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Getting Scarcer? A Reflection on the
Contemporary Relevance of Baumol's
Typology**

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ABSTRACT

Is Productive Entrepreneurship Getting Scarcer? A Reflection on the Contemporary Relevance of Baumol's Typology

We review Baumol's typology of productive, unproductive and destructive entrepreneurship. We argue that the typology is relevant for explaining the secular decline in business dynamics. To the existing explanations for this decline, we put forward the thesis that entrepreneurship has become less productive, due to the unintended effects of entrepreneurship policies adopted widely in Western economies. These have *straight-jacketed*, *distracted* and *zombified* entrepreneurship. Removing these constraints on productive entrepreneurship would require that the decline in level-two institutions, such as democracy and science, be halted and reversed.

JEL Classification: L26, L21, L53, O40

Keywords: entrepreneurship, economic growth, economic development, institutions, Baumol

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1 Introduction

Entrepreneurs, who identify and pursue opportunities for new value creation, do not act in a vacuum. Entrepreneurial activity is dependent on its context. It also affects the context directly or through spillovers, most often generating aggregated economic effects. These effects have intrigued scholars and policymakers, especially since the publication of Joseph Schumpeter's *magnum opus*, wherein he explicitly linked entrepreneurship to economic growth and development (Schumpeter, 1934). According to Schumpeter, the main link is the "creative destruction" caused by entrepreneurship. Creative destruction is shorthand for the consequences of innovation and the reallocation of resources that entrepreneurs, incentivised by profit-seeking, will catalyse. The consequences include improved efficiency, production, and competition, leading to better products, more jobs and higher GDP. As such, entrepreneurship will be positively correlated with economic growth and development.

However, evidence on the positive association between entrepreneurship measures and various development indicators, such as GDP per capita or GDP growth, is mixed (Naudé, 2011b,a; Wong et al., 2005; Stam and Nooteboom, 2011). Moreover, policies promoting growth and development by boosting entrepreneurship have seldom proven effective and efficient (Lerner, 2009). Even policies aimed at improving the success of entrepreneurs, such as the provision of training and credit, have had mixed results according to evaluations of their impact (e.g., Bardasi et al. (2021), Laffineur et al. (2017), Karlan and Valdivia (2010) and Oosterbeek et al. (2010)). Not surprisingly, scholars have concluded that entrepreneurship policies "waste taxpayers' money, encourage only those already intent on becoming entrepreneurs, and mostly generate one-employee businesses with low-growth intentions" (Acs et al., 2016, p.37).

Explanations for the weak empirical relationship between entrepreneurship and growth, and between entrepreneurship outcomes and policies, include measurement problems (Schramm, 2008; Henrekson and Sanandaji, 2014), non-linear effects between entrepreneurship and development (Wennekers et al., 2010), the idea of a stable "optimal rate" of aggregate entrepreneurship (van Praag and van Stel, 2013; Prieger et al., 2016), and the quality of entrepreneurship (Shane, 2009). Within this puzzle's context, the importance of Baumol's typology of entrepreneurship becomes clear.

Baumol (1990, p.897) defined entrepreneurs as "persons who are ingenious and creative in finding ways that add to their wealth, power, and prestige" and argued that entrepreneurship can be productive, unproductive, and even destructive for the economy at large. The simple

distinction between these three types of entrepreneurship is that productive entrepreneurship creates value for both the entrepreneur and the economy. In contrast, unproductive and destructive entrepreneurship creates economic value for the entrepreneur but does not result in a net positive aggregate value creation.

This typology has supported the three explanations (measurement problems, non-linear associations, and quality differences in entrepreneurship) for the often-weak empirical relation between entrepreneurship measures and economic growth. It has also added value to entrepreneurship research in helping to study divergent development outcomes, measuring, and defining entrepreneurship motivations, understanding the dynamics of violent conflict, and helping to develop entrepreneurial ecosystems.

In this review paper, we critically discuss the usefulness of Baumol’s typology for studying divergent development outcomes, measuring, and defining entrepreneurship motivations, understanding the dynamics of violent conflict, and helping to develop entrepreneurial ecosystems. Furthermore, we ask how relevant the typology is for the contemporary challenge of explaining the Great Stagnation – the secular decline in business dynamics over the past half a century (Cowen, 2010; Calvino et al., 2020; Decker et al., 2014; Hopenhayn et al., 2022; Naudé, 2022). In doing so, we offer several arguments for a relative decline in productive entrepreneurship in advanced economies in recent years.

2 Entrepreneurship: Productive, Unproductive and Destructive

2.1 Baumol’s Typology of Entrepreneurial Activities

Baumol’s theory of the relationship between entrepreneurship and aggregate activity was first presented in 1990 in *Journal of Political Economy*. In this paper, Baumol discussed the link between the relative rewards structure of different activities and the allocation of individuals’ talent (Minniti, 2016, 2008). Entrepreneurship involves identifying new means-ends relationships engendered by individuals who allocate their talent to activities with economic value. However, the outcomes of these activities are uncertain, and individuals are willing to undertake them only in exchange for an expected return. Importantly, allocating individuals’ talent across different activities is a fundamental societal issue since the private

and social returns from those activities may diverge (Murphy et al., 1991; Acemoglu, 1995). Baumol's theory offers a typology of entrepreneurship that explicitly links the distribution of entrepreneurial activity across different types to their societal value.

Baumol distinguishes entrepreneurial activities based on three different types of societal impact. First, productive entrepreneurship is defined as any entrepreneurial activity "that contributes directly or indirectly to the net output of the economy or to the capacity to produce additional output" (Baumol, 1993, p.30). The distinctive feature of productive entrepreneurship is its value creation potential and ability to contribute positively to the economy. Productive entrepreneurship can produce economic growth by generating innovation and technological improvements (Schumpeter, 1934); stimulate the accumulation of human and entrepreneurial capital by creating incentives for learning (Dias and McDermott, 2006); generate competition by enabling the imitation of successful products and process innovations (Schmitz, 1989); and provide a cost-discovery function (Hausmann and Rodrik, 2003).

Second, there is unproductive entrepreneurship. Unproductive entrepreneurship mainly refers to activities focused on developing sources of rent-seeking, lobbying and speculation. As Acemoglu (1995) notes, the returns from unproductive entrepreneurship are, in this regard, not the results of economic activities but are, instead, derived from interactions in the rent market. The returns that entrepreneurs expect depend on the number of rent-seekers, and the activity itself is of questionable value to society since it produces merely a welfare transfer. An example of unproductive entrepreneurship with significant societal consequences is the regulatory capture by the financial and corporate sector in the USA, which led to the 2008-2009 global financial crisis. As detailed by, amongst others, Johnson and Kwak (2010), Lazonick (2010, 2016) and (Rex, 2020), the influence of considerable corporate (financial) interest in the USA led to an overly complex regulatory environment. Such an environment eventually led to an extensive and uneven financial sector deregulation since the 1970s, which created moral hazards - such as banks being considered "too-big-to-fail" (Kaufman, 2014). This context incentivised large banks to engage in favoured predatory lending, excessive risk-taking, and nonproductive innovation, causing bubbles in financial prices.

Unproductive entrepreneurship can also refer to entrepreneurial activities that do not add significant value in production, job creation or productivity growth. This can include many own-account workers who are not entrepreneurs by choice. Indeed, "the majority of new firms neither innovate nor grow, nor intend to do so" (Stam and Wennberg, 2010, p.79) and "create

few jobs, and generate little wealth” (Shane, 2009, p.141). Unproductive entrepreneurship may overlap with evasive entrepreneurship, which is business activities aimed at overcoming regulations or avoiding taxes (Henrekson, 2007). Elert and Henrekson (2016, p.104) suggest that the consequence of evasive entrepreneurship for broader society depends on the “motives or intentions behind the regulation being evaded.”

