 1985. We shall assume this to be true of the economy whose monopoly welfare loss we seek. As a result, $R_F/(R_F + P_FQ_F) = .226$ or $R_F/P_FQ_F = .292$, since $(R_F + P_FQ_F)$ equals GNP or GDP in the present context—we do not distinguish between these two. 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 [Laband and Sophocleus, 1988, p.271]. Because $R_F = .292P_FQ_F$, we have $Q_B = 1.292(P_F/P_B)Q_F$ and $(Q_B - Q_F) = Q_F[(P_F/P_B)(1.292) - 1] > .292Q_F$ since $P_F > P_B$. If we assume that $P_F = 1.1P_B$, which is consistent with elastic demand, then $(Q_B - Q_F) = .421Q_F$. Here we focus on the gain from re-allocating resources to *Y*, where they are socially productive, and away from *R*, where they are socially unproductive, while ignoring the welfare loss triangle.

Over time, $(Q_A - Q_B)$ will rise, owing to the higher total factor productivity growth of *Y* at *A* than at *B*. (Investment and innovation at *B* are subject to the same restrictions as at *F*.) To get a value for $(Q_A - Q_B)$, I

assume that for at least 10 years, total factor productivity growth of *Y* at *A* has been 1% or more faster per year than at *F*. This implies that, by the end of this period, Q_A is more than 10% greater than Q_B if they started from the same level. In fact, suppose that $(Q_A - Q_B)$ is increasing over time from zero. Then unless stagnation sets in or inclusiveness changes or the economy receives a demand or supply shock of some kind, a time must come when Q_A is 10% greater than Q_B. This gives a lower bound for $(Q_A - Q_B)$ going forward from that time. A range of possible values for $(Q_A - Q_B)$ will be available, depending on how much time is allowed for them to grow apart. In order to calculate the lower bound for $(Q_A - Q_B)$ in our example, we note that since $Q_A > 1.1Q_B = ((1.1)(1.421)Q_F = 1.563Q_F$, we have $Q_F < .64Q_A$. More than one-third of Q_A is lost owing to monopoly, so that less than two-thirds remains. This welfare loss is also more than half of Q_F. Since this is happening at the political support maximum, the resulting inefficiency can persist.

West Germany over 1974-1990 is an example of an economy with a higher total factor productivity growth than the U.S. over the same period and, apparently, a lower level of rent seeking as a share of GNP, although several caveats apply to the latter claim. The period in question is book-ended by the West German 'economic miracle' and German reunification. Over it, *TFP* growth averaged 1.87% per year in West Germany vs. .56% per year in the United States [Crafts and Woltjer, p. 7]. Over 1980-2003, rents available in West Germany as a result of preferential treatment by government were 10% of GDP [Angelopoulos, Philappopoulos, and Vassilatos, 2009, p. 280]. These appear to be similar to the "legal/political rents" estimated by Laband and Sophocleus, but could constitute a narrower concept of rent. Also the methodology used by Angelopoulos et. al. is quite different than that used by Laband and Sophocleus, and 1985 may not have been a typical year for the period, 1974-1990, where rent seeking in the United States is concerned.

On the other hand, rent seeking over 1980-2003 is likely to have been no lower in West Germany/united Germany as a share of GDP than it was over 1974-1990 in West Germany since rent seeking has tended to rise as a share of GNP or GDP in the Federal Republic since the economic miracle came to an end. Rent seeking was initially low when West Germany was founded in 1949. Witt [2002, 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 in the face of new threats to the welfare of some special interests and new opportunities for others to improve their lot. In particular, the first energy crisis brought the economic miracle to an end and turned a shortage of labor—together with many foreign or 'guest' workers—into a shortage of jobs. Later, after reunification, rent seeking rose sharply as West Germans sought to preserve their job rights and other economic advantages in the face of potential competition from the poorer East Germans, and the latter took advantage of their new-found political power to gain large subsidies [Angelopoulos, et. al., 2009, pp. 280;288].

Finally, at least for a time, a government with low inclusiveness may be able to avoid part of the potential monopoly welfare loss by turning entrepreneurship outward in export-led growth. Here, the economy becomes 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 when inclusiveness is moderate to low. However, this system is also prone to instability. There is a potential 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 easier 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 [Aghion, Harmgart, and Weisshaar, 2008, 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.

Conclusion

The actual 'welfare loss from monopoly,' defined as the total loss of consumer and producer surplus that results from market power, can be far above most conventional estimates. This is true even if we ignore 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 protectionism, 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 [2012, 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.

Note:

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

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