

The consequences of short-term institutional change in the rule of law for entrepreneurship

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Abstract

Research Summary: Past research views institutions as stable and slow to change and uses institutional differences to explain cross-national variation in entrepreneurship. This article introduces a new perspective to institutional theory, that of short-term institutional change. Integrating insights from cognitive science allows us to theorize not just about the significance of short-term institutional change but also about why and how deterioration versus improvements in institutions have distinct effects. We test how short-term institutional change impacts entrepreneurship in a cross-country multilevel study. We find that short-term change in the rule of law affects entrepreneurial entry and that institutional deterioration weighs heavier than institutional improvement. We argue and find that changes in the rule of law are more consequential for entrepreneurship compared to changes in business regulations.

Managerial Summary: It is known that the quality of institutions affects individuals' decisions to pursue entrepreneurship. Yet, we newly investigate effects of year-to-year *changes* in national institutions. Not only changes in business regulations matter, but also changes in more fundamental institutional aspects, especially in the rule of law. We find that institutional change has an impact because, on its basis, potential

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entrepreneurs form expectations about the future and therefore about the riskiness of their investment. Deteriorations compared to improvements in the rule of law are more consequential for entrepreneurship, consistent with the fact that losses loom larger than gains in human decisions.

KEYWORDS

entrepreneurship, executive constraints, Global Entrepreneurship Monitor, institutional change, prospect theory, rule of law

1 | INTRODUCTION

The classic literature on institutions assumes that they are stable and slow to change (North, 2005; Williamson, 2000). That perspective has influenced comparative entrepreneurship research, which relies on institutions to explain cross-country differences in entrepreneurship (reviewed by Urbano, Aparicio, & Audretsch, 2019; Terjesen, Hessels, & Li, 2016). However, the emphasis on the stability of institutions means that the empirical reality of institutional changes has been overlooked. Especially, the consequences of short-term (year-to-year) institutional changes are poorly understood theoretically and empirically. Davidsson (2020) in his review of entrepreneurship and strategy research notes the absence of research on how changes in context may impact entrepreneurial activity. We agree with his call to consider change. To answer it, we take emerging research on institutional change (Mahoney & Thelen, 2010) as our starting point, yet we advance the behavioral assumptions underlying institutional theory. While at least since North (1990) institutional economists recognized the limitations of rational choice theory, less has been achieved moving forward to offer a replacement. We fill this gap with insights from prospect theory and more generally research on heuristics from cognitive science (Gigerenzer & Gaissmaier, 2011; Kahneman & Tversky, 1979) to theorize how and why short-term changes in formal institutions impact entrepreneurial entry. We focus on changes in the rule of law which critically shape how much uncertainty entrepreneurs have to cope with in their country context. Thus, we ask: *How does short-term institutional change impact individuals' decisions to enter entrepreneurship?*

Research on the impact of institutional changes is of theoretical and of practical importance (Mahoney & Thelen, 2010). Small institutional changes can accumulate to significantly larger change and first small changes may signal future trends (Acemoglu, Egorov, & Sonin, 2020) affecting an individual's willingness to invest time, energy, and other resources into starting a business. Such change may be especially consequential when it signals a downward trend of deterioration in institutions, which leads to higher uncertainty and increases the prospect of losses, to which individuals are particularly averse (Kahneman & Tversky, 1979). Compared to institutional deterioration, improvements in institutions enhance predictability about potential returns from entrepreneurs' efforts and may open up new opportunities. Both would render individuals more willing to invest time, energy, and

other resources into starting a business. Thus, integrating insights from cognitive science research allows us to theorize about the relevance of short-term institutional change for entrepreneurs' entry decisions and about differential effects of institutional improvement versus institutional deterioration.

We apply a multilevel theory design whereby entrepreneurs, as economic agents at the microlevel, respond to changes in the institutional environment at the macrolevel. We utilize a large multilevel dataset spanning 1.45 million individual observations from 15 years and up to 69 countries. We find support for our hypothesized effects. We also offer extensions to evaluate the robustness of our results, considering different time frames, alternative indicators of the rule of law, changes in regulation, as well as institutional change effects on different types of entrepreneurial efforts.

Our research contributes to institutional theory by introducing a new *dynamic* perspective on institutions. We newly conceptualize short-term gradual institutional change and theorize the role of institutional deteriorations and institutional improvements for entrepreneurship. This perspective complements the institutional theory literature in economics, sociology and management (e.g., Holmes, Miller, Hitt, & Salmador, 2011; Scott, 2005; Williamson, 2000), which does not examine or theorize the effects of short-term institutional changes but rather emphasizes the stability of institutions including in their effects on entrepreneurship (Baumol, 1996). Equally, historical analyses (e.g., North, 2005) describe institutional changes that unfold over decades or centuries rather than year-to-year or a few years. We demonstrate empirically that changes in fundamental institutions of the rule of law indeed take place over short periods (between 1 and 5 years) and meaningfully impact entrepreneurship. We also offer predictions and first analyses on how institutional change may impact different types of entrepreneurship including strategic, high-growth oriented activity. In sum, our work provides “proof-of-concept” that institutional change matters in line with calls for more attention to consider the consequences of *change* in contexts for entrepreneurship (see also Davidsson, 2020). We see much scope for future contributions that embrace a dynamic understanding of institutions in global strategy, international business, and comparative entrepreneurship research.

Moreover, to theorize the effects of institutional change we reexamine the microlevel assumptions of institutional theory and propose a *behavioral* lens that utilizes insights from cognitive science. This contrasts with past research which assumes that individuals respond to institutions only as fully rationally optimizing actors (e.g., Estrin, Mickiewicz, & Stephan, 2013; North, 1990, 2005; Williamson, 1985, 2000). Yet utilizing research on heuristics from cognitive science (Gigerenzer & Gaissmaier, 2011; Kahneman & Tversky, 1979) helps us to elaborate the behavioral assumptions of institutional theory and in turn, enables a more accurate understanding of the mechanisms of *how* and *why* institutions and institutional change affect individual economic activity such as entrepreneurial entry.¹ Specifically, considering individual's heuristic thinking as set out in cognitive science helps to understand *why* even short-term institutional change is significant and *why* institutional deteriorations weigh more heavily in deterring entrepreneurial entry than institutional improvements in spurring entry. Just like past research that assumes individuals react as rationally optimizing actors to institutions, we equally are unable to measure the microlevel processes at play. However, our findings are remarkably consistent with our predictions derived from cognitive science. Finally, our research follows calls by international strategy scholars who observe that institutional analysis can be enriched by integrating insights from disciplines such as psychology/cognitive science (Cuervo-Cazurra, Mudambi, & Pedersen, 2019).