Third, Baumol identifies destructive entrepreneurship. Destructive entrepreneurship refers to activities that produce only a welfare transfer and that, in doing so, also result in a net reduction of societal wellbeing. Warfare and slavery are specific examples (Brauer and van Tuyll, 2008; Landes et al., 2010). More generally, criminal activities and activities with a substantial negative impact can result from destructive entrepreneurship. Take the example of how entrepreneurship can potentially drive a species to extinction, leading to economic and environmental losses that are often difficult to quantify. The poaching of Rhinos for their horns in Africa is often undertaken by criminal gangs operating very much as risk-taking entrepreneurs. As Hansrod (2019) describe, these gangs are “[...] extremely well organised. They have sophisticated procurement and distribution methods to ensure they get the horns from Africa to Asia.” Moreover, within the broader context, there seems to be little that disincentivises poaching as “wildlife crime is often perceived as a high reward/low-risk crime. If they are caught, they may get a small slap on the wrist” (Hansrod, 2019).

The distinction between unproductive and destructive entrepreneurship has been extensively debated (Minniti, 2008; Lucas and Fuller, 2017). For instance, in the example of excessive risk-taking and predatory lending by banks in the USA, one may argue that the significant cost imposed on society goes beyond unproductive to destructive entrepreneurship. The global financial crisis illustrated how unproductive entrepreneurship can become destructive: how regulatory capture (unproductive) can end up bringing down the housing market (destructive). McCaffrey (2018) has argued that the distinction between unproductive and destructive entrepreneurship breaks down if the opportunity cost of entrepreneurial activities is considered and has proposed merging them into a more general category of “nonproductive entrepreneurship.” The critical point here is that whether an activity emerges as productive or unproductive is contingent, at least partly, on the environment. This, in turn, can only be established relative to the institutional context in which the activity took place - “institutions rule” (Rodrik et al., 2004). Thus, besides providing a helpful typology, Baumol’s argument fundamentally contributes to how we think about entrepreneurship by embedding it in a socio-economic system.

2.2 Entrepreneurial Activity and the Institutional Context

Baumol's typology of entrepreneurship links directly to North (1990)'s argument that institutions, i.e., "the rules of the game," determine the relative payoffs to different types of activities and, therefore, whether an entrepreneur chooses to allocate their talent to productive or unproductive ventures (Boettke and Piano, 2016; Minniti, 2008). As noted above, entrepreneurs exploit profit opportunities in private markets but are alert to possible rents created by the ruling political and legal systems. As a result, differences in the allocation of entrepreneurship across countries are mainly due to the different incentive structures created by prevailing economic and political institutions, whether formal or informal.

Leveraging historical evidence and comparing countries and geographic areas, Baumol notes that while governments have limited ability to influence the total supply of entrepreneurs, they can influence how this supply of entrepreneurs is distributed - allocated - across alternative types of entrepreneurial activities. This is because, by influencing the institutional context, governments can alter the incentives and the relative returns to different activities, thereby influencing the allocation of talent. Within this context, Baumol's broad view of entrepreneurship is close to much of the Austrian view, where entrepreneurship is described as a human universal influenced by contextual incentives (Koppl and Minniti, 2010), as well as to the public choice approach to interactions between individuals and political systems (DiLorenzo, 1984).

2.3 Extensions and Debates

In sum, Baumol's 1990 piece revealed that (1) entrepreneurship in itself does not need to be good for the economy at large (it can be productive, unproductive and destructive) and that (2) the allocation of entrepreneurial talent over different types of entrepreneurship depends on the institutional context. This has led to a whole stream of research on types of entrepreneurship and the role of institutional contexts. A complete review of this literature is beyond the scope of this chapter. However, providing some examples of the theoretical formalisation of Baumol's ideas and extensions is helpful and discussing attempts to operationalise his theory empirically is helpful.

Acemoglu (1995) provides a theoretical formalisation and extension of Baumol's theory. In Baumol (1990), the institutional structure that determines the allocation of entrepreneurship

across different types, as well as the resulting returns, are exogenous.¹ Acemoglu (1995), building on public choice theory, provided a model to illustrate that the reward structure of society can be endogenous, because of “rent-seeking externalities” from unproductive entrepreneurs. If rent-seeking increases, returns to productive entrepreneurship will decline. However, if the relative return to entrepreneurship falls faster than the rate of return to rent-seeking, Acemoglu shows that multiple equilibria are possible. Since different equilibria are associated with different relative rewards, “the equilibrium reward structure and allocation of entrepreneurship are jointly determined” (Acemoglu, 1995, p.18).

Expanding upon Baumol’s work, Acemoglu (1995) further showed why policy to “re-allocate” entrepreneurship away from rent-seeking to productive activity is difficult: Hence a reward structure that incentivises rent-seeking will distort not only the present allocation of entrepreneurship but also future allocations (Acemoglu, 1995)). What is at play here is strategic complementarity in allocating agents between productive entrepreneurship and rent-seeking. Defining rent-seeking as “an activity which reduces the return to productive activities carried out by other agents,” Acemoglu (1995, p.20) showed that as more agents decide to be rent-seekers, this will reduce the returns to productive entrepreneurship and incentivises more agents to become rent-seekers. An increase (but also a decrease) in rent-seeking is self-sustainable. Consequently, countries can get stuck in an “underdevelopment trap” if they start with “unfavourable” institutions (Acemoglu, 1995, p.19).

The implication that countries can get stuck in an underdevelopment trap due to the misallocation of entrepreneurial talent has been further explored by Mehlum et al. (2003). In their model, entrepreneurs have two choices: they can either be a predator or prey. As predatory entrepreneurs, they can increase their “wealth, power and prestige” through, for instance, theft, extortion, bribery, and fraud. Countries, where predatory entrepreneurship becomes dominant will end up as Predatory States. Robinson (2001) shows that in predatory states, agents will seek and contest political power to join the predatory elites. If their hold on power becomes sufficiently strong, these elites will engage in expropriation rather than redistribution of resources to build patronage systems (Robinson, 2001).

Predatory elites amid webs of patronage are more prevalent in countries with endowments of “lootable” natural resources, that is, resources (such as oil or alluvial diamonds) that do not require extensive infrastructure and other investments to coordinate to extract (Findley and Marineau, 2015). As predatory entrepreneurship tends to be more prevalent in low-income

¹Typically, in institutional economics, the reward structure (institutions) of a society can only change over the long run, as in Williamson (1998a,b).

countries (Mehlum et al., 2003), the combination of lootable resources and low income implies that the resource curse can be understood as an allocation of entrepreneurship problem in the presence of institutional weakness, fragile property rights² (Mehlum et al., 2003; Naudé, 2008).

Given the centrality of rent extraction for entrepreneurship, Henrekson (2007, p.719) defined entrepreneurship as “a continual quest for economic rents, i.e., rates of return exceeding the risk-adjusted market return.” The sources of rent include access to natural resources, patents, and tacit knowledge (Henrekson, 2007). The latter is essential as it reflects the centrality of the economic rent-seeking entrepreneur in endogenous growth theory (Romer, 1990b,a). In endogenous growth theory, entrepreneurs innovate and bring new ideas to the market to obtain economic rents. Protection of intellectual property rights through, for instance, patents, provides entrepreneurs with such rents by granting them (temporary) monopolistic power.

