Destructive Creativity

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Abstract

Destructive creativity implies that parasites become more efficient in rent extraction. We focus on destructive creativity in situations where parasites live on rents extracted from the producers. A higher parasitic strength implies that the waste associated with rent seeking increases, and in the long run erodes business productivity, implying that the sustainability of predation is threatened by improved efficiency.

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"It is often assumed that an economy of private enterprise has an automatic bias towards innovation, but this is not so. It has a bias only towards profit. It will revolutionise manufactures only if greater profits are to be made in this way than otherwise. (Hobsbawm, 1968 p.40).

The drive to create new profitable sources of income that are not beneficial to society can be denoted destructive creativity. In this paper we are concerned with privately profitable innovations that imply lower social efficiency. One example of such creativity is firms' profit motivated sabotage of their competitors, as studied by Veblen (1923). Another example is the struggle to achieve an artificial monopoly position. According to Posner (1975) an important, but often ignored, social cost of monopolies is the resources wasted in the competition to obtain the privileged monopoly position. Bhagwati (1982) provides a taxonomy of "Directly Unproductive Profit-Seeking Activities"which includes the approach of Tullock (1967) that points to the similarity between theft and monopoly rents. All these examples are in contrast to the Schumpeterian process of creative destruction where the monopoly positions that entrepreneurs achieve are temporary and grounded in superior technologies.

Destructive innovations take many forms. For instance, the recent transition in Russia has not only generated new markets, but also new opportunities for creative criminals in the form of extortion, contract enforcement and "protection". The result is that the growth of the productive sector is hampered both by the "business taxes" imposed by mafia-like organizations and by the rise in protection expenses. In 1994 criminal gangs controlled 40.000 Russian businesses (Campos 2000). Similar parasitic activities can be found in countries like Colombia, Indonesia, Nigeria and

Zimbabwe, not to mention the extremely violent experiences in Sierra Leone and Liberia. Entrepreneurs who specialize in violence are inventive. In Colombia and Nigeria, for instance, employees in the oil industry are regularly kidnapped by violent entrepreneurs and released for a ransom. Rebels also extort the oil companies by threatening to blow up their pipelines. According to the Economist(2003) "Ransom insurance, now available, has the effect of raising ransom demands, and so increases the profits to be made from violence".

In this paper we focus on destructive creativity in situations where parasites live on rents extracted from the producers. Creative innovation then implies that the parasites' strength in rent extraction increases. Does this increase in parasitic strength imply that the waste associated with rent seeking declines? Or, does higher parasitic strength in the long run erode business productivity, implying that the sustainability of predation is threatened by its improved efficiency?

To explore these questions, we start out from the premises that producers and parasites are recruited from the same pool of entrepreneurs. In this respect our approach is similar to the seminal papers on the misallocation of talent to unproductive activities by Usher (1987), Baumol (1990), Murphy, Shleifer, and Vishny (1991 and 1993), and Acemoglu (1995).[1]

1 Improving the means of production and the means of destruction

We are interested in rent-seeking activities that are directed towards private businesses in the absence that efficient protection of private property rights. This type

[1] See also Andvig (1997), Konrad and Skaperdas (1998), Grossman (1998), Chand and Moene (1999), Baland and Francois (2000), Torvik (2001), Mehlum, Moene, and Torvik (2003).

of parasitic rent appropriation is different from regular rent-seeking where the target is an active state. While regular rent seeking distort political decisions by wasteful influence activities, parasitic rent appropriation challenges the state's monopoly of taxation, protection and legitimate violence. Rent appropriation includes socially harmful and destructive behaviors such as extortion, robbery and warfare.

A positive development requires that these destructive activities does not escalate. Entrepreneurs must find it profitable to create rather than to destroy. The Schumpeterian process of Creative Destruction is clearly more creative than destructive in the sense that modern modes of production replace the traditional and total productivity goes up. As Schumpeter emphasized the process "incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one." (1942, p 83). While the process of creative destruction is productive, the process of destructive creativity is destructive as it erodes the profitability of productive behavior.