2 | CONCEPTUAL FRAMEWORK AND HYPOTHESES

2.1 | Unbundling institutions

The function of institutions is to mitigate uncertainty and enhance human cooperation; the latter idea can be traced as far back as antiquity, see, for example, Cicero (1998) [51 B.C.] *De Re Publica*. The most fundamental level of institutions is the values and general principles held by society at large. This is what Ostrom (2008) calls the (a) *meta-constitutional* level institutions and Williamson (2000) terms *informal institutions*. These commonly held values and principles translate next into more specific (b) *constitutional institutions* (Brennan & Buchanan, 2000) also referred to as *political institutions* (Banalieva, Cuervo-Cazurra, & Sarathy, 2018). These are higher-order rules (Ostrom, 2008) that include the procedural rules about making rules. Constitutional institutions impose constraints on political agents engaged in the “process through which the rules are determined” so that they “may be acting *within the rules* (the political constitution) that constrain their behavior in *changing the rules*” (Brennan & Buchanan, 2000, p. 9; italics are theirs). In that way, these (political) constitutional institutions shape (c) *lower order rules* that determine the play of the game and include specific business regulations.

Constitutional institutions have a fundamental effect on businesses and entrepreneurs. Even if the lower order rules (regulations) are more directly experienced by entrepreneurs, the effect of regulations ultimately depends on the quality of constitutional institutions (Levie & Autio, 2011). Again, this is because the latter defines the boundaries for regulations (Levie & Autio, 2011) and describe how regulations may be introduced, modified and implemented (Ostrom, 2008; Williamson, 2000).

While Brennan and Buchanan (2000) focus on constitutional constraints imposed on politicians in making lower order rules, the notion of constitutional constraints is more extensive including the wider concept of the rule of law, seen by many as central to any institutional order (Skaaning, 2010). The rule of law is “a bulwark against arbitrary power” (Epstein, 2011, p. 191), or as further elaborated by Kasper, Streit, and Boettke (2012, p. 178): “The basic concept that underpins the rule of law is that political power can only be exercised on the basis and within the constraints of the law and that certain substantive and procedural institutions are needed to protect civic and economic liberties from arbitrary interventions by authorities.” The latter definition clarifies the two key elements bridged by the rule of law: constraints on the arbitrary power of the government are functionally linked to ensuring that both the individual’s “right to treatment as an equal” and other specific human rights (liberties) that follow from it (Dworkin, 1977, p. 273) are respected.

Concerning the economy, the protection of property rights forms part of the rule of law (Epstein, 2011). It places constraints on the likelihood of expropriation of entrepreneurs and businesses, and therefore mitigates uncertainty (Acemoglu & Johnson, 2005; Estrin, Korosteleva, & Mickiewicz, 2013). More specifically, the comparative entrepreneurship literature argues that enhancing the protection of property rights, through the rule of law, assists entrepreneurs in accessing the resources required to start business ventures, such as finance and capital (De Soto, 2000; Estrin et al., 2013).

A strong rule of law corresponds to a fair judicial system independent from the executive branch of the government (Epstein, 2011), ensuring that contracts are enforced and that property rights are secure, leading to lower transaction costs (Aron, 2000). A strong rule of law implies that everybody is treated equally and fairly by government agents (Kasper et al., 2012), reducing the scope for political opportunism such as corruption, clientelism, patronage, and

cronyism (Fukuyama, 2015). It thereby creates an inclusive society and a broad base for entrepreneurship (Acemoglu & Robinson, 2019). Taken together, because an effective rule of law creates greater predictability and less uncertainty for individuals to act, it can encourage individuals to invest time and resources into starting businesses. With an effective rule of law in place, entrepreneurs can be sure that the fruits of their venturing efforts are secure and that they will be the ones reaping the returns, rather than being subject to expropriation by the government or other agents (Estrin, Mickiewicz, & Stephan, 2016).

2.2 | Institutional change

2.2.1 | The relevance of institutional change

Until this point, in line with the established literature, our discussion has been static, focused on the level or quality of rule of law.² However, humans in their decisions consider not only the status quo; they also consider possible future directions of change (Banalieva et al., 2018). New economic projects—such as setting up a business—imply strategic investment in physical and human capital with the hope of future returns. Therefore, the assessment of future prospects matters to any type of strategic decision and may be based on observed directions of change in the environment. Both, Banalieva et al. (2018) and Easterly (2013) suggest that it is not just the institutional status quo, but also the direction of institutional change that affects the behavior of economic agents. While Banalieva et al. (2018) focus on changes in regulation, complementing our approach, in Easterly's (2013) assessment, the historical episodes of increased freedom (or in other words, decreases in the scope of arbitrary government) lead to mutually reinforcing processes of entrepreneurship and economic growth. Thus, the perception of how institutions evolve is at least as important as that of the status quo: investment and entrepreneurship happens when future prospects are attractive. One historical example is China: after political change in the late 1970s that implied less oppressive government, China saw an increase in entrepreneurship (Easterly, 2013; Huang, 2008). It was the promise of further improvements implicit in early Chinese political change alleviating the threat of mass repression, which unleashed a wave of rural entrepreneurship that helped to transform the economy and instill a trajectory of growth (Coase & Wang, 2012).³

2.2.2 | Short-term institutional change

While there are theoretical reasons and evidence that future prospects matter (Banalieva et al., 2018), the comparative entrepreneurship literature does not typically consider the effect of changes in institutions that may alter future prospects (see also Davidsson, 2020).

We refer to short-term institutional change as alternations in formal institutions (such as the rule of law or regulations) that typically take place gradually, evolving over periods of time, for example, 1–5 years, and which are the result of the social, negotiated character of institutions (Mahoney & Thelen, 2010). We discuss each of the elements of this definition in turn: the duration, the degree of change, and the negotiated character of institutions.

First, it helps to contrast the "short-term" with the long-term time scales over which institutions are argued to change. For instance, Williamson (2000) suggests that institutions evolve over decades or centuries. He cites the European Union as one example for such evolving

institutions. Thus, it strikes us as reasonable to define *short-term* change as taking place over a year up to 5 years, in contrast to long-term change spanning multiple decades and centuries. In turn, medium-term changes might be characterized as those extending for one to two decades. Again, because the literature considers institutions mostly as stable, we are on new ground setting out these parameters for the time scale of changes. We will offer first tests for short-term time frames in this article and invite future research to explore medium-term changes, once data to test these become available in the future.

Second, with regard to the degree of change, we argue that short-term institutional change will typically be gradual (limited change) rather than radical (substantial change). For the avoidance of doubt, short-term change can also be radical, fundamentally shifting or even replacing existing institutional arrangements. Such radical change is rare but highly consequential when it happens, and thus attracts attention. Examples of substantial institutional changes are revolutions, violent coups d'état's (Bylund & McCaffrey, 2017), or changes in political regime generated by more peaceful means (the implosion of the Soviet system in 1989–1990 in Central and Eastern Europe). We argue that most short-term institutional change, however, unfolds gradually in an evolutionary manner. Fukuyama (2015) documents historical examples of such gradual changes in countries like Britain or Prussia, both focused on strengthening the rule of law. A growing body of research argues that institutional change need not only happen through episodes of “institutional upheaval” or moments of abrupt and large transformation, but draws attention to gradual change that may accumulate over time into significant institutional transformation (Mahoney & Thelen, 2010).