In endogenous growth theory, ideas, not objects, ultimately drive economic growth (Romer, 1993). A slowdown in the growth of ideas will slow down economic growth - and this can come about because of insufficient intellectual property protection as per Romer, but also, and this is the direct contribution of Baumol’s ideas, from entrepreneurs seeking rents through other means - bribery or predation, for instance, as in the examples from Acemoglu (1995) and Robinson (2001).

A further extension of Baumol’s typology has been to point out that the relationship between entrepreneurship and institutions may be complex and that a potential bilateral causality exists, such that entrepreneurs do not necessarily abide by institutions and can evade or even alter the institutional framework (Elert et al., 2017; Boettke and Coyne, 2009). This led to the notion of the institutional entrepreneur as someone “*who starts or expands his business venture and, in the process, helps destroy the prevailing non-market institutions for his business to succeed. By this definition, an institutional entrepreneur is a businessperson whose ultimate objective is the success of his business venture, but his innovation is external, not just within his firm*” (Li et al., 2006, 358). As a result, institutional entrepreneurship consists of the “activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones” (Maguire et al., 2004, p.657).

Institutional entrepreneurs can provide a positive externality or spillover effect which benefits

²The natural resource curse refers to a negative association between natural resource endowments and a country’s economic growth and development (see, e.g., van der Ploeg (2011)).

society, including other entrepreneurs. They do this by open advocacy, private persuasion of policymakers, and illustrating-by-doing that changes in the institutional and regulatory environment are beneficial. Li et al. (2006) relates several examples from China, including agricultural reform, financial reform, the liberalisation of industrial policies, and interest rate liberalisation, where entrepreneurs lobbied - and even broke the law - to pursue activities that were not permitted or heavily regulated - and managed to convince the authorities to introduce market-oriented reforms. Institutional entrepreneurs, thus, change institutions to pursue their private interests in a manner that can benefit other entrepreneurs. As such, institutional entrepreneurs can be the opposite of rent-seeking (unproductive) entrepreneurs who reduce the returns accruing to productive entrepreneurship (see Acemoglu (1995)).

Finally, scholars have been asking what institutions matter for allocating productive, unproductive, and destructive entrepreneurial efforts. Dilli et al. (2018) attempt to answer this question for EU countries and the USA, drawing on the notion of “Varieties of Capitalism” (Hall and Soskice, 2001). In the Varieties of Capitalism (VoC) literature, essential requirements for entrepreneurs are labour, finance and knowledge. Institutions that help solve the collective action problem between entrepreneurs on the one hand and financial, labour and knowledge markets on the other are, therefore, the most influential. Using data from 21 EU countries and the USA, Dilli et al. (2018) identify four institutional constellations that support different types of entrepreneurship in those countries. These four are Liberal Market Economies (LMEs - an example is the UK), Coordinated Market Economies (CMEs - an example is Germany), Mediterranean Market Economies (MMEs - an example is France) and Eastern European Market Economies (EMEs - an example is Poland). LMEs are characterised by “permissive financial and deregulated labour markets, scientific education systems teaching workforces general skills, and reliable legal systems governing inter-firm collaborations” (Dilli et al., 2018, p.314). CMEs, MMEs and EMEs differ from LMEs regarding labour, financial and education/research systems. For example, in EMEs, financial systems are constrained, and legal systems are unreliable. The result is different types of entrepreneurship across these institutional constellations - Dilli et al. (2018) find that Schumpeterian (highly productive) entrepreneurship is most prevalent in LMEs and least prevalent in MMEs. They conclude that if countries with MME and EME varieties of capitalism want to encourage more Schumpeterian entrepreneurship, they need to implement policies to further financial and labour market deregulation.

Note that Dilli et al. (2018) considered only which institutions are most influential in determining the type of entrepreneurship in European countries. As far as low-income countries are concerned, more research is needed, the implication from the foregoing discussion

being that the institutional constellations affecting entrepreneurial allocation are not homogeneous. There is no one-size-fits-all entrepreneurship policy for low-income countries, just as the study of Dilli et al. (2018) showed that there is no unique single policy approach in the case of European countries.

The emerging literature on institutions and their relationship with entrepreneurship in low-income countries bears this out. Sun et al. (2020) notes that earlier work on institutions and entrepreneurship in low-income countries focused on policies that improve economic freedom as the most important, including the protection of property rights (and intellectual property rights) as a central institution. Later work focused more on informal institutions in low-income countries, noting the importance of social capital, including networks, family support, peer influence, politics, and cultural traditions (Sun et al., 2020; Eijdenberg et al., 2019).

3 Assessing Baumol’s Typology

In the previous section, we presented Baumol’s typology, linked it to the institutional context, and discussed several extensions. In this section, we provide an assessment. First, in section 3.1, we argue that Baumol’s typology was useful for subsequent entrepreneurship research in at least five directions. Then, in section 3.2, we identify unanswered questions or issues to be noted for further research.

3.1 Value to Entrepreneurship Research

Baumol’s typology has been valuable to entrepreneurship research as it has provided a framework for understanding unequal development, has stimulated efforts at measuring entrepreneurship, has contributed to understanding the dynamics of violent conflict, has changed how we think about entrepreneurship policy and has enabled the case for entrepreneurial ecosystems as a broad approach to the allocation and development of productive entrepreneurship.

3.1.1 Understanding Unequal Development

A first research direction that benefited from Baumol's typology is research into how entrepreneurship leads to disparate economic development outcomes. The answer from Baumol's typology is that not all countries have equal productive entrepreneurship – that the “reward structure of society” lead to the allocation of talent towards unproductive and destructive forms of entrepreneurship rather than productive forms. The reward structure of society is the outcome of the institutions of society (Rodrik et al., 2004). The broad institutions of society encompass the “rules of the game” and the “play of the game” (or governance) (North, 1990). They are the “primary cause of economic development” (Przeworski, 2004; Acemoglu et al., 2005). As defined by North (1991, p.97), institutions are:

“[...]the humanly devised constraints that structure political, economic, and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct) and formal rules (constitutions, laws, and property rights).”

Property rights are one of the critical rules of the game (institutions) important to development outcomes. Without property rights, the investment would be depressed, as the investor is exposed to the risk of expropriating their returns (Demsetz, 1967; Bowles and Choi, 2019). Property rights also reduce transaction costs (Williamson, 1979), and with well-defined property rights, market failures (for instance, in the case of pollution) can be reduced (Coase, 1960). The critical role ascribed to property rights as an institution conducive to development is evident in the very definition of the field of institutional economics, which “focuses on the institution of property, and on the systems of norms governing the acquisition or transfer of property rights” (Furubotn and Richter, 1991, p.3). As illustrated in the examples from Acemoglu (1995) and Robinson (2001), this reward structure can channel entrepreneurial talent into activities that have detrimental consequences for economic growth - such as underdevelopment traps and predatory states.

With institutions and governance determining the allocation of talent, entrepreneurial entry would not automatically lead to growth and development. Differences in the quality and nature of institutions explain differences in development levels between countries. In countries with weak institutions (weak “rules of the game”) or extractive institutions (Acemoglu and Robinson, 2011), those with entrepreneurial talent may find it more rewarding to pursue rent-seeking, corruption, regulatory capture or, in the end, engage in criminal activities and

conflict. This might lead to value creation for the entrepreneur and perhaps her family or a small elite but at the expense of the prosperity of other members of society. In contrast, inclusive institutions enable human capital development and access to capital and provide incentives for productive entrepreneurship (Acemoglu and Robinson, 2011).