Both processes consist of a repeated four-stage interaction: Stimuli, adaptation, consequences, and finally reinforcement of the stimuli. In the case of creative destruction the circle is as follows: The stimuli can be the opening up of new opportunities such as new technologies, new products, or new markets. The adaptation comes from the pressure of dynamic competition. Those enterprises that do not innovate loose their market, and their profits decline before they finally become obsolete. Consequently, innovating firms have an edge over their competitors. The more the competitors innovate; the stronger the pressure to search for new opportunities, and the stimuli are reinforced implying a growth enhancing development.

In the case of destructive creativity the circle may be as follows: The stimuli can

be a breakdown of law and order, generating new opportunities of extracting rents without producing. Adaptation takes the form of misallocation of entrepreneurial efforts into unproductive rent extraction and into protective measures against theft and extortion. Rent extraction is a strategic substitute for productive activities. The more rents that can be extracted the lower the profitability of producing, and the more tempting it is to search for new opportunities of rent extraction. Again the stimuli are reinforced implying a stagnant or contracting development.

Thus, improved opportunities of rent extraction leads to higher profits to parasites on the expense of the producers. I the short run hampers productive investments. In the longer run the profit differential induces a reallocation of entrepreneurs away from production. As production declines and congestion among parasites sets in, both parasites and producers lose profits. Hence, in the long run improving the means of rent extraction may be a loss even for the parasites.

In some countries destructive and productive forces are present simultaneously implying an implicit race between them. When productivity growth dominates the circle of destructive creativity may be reversed as profits in productive activities exceed profits in rent extraction. In this case the long run effect is a movement of entrepreneurs from parasitic activities to production implying higher profits for both producers and parasites. Our main point is this asymmetry between creativity on the side of producers versus creativity on the side of parasites. More efficient parasites hurts all–even the parasites. More efficient producers benefits all–also the parasites.

In order to make these statements more precise we illustrate the important mechanism -the process of destructive creativity- within a model that is kept as simple as

possible. The model is a simplification of Mehlum, Moene, and Torvik (2003) and is essentially the basic model of Murphy, Shleifer and Vishny (1993).

2 An illustration

In this example there is a number of entrepreneurs n. A fraction α of these entrepreneurs are producers, while the remaining fraction $(1-\alpha)$ are parasites. Each producer produce a quantity of goods y with a profit margin γ. Profits for the producers, before predation is taken into account, are therefore

$$\pi = \gamma y \tag{1}$$

The parasites feeds on the producers in many ways. In the case when a producer is approached by a parasitic enterprise, it has to pay a share ϕy as extortion money. The extortion share ϕ is determined by the strength of producers relative to parasites. When self defense is expensive, the value of ϕ is high. If the target is insured against extortion, like oil companies in Nigeria and Colombia, the effective extortion share ϕ will be even higher.

The probability of being approached by a parasite is denoted by μ. The expected profits net of protection money is thus given by

$$\pi_A = \pi - \mu\phi y = (\gamma - \mu\phi)\, y \tag{2}$$

The probability μ is equal to the number of extortion cases x divided by the number of productive firms αn. As in other matching processes x depends on the fraction of productive firms α relative to the fraction of parasites $(1-\alpha)$. At each point in

time each parasitic enterprise approaches only one productive firm. Assuming full information and no friction, x is then the lowest of αn and $(1-\alpha)\,n$. The probability of being approached $\mu = x/(\alpha n)$ simply becomes

$$\mu = \min[m, 1],\ m = (1-\alpha)/\alpha \tag{3}$$

where m is the predation intensity in the economy.