Third, the negotiated character of formal institutions helps to explain why we see short-term gradual institutional change. Mahoney and Thelen (2010) argue that the institutional order is a function of active, ongoing “ambiguous compromises” among key actors. These compromises or settlements are relatively durable but always contested and “based on specific coalitional dynamics, they are always vulnerable to shifts” (Mahoney and Thelen (2010), p. 8). Swings in a balance of power, changes in environmental conditions, and “unforeseen changes in the ongoing distribution of resources” (Mahoney and Thelen (2010), p. 9) trigger efforts to reinterpret and modify the institutions, which is facilitated by the unavoidable “degree of openness in the interpretation and implementation of these rules” (Mahoney and Thelen (2010), p. 10). Therefore, institutions are changing continuously. Mahoney and Thelen (2010) consider that political institutions corresponding to constitutions, and in particular the rule of law, can evolve and shift in subtle ways over time, through endogenous developments.

If we accept that short-term institutional change is common and that it is typically gradual, then one of the difficulties for entrepreneurs starting their businesses will be to discern the direction of change in institutions. In some countries, the incremental change in the constitutional setup is gradually taking place, but its direction is never formally announced, as exemplified at the time of writing by an ongoing constitutional conversion⁴ away from the rule of law in Hungary and Poland.⁵ Nor are institutional changes constrained to emerging or formerly communist economies. In October 2020, the rating agency Moody's downgraded the UK credit rating partly in response to Covid spending but also citing concerns over “the weakening in the UK's institutions and governance”: “While still high, the quality of the UK's legislative and executive institutions has diminished in recent years.” (see Financial Times, October 17, 2020⁶). Alternatively, a gradual adjustment of institutions over a period of several years can also work toward creating stronger constitutional institutions, such as when the emerging economies strengthen the rule of law including the independence of their courts (e.g., at the time of writing, North Macedonia).⁷

2.3 | Institutional change and entrepreneurial entry

We define entrepreneurial entry in line with the occupational choice perspective as the individual decision to start a business (Gartner, 1988). This choice is shaped by individual characteristics of entrepreneurs, as well as by external enablers and inhibitors located in the environment (Davidsson, 2016, 2020; Davidsson, Recker, & von Briel, 2020). We focus on the environment, and our analyses control for the individual characteristics.

We posit that individuals need to perceive and assess the implications of continuous changes in these environmental enablers and inhibitors when deciding whether to enter entrepreneurship. Yet, a large body of literature rooted in cognitive science highlights that individuals' perception of their environment is filtered through heuristics and biases (Gigerenzer & Gaissmaier, 2011; Kahneman, 2011). This is particularly so when the environment is uncertain, for instance, when it requires making sense of the gradual changes in institutions. By applying heuristics, individuals focus selectively on specific information, rather than trying to process complete information and engage in complex decision-making methods as envisaged by rational agent models (Gigerenzer & Gaissmaier, 2011; Kahneman, 2011).⁸

In Kahneman and Tversky's seminal work (Kahneman & Tversky, 1979; Tversky & Kahneman, 1974), heuristics are depicted as biases that occur in situations of uncertainty, and they are contrasted with fully rational or "optimal" decision-making. Their foundational research program introduced prospect theory to economics and business research (Kahneman & Tversky, 1979). Today, cognitive science research in the tradition of Kahneman and Tversky recognizes heuristics as cognitive shortcuts that help individuals make *efficient* decisions in everyday settings (Gigerenzer et al., 1999; Kahneman, 2011).

This newer cognitive science research (Gigerenzer & Gaissmaier, 2011) shows that heuristics can be *adaptive* and represent *ecologically* (rather than perfectly) rational decision-making strategies "with the goal of making decisions more quickly, frugally, and/or accurately than more complex methods." (Gigerenzer & Gaissmaier, 2011, p. 454). Heuristics outperform more complex decision-making strategies that consider (more) complete information, especially in uncertain situations where full information is not available (Gigerenzer & Gaissmaier, 2011). This efficiency of heuristic decision-making explains why it is so widespread and persistently used, including by managers (Luan, Reb, & Gigerenzer, 2019; also: Lejarraga & Pindard-Lejarraga, 2020). In fact, if we were to consider all possible options and optimize every decision, then making even simple decisions would take so long that we would be unable to function in everyday life. Moreover, the efficiency of heuristics in uncertain situations suggests that they are a particularly useful tool to apply to entrepreneurship, as the decision to start a business is characteristically fraught with uncertainty (McMullen & Shepherd, 2006). In sum, individuals perceive the world around them including institutional change by applying cognitive shortcuts rather than "objectively reflecting" reality in all its detail.

Changes in the environment are one important cue that draws individuals' attention. In the words of Kahneman (2011, p. 202): "[w]hen an unpredicted event occurs, we immediately adjust our view of the world to accommodate the surprise." Thus, change is more important for heuristically operating individuals than stability, as it signals a potential need to adjust and adapt decision-making and to mobilize resources. If there is no change in the environment, individuals can continue to operate as they always have; they know and can predict their environment (Kahneman, 2011). Change, however, increases uncertainty and may imply either a threat that the individual needs to protect themselves from, or an opportunity that they may wish to take advantage of. Hence, it is ecologically rational for individuals to be attuned to

noticing change and overvalue the importance of recent changes (Gigerenzer et al., 1999; Tversky & Kahneman, 1974).

Changes in the rule of law are likely to be noticed precisely because the rule of law is so consequential for the returns that entrepreneurs can reap from their investment into starting a business. An improving rule of law means more constraints on arbitrary governments where property rights become more effective. This increases the chances that entrepreneurs benefit from their investments (rather than those returns being appropriated by arbitrary governments or being lost because contracts are poorly enforced and criminal acts not effectively punished). Hence, when the rule of law improves, the outcomes of entrepreneurship become relatively more predictable, and we may see an increase in entrepreneurial activity. It may well be that a short-term change in the rule of law will not be sustained, yet because change and recent events are particularly consequential in adaptive heuristic decision-making, even a short-term change will have an impact.