A growing literature explores the link between institutions and development outcomes and the role of entrepreneurship in this channel- see, e.g., Acs et al. (2008), Aidis et al. (2008), Audretsch et al. (2021), Boettke and Coyne (2009), Bosma et al. (2018), Bowen and Clercq (2008), Chowdhury et al. (2019), Dilli et al. (2018), Estrin et al. (2013), Henrekson (2007), Li et al. (2006), McMullen et al. (2008) and Stam and Nooteboom (2011).

3.1.2 Measuring and defining entrepreneurial motivations

The distinction between productive, unproductive, and destructive entrepreneurship has also influenced how entrepreneurship is measured and defined. The Global Entrepreneurship Monitor (GEM), the world’s largest continuous survey of entrepreneurship (see Reynolds et al. (2005)), introduced the distinction between opportunity-motivated and necessity-motivated entrepreneurship. “*The basic distinction is that some entrepreneurs create businesses when they see a business opportunity, whereas other entrepreneurs are forced into starting a business out of necessity because of the lack of other options in the labour market*” (Fairlie and Fossen, 2020, p.254). Typically, opportunity-motivated entrepreneurship is pro-cyclical, while necessity entrepreneurship is counter-cyclical.³

Those in necessity entrepreneurship “experience a strong sense of urgency and ignore entrepreneurial opportunities with long payoff periods” (Dencker et al., 2021, p.61). This means that necessity entrepreneurship will have a qualitatively different impact than opportunity entrepreneurship in the sense of Baumol’s typology. Nevertheless, this does not make it unproductive in the sense described above. Indeed, necessity entrepreneurship is not without value as it may provide a means of survival, especially in countries where social safety nets are lacking. In a more developed context, or with higher demand and more inclusive institutions, many would have pursued opportunity entrepreneurship or become employed by more productive firms. That necessity entrepreneurs are also found in developed economies reflects that there is more heterogeneity among necessity entrepreneurs than

³Hence, Fairlie and Fossen (2020, p.255) operationalise the distinction for measurement purposes by proposing that “Individuals who are initially unemployed before starting businesses are defined as ‘necessity’ entrepreneurs, and individuals who are wage/salary workers, enrolled in school or college, or are not actively seeking a job are defined as ‘opportunity’ entrepreneurs.”

the simple opposite of opportunity entrepreneurship (Dencker et al., 2021).

If (re) allocating more entrepreneurial talent towards opportunity rather than necessity, entrepreneurship is associated with better job creation, more innovative and better-performing firms, and economic development in general (Bosma et al., 2018; Poschke, 2013; Minniti et al., 2006), then Baumol’s typology suggests that institutional factors, which determines the “reward structure of society,” would play an important role. Indeed, one such factor, the availability of social safety nets, has already been mentioned. For example, Dheer and Trevino (2022) found empirical evidence across 58 countries that institutions influence the relative prevalence of opportunity to necessity entrepreneurship. For instance, the regulatory burden that potential entrepreneurs face in a country is “stronger in nations that value autonomy, egalitarianism, and harmony, than in those that value embeddedness, hierarchy, and mastery” (Dheer and Trevino, 2022, p.48). The policy implication is that higher regulatory burdens will discourage more opportunity entrepreneurship relative to necessity entrepreneurship in countries with the former cultural values (e.g., Sun et al. (2020) and Eijdenberg et al. (2019)).

A particular form of opportunity entrepreneurship is social entrepreneurship, defined as “entrepreneurial activity with the explicit objective to address societal pains” (Lepoutre et al., 2013, p.693) - where societal pains are due to “basic human needs that remain unsatisfied by current economic or social institutions” (Seelos and Mair, 2005, p.243). Given this motivation, it has been argued that social entrepreneurship excludes unproductive and destructive entrepreneurship and is inherently productive (Acs et al., 2013), albeit only when successful.

Social entrepreneurship has been found, in cross-country studies, to be generally more prevalent in low-income regions where there may be more of such societal pains⁴ (Lepoutre et al., 2013). It is, as such, a response to “institutional voids” (Mair and Marti, 2009). Moreover, given that “social entrepreneurs may extend market opportunities to those for whom access was previously difficult, overcoming economic as well as social barriers” and “create social capital specifically appropriable for commercial entrepreneurs” (Estrin et al., 2013, p.480), they fulfil a function akin to that of institutional entrepreneurs. In contrast, social entrepreneurship in developed countries may reflect not institutional voids but institutional support in the form of government support for socially motivated enterprises (Stephan et al., 2015).

⁴The USA seems an outlier, having higher rates of social entrepreneurship than developing regions (Lepoutre et al., 2013).

3.1.3 Understanding the dynamics of violent conflict

A third helpful application of Baumol’s typology has been a better understanding of the dynamics of violent conflict. Historically, violent conflict has been ascribed to political factors, geopolitical tensions, grievances, inequality, poverty, and struggles over scarce resources. The insights from Baumol’s approach are that violent conflict can also be driven by individuals’ and groups’ economic and status-seeking strategies – in other words, destructive entrepreneurship (Desai et al., 2013). Extractive institutions will make it more attractive for the ruling elites to continue with violent conflict than to turn their talent into productive entrepreneurship (Acemoglu and Robinson, 2011).

This helps explain the rise and tenacity of predatory states (e.g. Mehlum et al. (2003); Robinson (2001)), which we already discussed concerning unproductive and destructive entrepreneurship. It also helps explain why violent conflict is often prevalent in resource-rich economies (resulting in the natural resource curse) (Canh et al., 2021) and why it extends over time despite its high costs. Brokering and sustaining peace thus most often requires the reallocation of entrepreneurial talent to different activities, making it costly for entrepreneurs to revert to destructive activities for the economy at large (Brück et al., 2013).

Brück et al. (2013) surveyed the literature on violent conflict and entrepreneurship. The paper, which introduces a special edition of the Journal of Conflict Resolution, draws mainly on firm and household-level surveys conducted in countries and regions in conflict, including Colombia, Sierra Leone, and northern India. The authors found that violent conflict *“by reducing economic growth, can tilt incentives in society for talented entrepreneurs to engage in activities that will further undermine growth. This leaves open the possibility for entrepreneurial behaviour to lead to an underdevelopment trap if violent conflict becomes significant”* (Brück et al., 2013, p.10).

Naudé et al. (2023), instead, provided a cross-country empirical study using UCDP/PRIO data on violent conflict (state-based) and entrepreneurship data from the Global Entrepreneurship Monitor (GEM) and the International Labour Organization (ILO) covering 91 countries over 18 years. The authors found that violent conflict significantly alters the institutional context against productive entrepreneurship. Specifically, they noted that necessity-motivated entrepreneurship is, on average, 193% higher in countries in conflict than in countries not. Moreover, countries in violent conflict had more nonproductive entrepreneurship, were more militarised, and were substantially poorer.

Naudé et al. (2023) also found that the impact and severity of violent conflict depend on institutional quality: in countries with generally better institutions (as reflected in GDP per capita) that were able to facilitate trade and finance, and higher levels of human capital, they found productive entrepreneurship to be less negatively affected. More permissive trade, finance and human capital policies are, as Dilli et al. (2018) noted (see section 2.4), more likely the outcome of an institutional configuration associated with Liberal Market Economies (LMEs), where Dilli et al. (2018) found Schumpeterian (productive) entrepreneurship more prevalent.