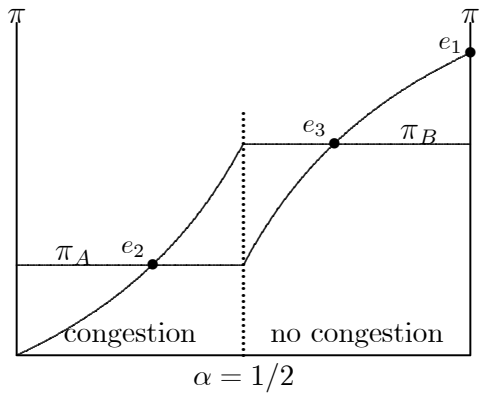
The parasite who is first to approach a productive firm is able to collect the protection money. The probability of being the first is equal to the number of extortion cases x divided by the number of parasites $(1-\alpha)\,n$. This probability can be expressed as μ/m. The expected profits to a parasite can now be defined as

$$\pi_B = \frac{\mu}{m}\phi y \tag{4}$$

When m is less than one there is no congestion among the parasites, $\mu/m = 1$ and each parasite can extort its productive firm without competition. When m is larger than one, however, congestion sets in, and π_B goes to zero as m goes to infinity. When there are more parasitic enterprises than productive firms, some productive firms are approached by more than one parasite. In that case the protection becomes effective and more protection money need not be paid. We assume in (4) that when some parasites end up in conflict with others they do not waste resources in this conflict. Combining (2) and (4) it follows that

$$\pi\alpha = \pi_A\alpha + \pi_B(1-\alpha) \tag{5}$$

Figure 1: A predation trap



Hence, the gross profits are distributed to productive and parasitic entrepreneurs without any loss.

What are the possible equilibrium allocations of a given number of entrepreneurs and what are the conditions for the existence of a development trap caused by predation? To answer these questions observe that a feasible equilibrium implies an allocation of entrepreneurs such that either profits are the same in both activities or that the activity with all the entrepreneurs has the highest profits

$$\pi_A = \pi_B \text{ and } \alpha \in [0,1] \tag{6}$$

$$\pi_A > \pi_B \text{ and } \alpha = 1 \tag{7}$$

$$\pi_A < \pi_B \text{ and } \alpha = 0 \tag{8}$$

To describe these equilibria we draw the profit curves (2) and (4) as in Figure 1 where the width of the diagram is one. The fraction of producers α is measured from left to right while the fraction of parasites $(1-\alpha)$ is measured from right to left. Let us start from the left where there is congestion among the parasites. With only one productive firm and $n-1$ parasitic enterprises, the predation intensity m is

high and the producer is approached with certainty ($\mu = 1$). As long as $\phi < \gamma$ profits to the productive firm is positive. Due to the high predation intensity profits to the parasitic enterprises are approximately zero. As the fraction of productive firms increases and the fraction of parasitic enterprises declines profits increase for the parasites while profits in production is stable, as the congestion among the parasites gets less severe. This holds as long as there is congestion. When α gets above 1/2 there is no longer congestion among parasites. From this point and onwards the profit curve of the parasites levels out. For the producers, however, the profit curve increases as μ, the probability of being approached, starts to decline in tandem with the predation intensity m. In Figure 1 the profit curves π_A and π_B intersect twice. The condition for the curves to cross twice is that $\pi_A < \pi_B$ in the point where $\alpha = 1/2$, and $\mu = m = 1$. At this point the producers are sure to be extorted and the parasites are sure to be paid extortion money. From (2) and (4) it is evident that the condition is

$$\phi > \gamma/2 \tag{9}$$

When the curves cross twice (6) is satisfied in the two points e_2 and e_3 while condition (7) is satisfied at e_1. By assuming that entrepreneurs flow to the most profitable activity e_1 and e_2 are locally stable equilibrium points while e_3 is an unstable tipping point. If the economy starts out to the right of e_3, it ends up at the equilibrium point e_1. If the economy starts out to the left of e_3 it ends up at e_2. The level of production is lower at e_2 than at e_1 and we denote the equilibrium point e_2 a predation trap.