Where the rule of law is deteriorating, even to a small extent, prospecting entrepreneurs are faced with higher unpredictability. There is greater uncertainty whether their investments and efforts to start a business will result in the expected outcome, and an increased chance that the fruits of their labor will not yield the expected benefits. In sum, individuals likely reduce entrepreneurial activity when institutions deteriorate, and increase it when the rule of law becomes stronger. Thus, we posit:

Hypothesis (H1). *Changes in rule of law impact on the likelihood of entrepreneurial entry, such that improvements (deteriorations) in rule of law increase (diminish) the likelihood of entrepreneurial entry.*

2.4 | Institutional deteriorations versus improvements

So far, our arguments implied that entrepreneurs respond to changes in the rule of law in their environment in a symmetric fashion. However, insights on cognitive heuristics, especially the principle of loss aversion, suggest potential *asymmetric effects of the direction of institutional change* on an individual's decision to enter entrepreneurship (Estrin et al., 2017). Thus, deteriorations in institutions likely affect the decision of prospecting entrepreneurs through different mechanisms than institutional improvements, and the effect of deteriorations is stronger than that of improvements.

In line with the literature on institutional quality that describes the latter with reference to the rule of law (Rothstein, 2013), we define *institutional deteriorations* as institutional change that diminishes the rule of law leading to outcomes that are less fair and inclusive. In particular, a deterioration in the rule of law means that individuals can be less certain about the returns of their investments, as monetary returns may be appropriated by corrupt officials, and courts are more biased no longer guaranteeing fair outcomes. Moreover, diminished personal security that comes with more arbitrary government will also have an impact on entrepreneurs (Mickiewicz & Kaasa, 2020). *Institutional improvements* on the other hand refer to institutional change that leads to fairer and more inclusive institutions (Rothstein, 2013).

Critically, institutional deteriorations and improvements have different psychological effects on individuals' decision-making (Banalieva et al., 2018). Crucial for understanding the effects of institutional deterioration on entrepreneurship is the role of *loss aversion* postulated by prospect theory. It states that individuals are more sensitive to losses and threats than they are to gains

and opportunities of equal size (Barberis & Thaler, 2003; Kahneman & Tversky, 1979; Tversky & Kahneman, 1992).⁹ Again, this is ecologically rational as losses and threats are more consequential for the individual, leading to potential harm and depleting resources (Hobfoll, 1989). Such situations are difficult, both psychologically and practically, as they imply a loss of control over one's life and enhance uncertainty. This is what a deteriorating rule of law implies: if governments become more arbitrary, courts less fair, and property rights poorly enforced, then the prospecting entrepreneur has less control over what happens. The success of their start-up efforts and their eventual returns are less under their control and hence more uncertain.

In turn, institutional improvements enhance entrepreneurs' predictability, give them confidence that they can reap the rewards of their investments into starting a business; they may also open up new opportunities for businesses. By contrast, when institutions deteriorate, investment is more likely to be put on hold due to increased uncertainty and higher risk of expropriation. Thereby entrepreneurs make sure they do not stand out, as working on high-value business opportunities could make them attractive targets of expropriation by either officials or criminals (Kistruck, Webb, Sutter, & Bailey, 2015; Sutter, Webb, Kistruck, Ketchen Jr, & Ireland, 2017). Because higher value projects will be dropped, the overall number of entrepreneurial projects will decrease as well.

In sum, our discussion suggests that deteriorations in rule of law will have a more pronounced impact on entrepreneurial activity than institutional improvements. In other words, institutional change has asymmetrical effects, with deteriorations weighing more heavily than improvements.¹⁰ Thus, we posit:

Hypothesis (H2). *Institutional deteriorations (in the rule of law) have more pronounced impact on the likelihood of entrepreneurial entry compared to institutional improvements (in the rule of law).*

3 | DATA AND METHODS

3.1 | Datasets

To test our hypotheses, we combine Global Entrepreneurship Monitor (GEM) data on working-age individuals, with data on institutions from the Polity IV project. For the control variables, we use information from the Heritage Foundation/Wall Street Journal and World Bank. We drew our sample from every country surveyed in GEM, available at the time of writing; however, missingness in some macrovariables was a limiting factor resulting in data on up to 69 countries. Thus, our starting point is a cross-country multilevel panel data of individuals for the period 2001–2015. The GEM project utilizes harmonized cluster sampling, normally of at least 2,000 individuals per country to identify nascent entrepreneurs. It measures individual characteristics of both nonentrepreneurs and entrepreneurs, and different aspects of entrepreneurship (Bosma, Coduras, Litovsky, & Seaman, 2012). GEM identifies adults engaged in entrepreneurial activity, including self-employment. It provides an internationally comparable dataset that is widely used for entrepreneurship research (e.g., Bowen & de Clercq, 2008; Freytag & Thurik, 2010; Valdez & Richardson, 2013). The sampling procedure is reviewed by Reynolds et al. (2005). More generally, as discussed by Davidsson (2016), the GEM project offers the best available set of indicators measuring entrepreneurial engagement harmonized across countries.

The advantage of using the individual-level variables instead of averaging the effects at country level is that we get stronger individual-level controls (matched for individuals). Second, averaging at the country level alone does not account for within-country heterogeneity in variables: averages tell us little about the actual distributions of characteristics used in the models. These characteristics may be highly skewed, making country-level means questionable measures if not accompanied by corresponding individual variables.

3.2 | Dependent variable

Reynolds et al. (2005) discuss how the dependent variable we use is assembled. It is the GEM construct of the nascent entrepreneur; an indicator variable that takes the value of 1 if the GEM questionnaire-defined criteria are met and of 0 otherwise. These criteria focus on individuals who moved from having a business idea to taking concrete steps to start a new venture. At the same time, the business has not been operational for more than 3 months, that is, it has not yet transferred from the nascent start-up phase to the phase of new business. Nascent entrepreneurship is a popular dependent variable in the empirical literature (e.g., Estrin et al., 2016 for an application; and Davidsson, 2016 for an overview), because it suffers less from simultaneity (endogeneity) vis-à-vis some of the characteristics of individuals and from selection bias. Nascent entrepreneurship conceptually captures the notion of “new entry” well, as it focuses on the first steps toward starting a business and thus is not subject to survival bias (whereby only certain start-up efforts are successful; Davidsson, 2016). Thus, nascent entrepreneurship is a pure and direct measure of early stage entrepreneurship.

3.3 | Independent variables and controls

3.3.1 | Rule of law

Following the recommendations derived from Munck and Verkuilen's (2002) comparative analysis of the quality of institutional indicators, we use data from the Polity project as it is seen as superior to extant alternatives in terms of its methodology. The Polity project originated with the University of Maryland and is now run by the Centre for Systemic Peace. Its unit of observation is “the polity” that is government or formal political organization defined spatially. The variables included define the characteristics of the polities, which in most cases are recognized countries (Marshall, Jaggers, & Gurr, 2016).