Naudé et al. (2023) established that entrepreneurship appears to be able to rebound in post-conflict periods, as productive entrepreneurship was shown to recover fast in some post-conflict countries when the intensity of conflict decreases. Naudé (2009) noted that, despite this Phoenix effect (Organski and Kugler, 1977), productive entrepreneurs and policymakers face formidable difficulties in post-conflict reconstruction and peacebuilding. These difficulties are hysteresis effects - of having fallen into an underdevelopment trap. The self-reinforcing nature of such a trap in countries that experienced violent conflict is partly due to what has been termed “conflict entrepreneurs” - a form of destructive entrepreneurship where some entrepreneurs, who benefit from the conflict situation, may intentionally obstruct escape routes from this underdevelopment trap (Cooper, 2006). For instance, conflict entrepreneurs may have accumulated resources during the conflict, which they then leverage for political power after the conflict (Naudé, 2009). This is one reason why peace agreements most often collapse.

3.1.4 Entrepreneurial Activity and Entrepreneurship Policy

As Baumol (1990, p.894) noted, “*It is the set of rules and not the supply of entrepreneurs or the nature of their objectives that undergoes significant changes from one period to another and helps to dictate the ultimate effect on the economy via the allocation of entrepreneurial resources.*” Because the institutional framework shapes entrepreneurial incentives, the government has an important role to play (Baumol and Strom, 2007). The amount of entrepreneurial activity devoted to socially valuable outcomes responds to the rules of the game set in place by those with the power to enforce them.

Within this context, the critical implication of Baumol’s argument is that entrepreneurship per se is not the key to economic growth. Instead, it is the interaction between entrepreneurship, as a human universal, and institutions that matter.

This has slightly different implications for developing and developed economies. As Naudé (2011b) puts it, for developing economies, it is the case that “entrepreneurship is not a binding constraint on growth.” He argues that because developing countries’ economies operate well within the technological possibility frontier, their economic growth is not innovation-driven, and entrepreneurs are typically not the agents who kick-start economic growth. Naudé (2011b, p.36) refers in this regard to Pahn et al. (2008, p.325), who argued that at early stages of development, governments, rather than entrepreneurs, play the “critical role” and that this role diminishes as a country develops, until eventually, as in advanced economies, growth is mainly innovation-driven growth by entrepreneurs.

Instead, the link between entrepreneurship and innovation-driven economic growth remains vital for developed countries. However, it becomes subject to decreasing returns to R&D and large-firm dynamics - because transaction costs tend to decline in developed countries, and average firm size tends to increase. Also, the relationship between entrepreneurship and subjective wellbeing has become more critical (Naudé, 2014). In developed countries, policies to try and entice more and more people into entrepreneurship to drive economic growth may not be effective. Instead, enabling “happy” entrepreneurs may be more appropriate - and perhaps more consistent with a post-growth society where GDP growth may not be considered the most crucial measure of economic development (Vollrath, 2020).

By changing how we think about the relationship between entrepreneurship and public policy, Baumol’s theory moves the policy conversation away from top-down attempts to push individuals into entrepreneurship to emphasise how policy should be more concerned with creating underlying conditions that incentivise bottom-up productive entrepreneurship. As Henrekson and Stenkula (2021) note, this is a significant departure from much policy-oriented research that endorses an ad hoc pick-the-winner approach or attempts to increase exogenously the quantity of entrepreneurial activity regardless of its allocation across types.

Baumol’s typology’s implication that policy should be more concerned with creating underlying conditions that incentivise bottom-up productive entrepreneurship is also consistent with Amartya Sen’s *Capability Approach* of “development as freedom,” (Sen, 1990) in terms of which, as Gries and Naudé (2011) formally illustrated, entrepreneurship can be a human functioning if people are not pushed into it, and is an end in itself, and not merely a means to an end (such as economic growth).

3.1.5 Supporting the case for entrepreneurial ecosystems

A fifth application of Baumol’s insights and related to its implications for policy making as discussed in the previous section, are ideas about entrepreneurial ecosystems. An entrepreneurial ecosystem can be defined as a set of interdependent actors and factors coordinated to enable productive entrepreneurship within a particular territory (Stam, 2015; Stam and Spigel, 2018). These applications have been mainly the focus of attention - at least at first - in advanced economies (see Wurth et al. (2022) for an overview of studies).

From Baumol’s perspective, entrepreneurial ecosystems are coordinated efforts to maximise productive entrepreneurship. High-quality entrepreneurial ecosystems are based on inclusive institutions, installed, and safeguarded by enlightened leadership, enabling broad development of and access to human capital, knowledge, financial resources, and social capital. These conditions increase the likelihood of productive entrepreneurship (Leendertse et al., 2022).

The entrepreneurial ecosystem approach combines Baumol (1990)’s view on productive entrepreneurship and the role of fundamental institutions (Baumol, 1990; Acemoglu et al., 2005) with a complex systems view of the economy, in which there is not one essential condition for economic development to occur via entrepreneurship, but an ensemble of actors and factors working together to enable productive entrepreneurship.

Several studies have shown that a high-quality entrepreneurial ecosystem is more likely to “produce” high levels of innovative start-ups, high-growth firms, and unicorns than low-quality entrepreneurial ecosystems (Stam and van de Ven, 2021; Leendertse et al., 2022). However, much work needs to be done to learn more about how entrepreneurial ecosystems are interrelated and how higher levels of productive entrepreneurship and economic development positively feedback on the entrepreneurial ecosystem’s quality, creating virtuous development cycles. There is also a dearth of evidence and insight into how entrepreneurial ecosystems work in Africa and Asia (see Wurth et al. (2023)), especially in contexts that lack high-quality, inclusive institutions.

4 Contemporary Relevance

In the previous sections, we discussed the contribution of Baumol’s typology to entrepreneurship research in five areas: understanding unequal development, measuring entrepreneurship,

understanding the dynamics of violent conflict, changing how we think about entrepreneurship policy, and arguing the case for entrepreneurial ecosystems. We pointed to a rich and growing literature in discussing these research streams.

All five of these streams are of contemporary relevance. The world continues to be scarred by unequal development, including rising inequality, and the unequal impacts of the ecological crisis (including climate change); measuring entrepreneurship continues to be a challenge given ongoing changes like work, including the rise of digital entrepreneurship; state-based violent conflicts have been on the increase, with a resulting growing stream of refugees, internally displaced persons and migrants; and entrepreneurial policy and the value of entrepreneurial ecosystems continue to challenge governments as they struggle to balance ever greater demands within constraints posed by geopolitical shifts, deglobalisation/slowbalization and dealing with the ecological crisis.

In dealing with these challenges and crises - also referred to as a polycrisis - the world would benefit from more productive, less unproductive, and destructive entrepreneurship. The potential problem is that, just when more productive entrepreneurship may be needed, it is structurally on the decline, at least in advanced economies. Why is this the case? Furthermore, what can be done to reverse this? How can institutional change be affected to counter the decline in productive entrepreneurship?

In this final section of the paper, we describe why finding answers to these questions provides a profound challenge to ongoing research in entrepreneurship and why Baumol's typology continues to provide valuable perspectives from where to search for answers.