At the equilibrium point e_2 the condition (6) holds and there is congestion among the parasites, $m > 1$ and producers are approached with certainty ($\mu = 1$). Insert-

ing $\mu = 1$ in (2) gives us the following expression for the common profit at the equilibrium point e_2

$$\pi_A = \pi_B = (\gamma - \phi)\, y \tag{10}$$

From (10) it follows that at e_2 profits in both activities declines when the extortion share, ϕ, increases or when the profit margin γ decreases. Hence we have

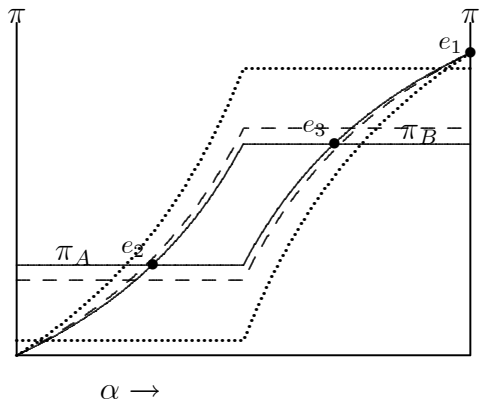
Proposition 1 *In the parasitic trap improved efficiency in extortion, ϕ up, reduces profitability both in production and extortion. Improved efficiency in production, γ up, increases profitability in both activities.*

It may be counter-intuitive that a higher extortion share implies lower profits to parasitic enterprises. The reason is that a higher extortion share ϕ lowers profits from production relative to predation, inducing entrepreneurs to move from production to predation. Hence, production increases and profits to each producer go up. The number of parasites grows at the expense of producers until profits from parasitic activities become as low as in production. *Whatever benefits the thief harms both the producer and the thief*, which is a corollary of the result in Usher (1987).

The second part of the proposition is less surprising. It simply states that improved margins in production leaves a larger profit to the producers. Such an efficiency improvement induces a shift of entrepreneurs from predation to production.

The first part of the proposition is illustrated in Figure 2. Here the dashed lines illustrates the effect on π_A and π_B of a marginal increase in ϕ. In the parasitic trap the effect is a drop in the equilibrium profit. In the full production equilibrium a marginal increase in ϕ has no effect as there is no parasitic activity in that equilibrium. However, as the dotted lines illustrates, a large increase,so that ϕ get close to

Figure 2: Destructive creativity I



γ may have an impact also for the good equilibrium. When ϕ gets close the γ the profits from being a parasite are almost as high as the profits from being a producer. In that case the stability of the good equilibrium becomes fragile as the tipping point moves close to the equilibrium point. The equilibrium is still locally stable, but a slight shock to the number of parasites may move the economy beyond the tipping point. Then a dramatic process will start where the economy tumbles all the way down to the parasitic trap. In accordance with the Proposition, the parasitic trap will be a particularly bad equilibrium when ϕ is high. The reason is that it is relatively more attractive to be a parasite when ϕ is large. Therefore, in this case m must be high in order to bring equilibrium between the profits of production and the profits from being a parasite. Hence, when $\phi \approx \gamma$, profits are low and α is low in the parasitic trap.

3 Concluding remarks on natural resource rents

The main point that we want to stress is the following asymmetry: While more efficient producers raise income both for producers and parasites, more efficient parasites lower the income for both. It follows from this that all incentives for pro-

ductive entrepreneurship in the end may be eroded if the capacity of rent extraction gets too high. In that case the sustainability of a parasitic society is only possible if the parasites get income from other sources. In some of the most parasitic societies this is indeed the case. Important sources of income are natural resources or the inflow of aid. Other sources may be from activities like plundering of unprotected areas or trafficking in drugs, weapons, precious stones etc.

When such sources of income are large the parasites have strong incentives to undermine the institutions that limits their share – another form of destructive creativity. In resource rich countries where institutions are undermined, the profit for parasites strongly exceeds that of producers. In Mehlum, Moene and Torvik (2003b) we investigate empirically the interrelationship between resource availability, institutions and economic performance. The results show that more resources on average reduce growth. A more detailed analysis, however, reveals that the negative effect is only present for countries where institutions are bad. If institutions are good, more resources have no negative effect on growth.

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