In our theoretical discussion, we emphasized two connected elements of the rule of law: (a) institutional checks and balances and (b) individual rights. Following Møller and Skaaning (2012), we consider the first element to condition the second, and therefore we focus on the former in our core empirical tests. The most clear-cut indicator of the institutional checks and balances available from the Polity dataset relates to the *Effective constraints on the executive branch of the government*. In the seminal paper, Acemoglu and Johnson (2005) demonstrated that it has a stronger impact on key economic outcomes compared to contracting institutions. The level of executive constraints is measured as the “extent of institutionalized constraints on the decision-making powers” of the executive branch of the government (Marshall et al., 2016). It ranges from 1 (few) to 7 (high) levels of constraints. Higher levels of constraints include the power of a strong and independent judiciary system, able to contain

illegal activities of the executive. Examples of the use of this indicator in empirical business research include Estrin, Korosteleva, and Mickiewicz (2013); Estrin, Mickiewicz, and Stephan (2013); Estrin et al. (2016) on entrepreneurship, and Besley and Mueller (2018) on foreign direct investment. We will use this measure in the main tests of our hypotheses.

However, we are evaluating changes (over 1 year, and over 5 years) rather than levels, and as emphasized in the methodological discussion by the Polity project team, the evaluation of annual changes in this indicator comes with some measurement error since independent evaluations of short-term change made by experts sometimes differ (Marshall et al., 2016).¹¹ A composite measure that captures a number of significant changes across a range of indicators of constitutional institutions, even if less focused, may have therefore an advantage. A departure from the rule of law in one aspect may be difficult to evaluate; but several parallel departures will be more visible.

This measurement issue motivated us to also include a more composite measure from the Polity IV database: the *Institutionalized Democracy* index. The *Institutionalized Democracy* index is assessed on a scale from -10 to $+10$, with $+10$ being most democratic. It combines (a) the executive constraints as above, with two other elements: (b) individual rights and (c) electoral processes “through which citizens can express effective preferences about alternative policies and leaders” (Marshall et al., 2016, p. 14). The definition of the rule of law proposed by Kasper et al. (2012) that we adopted includes the first two elements. However, the definition we use excludes the third element. Yet, the electoral process can become part of the rule of law construct either because individual rights also include rights to political representation, or because the electoral process imposes the ultimate effective constraints on the executive. At the same time, the inclusion of electoral democracy leads to tension with other elements of rule of law because of the possibility of majoritarian tyranny (Epstein, 2011).

Let us consider this issue further. Procedures and conditions conducive to political competition, when effective, are seen as the defining feature of democracy in a narrow sense (Przeworski, Alvarez, Cheibub, & Limongi, 2000). This competition may help to strengthen checks on the arbitrariness in the government, because each political party faces a realistic chance of losing elections and is therefore more inclined to act with some self-restraint. Yet, it can also undermine the rule of law because a majority can make decisions that undermine rights of minorities (Epstein, 2011; Møller & Skaaning, 2012) destroying, therefore, the condition of equal respect and treatment.¹² Hence, in our view, including the electoral process makes the *Institutionalized Democracy* index a noisier measure of the rule of law, even if electoral processes are included in some theory interpretations of the rule of law (Møller & Skaaning, 2012).

Note that while the *Institutionalized Democracy* index is assessed on a scale of -10 to $+10$, the executive constraints measure ranges from 1 to 7. The differences in scales between the two measures imply that the size of the effects is not directly comparable.

3.3.2 | An alternative take: rule of law as law and order

While we established a clear link from our theory to empirical measures, alternative conceptualizations of the rule of law exist. In particular, *Rule of Law* is part of the World Development Indicators from the World Bank (Kaufmann, Kraay, & Mastruzzi, 2010), which is popular in empirical business research (see discussion in Cuervo-Cazurra, Gaur, & Singh, 2019). This World Bank measure compiles a large number of indicators, and stresses a result-oriented

dimension of order and protection from fellow citizens, included in some interpretations of rule of law. In turn, it does not include the dimension of individual rights beyond the right to property (Møller & Skaaning, 2012; Skaaning, 2010). In our view, protection of other human rights including personal security is part of rule of law, and impacts entrepreneurship (Mickiewicz & Kaasa, 2020). Nevertheless, given the popularity of the World Bank measure of rule of law, we run tests using it as an alternative.

3.3.3 | Change in the rule of law

We calculate change in the rule of law by subtracting the score in the previous year ($t-1$) from that in the current year (t). As an alternative measure to these 1-year changes, we also include 5-year changes subtracting the value in year $t-5$ from that in year t . We do this for each year in our dataset. Thus, improvements in the rule of law have a positive sign and deteriorations a negative sign on our institutional change variable. All analyses control for the initial level of institutions (either year $t-1$ or $t-5$ correspondingly) to avoid biased coefficients for change (Bergh & Fairbank, 2002).

Over the time period, we evaluate institutional change, we notice that for *Constraints on the executive*, the following countries showed annual increases between 2001 and 2015: Argentina, Burkina Faso, Guatemala, Indonesia, Pakistan, and Thailand (twice). While levels of *Constraints on the executive* decreased in Russia, Thailand (twice), and Venezuela. As discussed above, the *Institutionalized Democracy* index is more fine-grained, and in addition to the countries listed above, it also detects increases in Chile, Croatia, and Poland, and decreases in Belgium and the Czech Republic, during the same period. Overall, Thailand is the most institutionally volatile with multiple episodes of increases and decreases in the rule of law.

In turn, calculating changes in the World Bank *Rule of law* measure is problematic. This indicator is generally ill-suited for comparison across time, because it is normalized for each year separately with zero mean and unit standard deviation (for criticism, see Skaaning, 2010). For models, for which we will distinguish between negative and positive change (Table 5), we alleviate the problem by categorizing the World Bank measure, taking 33 and 67% centiles as cut-off points; this way we analyze three categories: substantial negative change, little change, substantial positive change.

3.3.4 | Regulatory institutions

While we focus on the rule of law, we also need to control for the entrepreneurship-relevant elements of the regulations. We include an aggregate indicator that may be considered as most directly related to entrepreneurship: the *Business Freedom index* from Heritage Foundation/Wall Street Journal database. It includes measures related to the difficulty of starting a business, obtaining licenses, and closing a business (Miller, Kim, & Holmes, 2015). Examples of earlier cross-country empirical work that focuses on the regulation of entry (and other aspects of regulation) and utilizes GEM data can be found in McMullen, Bagby, and Palich (2008); Ardagna and Lusardi (2010); Levie and Autio (2011); Aidis, Estrin, and Mickiewicz (2012). Just as with the rule of law variables, we compute year-to-year changes (first differences) of this indicator and include the initial levels.

3.3.5 | Further control variables

The likelihood of an entrepreneurial entry is not only influenced by institutions but also by other environmental (country) features, and by the individuals' entrepreneurial skills and traits. With respect to the environmental features, we include indicators that capture the key economic conditions that may affect entrepreneurial entry decisions: *annual real GDP growth rate* that indicates the range of economic opportunities,¹³ *inflation rate* that proxies for another source of uncertainty (alongside institutions) on the macroeconomic level, the *level of economic development* that may affect the attractiveness of entrepreneurship (proxied by GDP per person employed), and income inequality (*Gini coefficient*) that may affect patterns in access to resources needed for entrepreneurship. All these economic data are taken from World Bank, except for income inequality which comes from United Nations.¹⁴ The inclusion of such country features is common in comparative entrepreneurship research to rule out alternative explanations (e.g., Estrin et al., 2013; Gutiérrez-Romero & Méndez-Errico, 2017).