4.1 The Ossified Economy

Entrepreneurial dynamics - including start-up, innovation, and productivity growth rates - are declining in many parts of the Western world (Calvino et al., 2020). This phenomenon is accompanied by declines in science and research productivity (Boeing and Hünermund, 2020). These declines have been variously identified and studied under the banners of the Great Stagnation (Cowen, 2010), Declining Business Dynamism (Calvino et al., 2020; Decker et al., 2016, 2017) or the Ossified Economy (Naudé, 2022). Bhaskar (2021) refers to this as an “age of small thinking.” If we associate productive entrepreneurship with innovative, Schumpeterian, productivity and GDP-enhancing entrepreneurship, then productive

entrepreneurship is in decline in many advanced economies.⁵

Given the massive resources invested in entrepreneurship support programs, science, and R&D in advanced economies, this is a puzzle. Several answers to this puzzle have been proposed in recent years, including declining aggregate demand related to demographic changes (the ageing and shrinking of populations), increasing risk aversion, rising economic complexity, rising energy prices, and declining returns to investments in energy, and the gradual erosion of permissionless innovation. The latter refers to “the notion that experimentation with new technologies and business models should generally be permitted” (Thierer, 2014, p.1).

Our thesis is that a further factor should be added to this list. Entrepreneurship has become less productive and socially beneficial (the benefits are also less equally shared than before) partly due to the unintended effects of entrepreneurship policies adopted widely in Western economies in recent decades. Three policy types are particularly relevant to this point, and we identify them as entrepreneurship *straight jacketing*, entrepreneurship *distracting*, and entrepreneurship *zombifying*. Albeit closely related, each type presents its characteristics.

The first type of entrepreneurship policy that is responsible for making entrepreneurship less productive may be called entrepreneurship straight jacketing. This refers to how entrepreneurship is constrained by being channelled into what governments believe to be socially desirable targets, for instance, to lessen dependence on foreign markets, create national champion firms, tackle climate change, accelerate job creation, and others.

The question is, of course, why would this be detrimental to productive entrepreneurship? After all, to the extent governments channel and challenge entrepreneurs to address social needs, they promote social entrepreneurship. In section 3, we discussed the rise of social entrepreneurship and the role of institutional entrepreneurs and indicated that social and institutional entrepreneurs are productive entrepreneurs. This is indeed not what we mean by entrepreneurship straight jacketing.

Government (demand-driven) support for entrepreneurs who spot an opportunity to fill a social need, or improve non-market institutions, does not necessarily straight-jacket en-

⁵Regarding entrepreneurship, the West is, of course, characterised by heterogeneity. However, this does not take away from the fact that productivity growth and a wide range of innovation indicators, creativity and business dynamism have consistently declined since the 1970s. The Great Stagnation is a long-term, secular trend, which may be here and there temporarily interrupted by growth and business dynamism experiencing upswings (Andrews et al., 2016; Restuccia and Rogerson, 2008; Hsieh and Klenow, 2009; Bento and Restuccia, 2017).

trepreneurship. What can do so, however, are selective industrial policies, which are top-down, supply-driven market interventions to steer entrepreneurial effort into a direction determined by political priorities. These policies alter incentives towards “gaming” the system, lobbying decision-makers, and bribery and corruption. Moreover, these policies can crowd out private innovation and investment and lead to a misallocation of capital and finance (Restuccia and Rogerson, 2008). Although this has always been the case and remains a weakness of selective industrial policy, what changed in many Western countries, foremost the USA, is that since the 1980s, the agenda for industrial policy has not been set by the government but increasingly by the large corporate giants.

An extreme example of entrepreneurship straight jacketing is China. At the same time, seemingly a highly entrepreneurial country, most entrepreneurial effort in China is directed by the Communist Party into areas that are deemed, according to political considerations, to be vital for the national interest, such as urbanisation, housing, construction, exports, and the digital economy (Wu, 2018). Once the Communist Party identifies an area where it wants to direct entrepreneurial effort, it provides enormous amounts of finance to facilitate this re-direction and tolerates no dissent from entrepreneurs. As described by Zeihan (2022, p.184-187):

“The Chinese government assigns capital to everything. Excruciatingly little of it would qualify as ‘wise capital allocation’. The goal is not efficiency or profitability, but instead achieving the singular political goal of overcoming regional, geographic, climatic, demographic, ethnic and millennia of historical barriers to unity. No price is too high [...] as of calendar year 2022, total outstanding corporate debt in China reached 350 percent of GDP [...] since 2007 - the supply of yuan has increased by more than eight hundred percent [...] China has generated the largest and most unsustainable credit boom in human history in both absolute and relative measures.”

In advanced economies, the straight jacketing of entrepreneurship is not as extreme as in China but shares many elements. Whereas in China, entrepreneurial efforts are channelled or straight jacketed by the Communist Party, in the USA, it is the consequence of the influence of large corporate firms over the government, which has become progressively stronger since the 1980s. Moreover, as in China, the most influential large corporations tend to be the financial beneficiaries of government spending - even outside the notorious military-industrial complex. In the USA, 40% of all public companies are owned by only three firms: Blackrock,

Vanguard, and State Street (Fichtner et al., 2017). The US government spent US\$ 4 trillion to support its economy during the COVID-19 pandemic, of which 80% went to the corporate sector (Whoriskey et al., 2022). This follows more than US\$ 498 billion in bailout money that the too-big-to-fail financial sector received in the 2008-2009 global financial crisis (Harbert, 2019).

More generally, entrepreneurship straight-jacketing, through the misallocation of finance and capital, depresses productivity growth - a vital symptom of the decline in entrepreneurship and the Great Stagnation (Andrews et al., 2016). In the case of Japan, Hosono and Takizawa (2022, p.218) pointed out that “the slow or misdirected reallocation of resources in the 1990s is among the possible causes of the stagnant TFP in Japan.” Restuccia and Rogerson (2008), Hsieh and Klenow (2009) and Bento and Restuccia (2017) presented misallocation models and data to quantify the impacts of misallocation of finance and capital on productivity - finding, for instance, that such distortions significantly reduce output.

The second type of entrepreneurship policies responsible for making entrepreneurship less productive are policies that may distract entrepreneurship, meaning that, albeit not directly aimed at entrepreneurship, they have the unintended consequence of altering the allocation of capital in a way that leads to winner takes all effects, while erecting significant barriers to entry (Naudé, 2023). For example, following the global financial crisis, the surfeit of money after the bank bailouts has produced incentives toward seeking quick returns in a global environment where interest rates have dropped to their lowest recorded level (Holodny, 2017). In such an environment, investors prefer short-horizon investments at the expense of more R&D-intensive investments. Similarly, with the digital economy, the creation and diffusion of technology may be retarded, for example, by firms engaging in defensive patenting and creating “kill zones” around their business domains. These kill zones are created by buying up any potentially competitive start-up (Kamepalli et al., 2020). Both these phenomena discourage entrepreneurs from entering the market, and when they do, give them incentives not to proceed to an IPO but to seek to be acquired by a large incumbent firm.

The third type of entrepreneurship policies responsible for making entrepreneurship less productive is the de-risking and de-skilling of entrepreneurship (Michelacci, 2003), in which specific institutional configurations allow unproductive and unprofitable firms to remain alive - i.e., zombie firm congestion (McGowan et al., 2017). The zombification of firms is a significant global phenomenon. According to Andrews et al. (2016), for example, between 2% and 10% of firms in the OECD are classified as zombies, with estimates as high as around 19% in Italy and 14% in Belgium. These are relatively old firms (> 10 years old) that have

“persistent problems meeting their interest payments” (Andrews et al., 2016) and absorb a significant share of investment in capital stock. As a result of having preferential access to finance, they pay wages above their workers’ productivity and offer their goods on markets at depressed prices. This, of course, raises the productivity hurdle that new market entrants must overcome. Hence, the prevalence of zombie firms retards the entry of new, innovative, and productive firms (McGowan et al., 2017).