We use indicators from the GEM survey to control for individual characteristics. We enter these into our models in two forms, taking advantage of the multilevel structure of our data: as individual observations and as country-year means, which corresponds to the Mundlak-type modeling (Mundlak, 1978; see also Bell, Fairbrother, & Jones, 2019). This way we distinguish between the direct individual influences of all these characteristics and their environmental effects. For example, we include both the individual variable representing the respondent's involvement in another established business (for serial entrepreneurship), and the working-age population prevalence rate of established businesses, calculated from the individual data aggregated up to country-year means. The same logic relates to other variables: representing that an individual discontinued a business in the last 12 months; acted as a business angel in the past 3 years; their age and age squared; gender; and educational achievement.

Table 1 below presents a list of the variables used in this study and their description and sources, Table 2 contains descriptive statistics. Correlation table is available as Table A1 in the online Appendix.

3.4 | Estimation strategy

There is a considerable body of literature on the most appropriate estimators for multilevel data. We follow the recommendation of Bell et al. (2019) who argue that the Mundlak type models are superior and more general compared to fixed-effects models. In addition, we follow the recommendation by Cameron and Miller (2015) and include country (not country-years) random effects alongside annual dummies. Furthermore, as advised by Cameron and Miller (2015), we also account for the Level 2 clustering effect, modeling SEs in a specific way they recommend for discrete choice models that is by including *vce(exchangeable)* option in Stata.¹⁵

Given that we face a dichotomous outcome variable (being involved in nascent start-up activity or not), either the logit or the probit is appropriate as a link function between the expected values of the outcomes and the information within our set of explanatory variables. These two link functions typically render very similar results, yet logit is far less intensive computationally and it also comes with the possibility of transforming the coefficients into odds ratios. The latter facilitates interpretation as a direct measure of the size of the effect in response

TABLE 1 Description of variables

Variable	Description	Source
<i>Dependent variable</i>		
Involvement in nascent entrepreneurial activity	Individual (between the age 18 and 64) is involved in starting their own business in nascent stage (GEM definition, please see Reynolds et al. (2005), for full description of the criteria) = 1, otherwise 0	GEM, 2001–2015
<i>Independent variables: Country-year level</i>		
Executive constraints index	Scores from 1 = “unlimited authority” to 7 = “executive subordination”; the higher the value, the less arbitrariness in the decision-making powers of chief executives (Marshall et al., 2016)	Center for Systemic Peace: Polity IV project, 1996–2015
Institutionalized Democracy index	Eleven point scale (0–10), ranging from 0 (least democratic) to ten (most democratic). A composite index combining executive constraints (about 50% weight) with competitiveness and openness of the political process	Center for Systemic Peace: Polity IV project, 1996–2015
Rule of Law	“[T]he extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence” (Kaufmann et al., 2010, p. 6). Secondary data: multiple sources compressed into one indicator, see: http://info.worldbank.org/governance/wgi/Home/Documents#wgiDataSources	World Bank: Worldwide Governance Indicators, 1996–2015
Business Freedom	The business freedom score encompasses 10 components, all weighted equally; composite index based on data from the World Bank’s “East of doing business” project	Heritage Foundation 1996–2015
GDP per person employed	GDP per person employed is GDP divided by total employment in the economy. PPP GDP converted to 2011 constant international USD, PPP	World Bank, 2001–2015
Annual inflation	Inflation as measured by the annual growth rate of the GDP implicit deflator (the ratio of GDP in current local currency to GDP in constant local currency)	World Bank, 2001–2015
GDP growth	Annual percentage growth rate of GDP at market prices based on constant local currency. Based on constant 2010 USD	World Bank, 2001–2015
<i>Independent variables: Individual level</i>		
Age	Age of the respondent in years	GEM, 2001–2015
Female	Gender of the respondent is female = 1	

TABLE 1 (Continued)

Variable	Description	Source
Education	Highest achieved level of education categorized into: Primary and less (reference), some secondary, secondary, tertiary	
Owner/manager established business	Manages and owns business older than 42 months	
Discontinued business	Discontinued a business in past 12 months	
Financed new business	Financed another business in the last 3 years	

Note: GEM sourced individual level variables are also introduced as country-year means in estimated models. Abbreviations: GDP, gross domestic product; GEM, Global Entrepreneurship Monitor; PPP, Purchasing power parity.

to the one unit increase in an explanatory variable. Therefore, we apply logit models, which are computed in Stata. The general structure of our models takes the following form:

$$\begin{aligned} \Pr[(\text{Nascent entrepreneurship})_{i,t} = 1] = & \text{logistic} [\beta_0 + \beta_1 (\Delta \text{Rule of Law Index})_{i,t} \\ & + \beta_2 (\text{Rule of Law Index})_{i,t-1} + \beta_3 (\Delta \text{Regulatory Index})_{i,t} + \beta_4 (\text{Regulatory Index})_{i,t-1} \\ & + \mathbf{X}\beta_5 + \mathbf{Z}\beta_6 + d_t + u_i] \end{aligned}$$

As already mentioned, to eliminate bias, we follow good practice and always supplement our institutional change variables with the initial values of these variables in levels (Bergh & Fairbank, 2002), as reflected in the specification above. \mathbf{X} represents a matrix of control variables at the individual level we discussed, and \mathbf{Z} relates to the country-year level controls; both are accompanied by vectors of coefficients. The last two terms represent annual dummy variables and country random effects correspondingly.

Last but not least, we follow the best practice of centering the continuous variables in the interaction term on zero.

3.4.1 | Overview of estimations

The first set of results is presented in Table 3.¹⁶ The specifications follow the model presented above and relate entrepreneurial entry to the change in rule of law. The models in Table 3 alternate using the three different institutional indicators discussed above. Next, in Table 4, we replace annual change with change over 5 years. The focus of these two sets of models is on testing Hypothesis (H1).

Table 5 offers specifications where we categorize change in the rule of law into three categories, so that we may distinguish between the effects of negative and positive change, in order to assess Hypothesis (H2). In these models, “no change” is our benchmark; this is the most frequent category and we adhere to good practice in using the most frequent category as the reference category.

TABLE 2 Descriptive statistics

Variable	Mean	SD	Min	Max
<i>Individual level variables</i>				
Nascent entrepreneur	0.054	0.226	0.0000	1.0000
Age	40.203	13.039	16.000	64.000
Female	0.521	0.500	0.0000	1.0000
Education: Some secondary	0.242	0.428	0.000	1.000
Education: Secondary	0.333	0.471	0.000	1.000
Education: Tertiary	0.364	0.481	0.000	1.000
Owner/manager of established bus	0.076	0.265	0.000	1.000
Discontinued a business	0.037	0.188	0.000	1.000
Financed a business	0.042	0.200	0.000	1.000
<i>Country level variables</i>				
Executive constraints (1 year change)	0.002	0.215	−4.000	3.000
Executive constraints (level)	6.395	1.268	1.000	7.000
Democracy (1 year change)	−0.006	0.449	−14.00	6.000
Democracy (level)	8.539	2.668	−10.000	10.000
Rule of Law, World Bank (1 year change)	0.003	0.076	−0.278	0.445
Rule of Law, World Bank (level)	0.797	0.928	−1.623	2.100
Business freedom (1 year change)	0.559	3.865	−21.000	26.000
Business freedom (level)	75.071	12.913	35.300	100.00
Mean age	42.062	4.471	25.393	62.116
Mean female	0.522	0.042	0.000	0.730
Mean education: Some secondary	0.250	0.173	0.000	0.904
Mean education: Secondary	0.327	0.141	0.000	0.775
Mean education: Tertiary	0.358	0.168	0.000	0.941
Mean owner/manager of established bus	0.075	0.046	0.000	0.378
Mean discontinued a business	0.036	0.037	0.000	0.303
Mean financed a business	0.041	0.035	0.000	0.293
GDP per person employed (const. 2011 PPP\$)	64.157	30.104	1.814	203.704
Annual inflation	3.645	5.071	−15.713	56.502
GDP annual growth	2.544	3.371	−14.332	26.276
Income inequality (Gini coefficient)	35.914	8.133	22.000	72.000

Abbreviation: PPP, Purchasing power parity.

4 | RESULTS

4.1 | Results of hypotheses tests

The results in Table 3 provide support for Hypothesis (H1): for all three indicators, the odds ratios for short-term change (year-on-year) in the rule of law on entrepreneurial entry are

TABLE 3 Effects of 1-year changes in the rule of law on nascent entrepreneurship

	(1)			(2)			(3)		
	O. R.	SE	p	O. R.	SE	p	O. R.	SE	p
<i>Institutional indicators (change and level)</i>									
Executive constraints: 1 year change	1.098	0.022	0.00						
Executive constraints: 1 year lag	1.152	0.025	0.00						
Institutionalized Democracy: 1 year change				1.054	0.010	0.00			
Institutionalized Democracy: 1 year lag				1.090	0.011	0.00			
Rule of Law (WB): 1 year change							1.770	0.131	0.00
Rule of Law (WB): 1 year lag							1.260	0.063	0.00
<i>Control variables (individual level)</i>									
Age	1.114	0.002	0.00	1.114	0.002	0.00	1.115	0.002	0.00
Age squared	0.999	0.000	0.00	0.999	0.000	0.00	0.999	0.000	0.00
Female	0.629	0.005	0.00	0.629	0.005	0.00	0.629	0.005	0.00
Education = some secondary	1.096	0.023	0.00	1.095	0.023	0.00	1.107	0.023	0.00
Education = secondary	1.291	0.025	0.00	1.291	0.025	0.00	1.294	0.025	0.00
Education = tertiary	1.657	0.033	0.00	1.657	0.033	0.00	1.657	0.032	0.00
Manages and owns business >42 months	0.701	0.011	0.00	0.701	0.011	0.00	0.686	0.011	0.00
Discontinued a business in past 12 months	2.241	0.033	0.00	2.242	0.033	0.00	2.225	0.033	0.00
Financed new business(es) in past 3 years	2.076	0.029	0.00	2.076	0.029	0.00	2.076	0.029	0.00
<i>Control variables (country level)</i>									
Business Freedom: 1 year change	0.997	0.002	0.07	0.997	0.002	0.07	0.997	0.002	0.12
Business Freedom: 1 year lag	1.003	0.001	0.00	1.004	0.001	0.00	1.003	0.001	0.00
GDP per person employed (const. PPP)	1.000	0.001	0.82	0.999	0.001	0.46	0.998	0.002	0.19
Inflation, GDP deflator (annual %)	1.001	0.002	0.46	1.002	0.002	0.23	1.005	0.002	0.00
GDP growth (annual %)	1.003	0.002	0.13	1.003	0.002	0.08	1.003	0.002	0.13
Income inequality (Gini coefficient)	1.002	0.002	0.34	1.002	0.002	0.36	1.003	0.002	0.15
Mean age	0.828	0.024	0.00	0.826	0.024	0.00	0.831	0.025	0.00
Mean age squared	1.002	0.000	0.00	1.002	0.000	0.00	1.002	0.000	0.00
Share of females	0.478	0.091	0.00	0.479	0.091	0.00	0.382	0.074	0.00
Share of those with some secondary ed.	0.238	0.025	0.00	0.251	0.026	0.00	0.244	0.026	0.00
Share of those with secondary ed.	0.140	0.015	0.00	0.146	0.016	0.00	0.159	0.018	0.00
Share if those with higher ed.	0.132	0.015	0.00	0.137	0.016	0.00	0.136	0.016	0.00
Share of established business owners	7.533	1.506	0.00	7.244	1.442	0.00	12.60	2.57	0.00
Share of those who discontinued bus.	12.78	3.89	0.00	12.43	3.78	0.00	16.39	5.09	0.00
Share of those who financed bus	602.47	177.68	0.00	518.86	153.48	0.00	543.82	162.73	0.00
Constant	0.97	0.66	0.96	1.17	0.79	0.81	1.81	1.26	0.39

Note: Dependent: Actively involved in start-up effort, owner, no wages yet = 1. Logit models, odds ratios reported instead of coefficients in the first column (odds ratios >1 indicate a positive effect, those <1 a negative effect); second column: exponentiated robust SEs; third column: probability value. 1 year lag—refers to the initial level of the institutional variable at year $t-1$, see Section 3. Country and year dummies included but not reported. Models 1 and 2 based on 1,459,199 individual observations and 68 countries. Model 3 based on 1,413,914 observations and 69 countries.