The zombification of firms may also result from entrepreneurship straight-jacketing - in other words, firms that follow political dictates may receive supportive finance and capital irrespective of whether they are well-managed, profitable, or productive. This is the case for Japan, where “Japanese banks, burdened with non-performing loan problems, continued to provide loans to otherwise insolvent firms (“zombies”) in the 1990s. The presence of zombies depressed job construction and destruction, resulting in lower aggregate productivity” (Hosono and Takizawa, 2022, p.281).

The effects of entrepreneurship straight jacketing, entrepreneurship distracting, and entrepreneurship zombifying against productive entrepreneurship are further exacerbated by demographic changes in the West, such as ageing (Hopenhayn et al., 2022), and reflected in increased industry concentration (Grullon et al., 2019).

Notably, productive entrepreneurship has not declined in absolute terms only. There is evidence showing that it has also declined in relative terms, as destructive forms of entrepreneurship seem to have been increasing (Andrews et al., 2016; Restuccia and Rogerson, 2008; Hsieh and Klenow, 2009; Bento and Restuccia, 2017). Several interrelated reasons are responsible for the relative decline of productive entrepreneurship. They include ideological views that have seen policy capture led to moral hazards, perverse incentives for businesses to reduce spending on innovation and competitiveness (e.g., Lazonick (2016), and moral hazards due to government backing of large/dominant firms (Johnson and Kwak, 2010).

Finally, as many advanced Western economies increase investments in renewable energy sources, the demand for minerals and rare earths, essential inputs into, for instance, solar and wind power, is creating a new mineral boom. This, in turn, holds out the danger of a new resource curse in countries rich in those minerals but characterised by weak institutions, like the curse that marked many oil-rich countries.⁶

⁶The case of the horrific child exploitation in the cobalt mines of the Democratic Republic of Congo is a case in point - see Kara (2023).

4.2 Changing the institutional environment in favour of productive entrepreneurship

Low-income countries are often caught in an underdevelopment trap due to institutional weaknesses, which incentivises unproductive and destructive forms of entrepreneurship. This was the gist of the discussion in section 2.3 of this paper. A development trap is self-reinforcing, and because institutions are endogenous, it is a daunting task to escape from a development trap by altering institutions - incremental changes tend not to be sufficient to tip the equilibrium (Minniti, 2005). Even once a country has managed a significant enough exogenous shock to its institutions to escape from the underdevelopment equilibrium to a growth equilibrium, it is not easy to maintain this escape. Acemoglu and Robinson (2019, p.xvi) describe it as a narrow corridor from which a country can quickly become derailed because, ultimately, the rules of the game that are formalised in laws, regulations, and constitutions are “not worth much more than the parchment they are written on.”

Thus, how to affect an institutional transformation to escape from an underdevelopment trap and not fall back is also of interest to entrepreneurship scholars, given the importance of institutions for allocating entrepreneurship and vice versa. So far, the bulk of work dealing with institutional transformation has been outside of entrepreneurship scholarship –mainly in the fields of New Institutional Economics (see, e.g., Coase (1984)), New Economics of Organization (see, e.g. Moe (1984)), the broad field of political economy (see, e.g. Tabellini (2008)) and history (see, e.g. Greif (2006)).

New Institutional Economics and New Economics of Organization have framed the problem of institutional effectiveness and change as a contracting problem: the rules of the game and the play of the game are based on explicit contracts, as in the laws and constitutions, as well as on informal conventions and trusts - implicit contracts. These explicit and implicit contracts can fail because of high transaction costs (Williamson, 1981). These costs arise because of imperfect information and the bounded rationality of agents. These costs also explain why entrepreneurs create firms - not as production functions - but as governance structures to overcome high transaction costs (Coase, 1937). As North (1992, p.60) stressed, “when transaction costs are significant, then institutions matter.”

Williamson (1998b) further explains how contracting problems are due to transaction costs and applies a transaction costs approach to illuminate institutional change. In his transaction costs approach, four levels of institutions can be distinguished. Level 1, the social embeddedness level, consists of the informal institutions of society (the implicit contracts).

These include religion, traditions, customs, levels of trust, and norms. These institutions evolve over long time horizons to help societies deal with collective action and principal-agent problems - challenges that all human societies have faced since the dawn of time (Roth, 2009). Institutions change very slowly on this level, and change is measured in hundreds or even thousands of years (Williamson, 1998b). An example of the long persistence of level 1 institutions is the finding by Nunn and Wantchekon (2011) that levels of trust in African regions that suffered most during the slave trades are today, more than 100 years after the slave trades ended, still lower than in regions that did not suffer as much.

Level 2, the formal institutional environment, consists of what we have so far referred to as the rules of the game, including property rights, political participation - such as democratic or autocratic participation, and the bureaucracy and judiciary systems that maintain them. These institutions also change relatively slowly but, unlike level 1 institutions, changes can be usually observed between a decade and a century. According to Klimm (2022), using the random-walk theory, the typical lifetime of a democratic government is 244 years, and that of autocracy is 69 years. A reason why autocracies have shorter lifespans than democracies is that autocracies accelerate their demise by constraining productive entrepreneurship and, hence, economic development. As Olson (1993, p.567) explained, “Whenever an autocrat expects a brief tenure, it pays him to confiscate those assets whose tax yield over his tenure is less than their total value. This incentive plus the inherent uncertainty of succession in dictatorships imply that autocracies will rarely have good economic performance for more than a generation.”

Level 3 institutions comprise the governance layer - where the “play of the game” is overseen. In other words, level 3 is where the rules are enforced. It consists of the “institutions of governance” that determine how contracts are enforced. These institutions may change over one to ten years (Williamson, 1998b). Transaction costs economics focuses on level 3 - the institutions of governance, such as contract enforcement. As North (1992, p.8) pointed out

“In a world of perfect enforcement, there would be a third party impartially (and costlessly) evaluating disputed and awarding compensation to the injured party when contracts are violated. In such a world, opportunism, shirking and cheating would never pay. But such a world does not exist. Indeed, the difficulty of creating a relatively impartial judicial system that enforces agreements has been a critical stumbling block in the path of economic development. In the Western world the evolution of courts, legal systems, and a relatively impartial system of judicial enforcement has played a major role in permitting the development of a

complex system of contracting that can extend over time and space, an essential requirement for economic specialisation.”

Finally, level 4 institutions consist of the day-to-day optimisation of markets. “This is the level with which neo-classical economics and, more recently, agency theory have been concerned” (Williamson, 1998b, p.29). This is also primarily where Baumol’s typology is concerned. In essence, Baumol takes level 1 to 3 institutions as given, from which the allocation of entrepreneurship into productive, unproductive, and destructive follows. Thus, changing the allocation of entrepreneurship means changing level 1 to 3 institutions. Given the time scales, most policymakers would focus on improving level 3 institutions, where the easiest gains can be made. This makes the field of transaction cost economics highly relevant in understanding how to change the institutional environment in favour of productive entrepreneurship.

The implication of this literature for Baumol’s typology and entrepreneurship research is that entrepreneurial opportunism will result in poor economic outcomes in difficult or partial contract enforcement. Institutions are thus only as good as their ability to constrain opportunistic behaviour (unproductive entrepreneurship) where the social marginal cost exceeds the private benefit. Entrepreneurs perceive opportunities for self-enrichment because all contracts are inherently incomplete. We cannot contract for all eventualities due to cognitive, time and resource constraints. Thus, “not only does an incomplete contract contain gaps, errors, and omissions because of bounded rationality [...] mere promise, unsupported by credible commitments, is not self-enforcing by reason of opportunism” (Williamson, 1998b, p.31).

Non-productive forms of entrepreneurship are accordingly contracting problems. Boundedly rational agents may either deliberately contract -through the market or through firm creation - to achieve outcomes that are unproductive or even destructive from an entrepreneurial perspective, or they may subvert contracts by acting opportunistically to exploit the incomplete nature of these contracts. Baumol (1990) gave an example of this problem using the case of antitrust laws. In the USA, antitrust laws incentivises firms to take legal action against each other, wherein they claim to be victims of a violation to obtain compensation for claimed damages. This incentive exists due to the incompleteness of antitrust laws: boundedly rational lawmakers did not foresee all the unintended consequences of the laws. Moreover, opportunistic lawyers and firms exploit the incompleteness of antitrust laws to contract amongst themselves to exploit it.

The global financial crisis of 2008-2009 can similarly be argued to have resulted from contracting problems by rationally bounded agents. In that case, the core problem was mortgage contracts extended to households with no collateral and/or insufficient income to repay the mortgage. For as long as house prices kept on rising, banks could continue this practice. Moreover, they could contract with investors through sales of collateralised debt obligations (CDOs), thereby passing on the risk to the investors who, being boundedly rational, had neither the resources nor the ability to adequately evaluate the risk of investing in CDOs.

Therefore, changing the institutional environment in favour of productive entrepreneurship requires first changing level 3 institutions - having sufficient oversight to discourage opportunistic exploitation of incomplete contracts and plugging gaps in contracts. However, level 3 institutions may resist change, being determined by level 2 institutions, such as the judiciary and oversight system. As was pointed out, however, changing level 2 institutions can take a decade to a century. The global financial crisis is again an instructive example. Many banks were engaging in hazardous and opportunistic behaviour because of historically excessive and ad hoc regulations followed by deregulation imposed asymmetrically across different types of banks. One may argue that had those in level 2 institutions known and understood the implications of Baumol's (1990) allocation of entrepreneurial talent and the analyses of the New Institutional Economics on transaction costs and contracting failures (e.g., Williamson (1998a,b)), a global crisis may have been avoided or its extent curtailed.

The upshot is that ideas and beliefs matter, but ideas about ideas and how they influence level 2 and 3 institutions are subject to hysteresis - and to the belief systems embedded in level 1 institutions. These change very slowly, if at all, and often need a crisis (or crises) to nudge a system to tip over. The French, American, and Cultural Revolutions are apparent - and dramatic - examples where level 1 and 2 institutions tipped over in a relatively short period.

However, revolutions in ideas and governance can also be less dramatic and still far-reaching. Lal (2007, p.xii-xiii), for example, describes the legal and administrative revolution that catapulted property rights in the West to level 2 and 1 institutions and greatly incentivised productive entrepreneurship:

“It was due to the eleventh-century papal legal and administrative revolution of Pope Gregory VII that Western Europe alone broke from these dysfunctional material beliefs. The legal papal revolution created a church-state that protected property rights [...] This led to the Great Divergence, with the slow rise of the

West from the twelfth century onward until it overtook the other hitherto richer Eurasian civilisations by the eighteenth century.”

The results of *straight jacketing*, *distracting*, and *zombifying* entrepreneurship as discussed in section 4.1 are primarily due to the transaction costs associated with level 3 institutions since these costs result in weaker enforcement of institutions. For example, enforcement weaknesses play a role in straight-jacketing by allowing rent-seeking and regulatory capture (enforcement agencies are captured) to emerge. Similarly, in distracting entrepreneurship, enforcement weaknesses have allowed antitrust behaviour in the digital platforms industry and unfair “too big to fail” practices to emerge in banking and other industries. Regrettably, to the extent that these weaknesses arise and that they are accompanied by declines in R&D efficiency and scientific innovations, there is justifiable concern that the value of crucial level 2 institutions - such as democracy and scientific progress - is being slowly eroded. Klimm (2022), for example, uses a random walk model to describe the evolution of political regimes from 1800 to 2018 and predicts “an increase of autocracies for the next 50 years [...]. This indicates that the currently observed democratic backsliding might be a harbinger of further incline of partial democracies becoming autocracies.”

Similarly, Turchin (2023) using cliodynamics, predicts that the USA will continue to experience political disintegration through elite overproduction and population immiseration - with elite overproduction giving rise to inter-elite conflict and broader population immiseration providing fertile ground for populism. The predictions of Klimm (2022) and Turchin (2023) are consistent with Tainter (1988), who, studying the collapse of dozens of empires in the past, noted that societies create complex hierarchies (with extended bureaucracies) to solve collective action problems, but that, at some stage, the increased complexity results in diminishing marginal returns, at which point a form of regression in governance becomes impossible to escape.

5 Concluding Remarks

This chapter reflected the contemporary relevance of Baumol’s typology of productive, unproductive, and destructive entrepreneurship. Baumol’s contribution matters because it provides a simple, yet profound explanation of how formal and informal institutions influence entrepreneurial activity.

We critically discussed the usefulness of Baumol's typology for studying divergent development outcomes, measuring, and defining entrepreneurship motivations, understanding the dynamics of violent conflict, and helping to develop entrepreneurial ecosystems.

We found the typology relevant for helping to understand the contemporary challenge of explaining the Great Stagnation – the secular decline in business dynamics in recent decades. There have been several explanations put forward for the Great Stagnation, including declining aggregate demand related to demographic changes (the ageing and shrinking of western populations), increasing risk aversion, rising complexity, rising energy prices, and declining returns to energy investments in energy, and the gradual erosion of permissionless innovation.

To these, using Baumol's typology, we put forward the thesis that entrepreneurship has become less productive and less socially beneficial (the benefits are also less equally shared than before), partly due to the unintended effects of entrepreneurship policies adopted widely in Western economies in recent decades.

There are three types of entrepreneurship policies which we argued may be responsible. These policies, we argue, are policies that *straight jacket*, *distract* and *zombify* entrepreneurship. They contribute to the decline in productive entrepreneurship in absolute terms.

Furthermore, we argue that they have also engendered a relative decline in productive entrepreneurship, as unproductive forms of entrepreneurship have been increasing in many advanced economies. There are various interrelated reasons for this. These reasons include ideological views enacting policies leading to moral hazards, perverse incentives for businesses to reduce spending on innovation and competitiveness, and moral hazards due to government backing of large/dominant firms. These phenomena have important practical implications that contribute significantly to explaining why, since the late 1990s, we have seen the dot.com bubble, the global financial crisis, and a rise in cybercrime and cyberwarfare. Most recently, as many advanced western economies take steps towards net-zero carbon emissions by 2050 and increase investments in renewable energy sources, we are observing a growing demand for minerals and rare earths that are essential inputs into, for instance, solar and wind power and green nitrogen production, such as cobalt, lithium, nickel, manganese, iridium, and others. This is creating a new mineral boom which holds out the danger of a new natural resource curse and a new scramble for developing countries, incentivising unproductive and destructive entrepreneurship.

We have argued that strengthening and protecting the institutional environment in favour of productive entrepreneurship needs changing what is known in the literature as level 1

institutions - beliefs and norms. However, affecting these changes can take a long time, and there may be resistance to change given the influence of level 2 institutions, such as the judiciary and political oversight institutions. The challenge facing contemporary society is that there is justifiable concern that fundamental level 2 institutions - such as democracy and belief in the scientific process - are being slowly eroded in more developed economies. From Baumol's perspective, the Western institutional unravelling suggests that productive entrepreneurship will become scarcer.

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