TABLE 4 Effects of 5-year changes in the rule of law on nascent entrepreneurship

	(1)			(2)			(3)		
	O. R.	SE	p	O. R.	SE	p	O. R.	SE	p
<i>Institutional indicators (change and level)</i>									
Executive constraints: 5 years change	1.117	0.020	0.00						
Executive constraints: 5 years lag	1.074	0.023	0.00						
Institutionalized Democracy: 5 years change				1.070	0.009	0.00			
Institutionalized Democracy: 5 years lag				1.073	0.011	0.00			
Rule of Law (WB): 5 years change							1.004	0.010	0.65
Rule of Law (WB): 5 years lag							1.258	0.065	0.00
<i>Control variables (individual level)</i>									
Age	1.114	0.002	0.00	1.114	0.002	0.00	1.113	0.003	0.00
Age squared	0.999	0.000	0.00	0.999	0.000	0.00	0.999	0.000	0.00
Female	0.630	0.005	0.00	0.630	0.005	0.00	0.655	0.006	0.00
Education = some secondary	1.096	0.023	0.00	1.097	0.023	0.00	1.120	0.024	0.00
Education = secondary	1.289	0.025	0.00	1.290	0.025	0.00	1.295	0.026	0.00
Education = tertiary	1.657	0.033	0.00	1.657	0.033	0.00	1.666	0.033	0.00
Manages and owns business >42 months	0.702	0.011	0.00	0.702	0.011	0.00	0.646	0.012	0.00
Discontinued a business in past 12 months	2.246	0.033	0.00	2.246	0.033	0.00	2.144	0.036	0.00
Financed new business(es) in past 3 years	2.067	0.029	0.00	2.067	0.029	0.00	1.949	0.031	0.00
<i>Control variables (country level)</i>									
Business Freedom: 5 years change	0.999	0.001	0.55	0.999	0.001	0.50	0.993	0.002	0.00
Business Freedom: 5 years lag	1.007	0.001	0.00	1.008	0.001	0.00	0.996	0.002	0.11
GDP per person employed (const. PPP)	1.000	0.001	0.98	0.999	0.001	0.63	0.996	0.002	0.02
Inflation, GDP deflator (annual %)	1.002	0.002	0.36	1.002	0.002	0.17	0.993	0.002	0.00
GDP growth (annual %)	1.001	0.002	0.56	1.001	0.002	0.62	1.009	0.002	0.00
Income inequality (Gini coefficient)	1.000	0.002	0.89	1.000	0.002	0.94	0.991	0.002	0.00
Mean age	0.846	0.025	0.00	0.833	0.024	0.00	0.854	0.030	0.00
Mean age squared	1.002	0.000	0.00	1.002	0.000	0.00	1.002	0.000	0.00
Share of females	0.597	0.114	0.01	0.573	0.109	0.00	0.223	0.053	0.00
Share of those with some secondary ed.	0.214	0.023	0.00	0.212	0.023	0.00	0.167	0.021	0.00
Share of those with secondary ed.	0.128	0.014	0.00	0.122	0.014	0.00	0.081	0.011	0.00
Share if those with higher ed.	0.119	0.014	0.00	0.117	0.014	0.00	0.074	0.010	0.00
Share of established business owners	4.955	1.012	0.00	5.768	1.172	0.00	9.480	2.342	0.00
Share of those who discontinued bus.	9.385	2.869	0.00	9.485	2.892	0.00	42.67	21.62	0.00
Share of those who financed bus	850.24	253.33	0.00	819.00	243.57	0.00	128.25	55.04	0.00
Constant	0.67	0.45	0.55	0.89	0.60	0.86	7.02	5.88	0.02

Note: Dependent: Actively involved in start-up effort, owner, no wages yet = 1. Logit models, odds ratios reported instead of coefficients in the first column (odds ratios >1 indicate a positive effect, those <1 a negative effect); second column: exponentiated robust SEs; third column: probability. 1 year lag—refers to the initial level of the institutional variable at year $t-1$, see Section 3. Country and year dummies included but not reported. Models 1 and 2 based on 1,455,705 individual observations and 67 countries. Model 3 based on 1,019,788 observations and 66 countries.

highly significant and greater than one, implying a positive effect of institutional change on entrepreneurship as expected. In sum, the likelihood of an individual's engagement in nascent entrepreneurship changes in the same direction as the rule of law, independent of how the latter is measured. For changes over a 5-year period (Table 4), the results are again highly significant for the two measures based on the Polity dataset, but not for the World Bank one. Yet because of annual normalization, by construction there is a lot of noise in the 5-year comparisons for the World Bank variable; they are highly problematic.

Hypothesis (H2) examines the differential effect of the direction of change in the rule of law (whether the rule of law improves or deteriorates) on entrepreneurial entry. Results in Table 5 show a highly significant negative effect of deterioration in the rule of law on entrepreneurship for all indicators. In contrast, all the effects of the increase in the rule of law are insignificant. While this is consistent with Hypothesis (H2), we employ a more rigorous approach, applying a post-estimation test that compares: (a) the difference in coefficients between “no change” and “negative change,” against (ii) the difference in coefficients between “positive change” and “no change.” As based on the postestimation test, the effect is highly significant for all three indicators. For *Executive constraints*, we get $\chi^2 = 16.72$, $p < .001$, likewise for *Institutionalized Democracy*, we obtain $\chi^2 = 21.47$, $p < .001$, and for the World Bank's *Rule of law* measure the result is equally strong: $\chi^2 = 48.24$, $p < .001$. Thus, overall we find clear support for Hypothesis (H2) that deteriorations in the rule of law have a more pronounced effect on entrepreneurship than improvements.

4.2 | Additional results

In our additional results, we consider change in regulations as a further set of institutions likely to be relevant for entrepreneurial entry. We then test whether the effects of institutional change on entrepreneurial entry differ for different types of entrepreneurs including those high and low in human capital (education), and characterized by high and low growth expectations.

4.2.1 | Regulation

First, the *level* of liberal start-up regulations, as measured by the *Business Freedom* index, has a consistent short-term positive impact on entrepreneurship. The results are highly significant in all but one of the reported models in Tables 3–5. Interestingly, however, unlike the rule of law, *change* in start-up regulations do not have any explanatory power: the results are consistently insignificant in all models in Tables 3–5 (at the conventional 0.05 level) except one where the coefficient comes with an unexpected sign; it seems that forward-looking expectations of the entrepreneurs are not affected by changes in start-up regulations.

To be more confident of this sharp contrast between the way change in the rule of law versus in *Business Freedom* affect entrepreneurship, we explored this issue further, replacing *Business Freedom*, with two other indices of regulation from the Heritage Foundation/Wall Street Journal database that may affect entrepreneurial entry: *Trade Freedom* and *Labor Freedom*. These additional results, for annual changes in *Business Freedom*, *Trade Freedom* and *Labor Freedom*, are included in Table A2 of the online Appendix.

Importantly, the effect of change in the rule of law on entrepreneurship is robust to adding either *Trade Freedom* or *Labor Freedom* providing continued support for Hypothesis (H1). Moreover, unlike *Business Freedom*, both change in *Trade Freedom* and change in *Labor*

TABLE 5 Effects of direction of change in the rule of law on nascent entrepreneurship

	(1)			(2)			(3)		
	O. R.	SE	p	O. R.	SE	p	O. R.	SE	p
<i>Institutional variables</i>									
Executive constraints: 1 year change = decrease	0.665	0.055	0.00						
Executive constraints: 1 year change = increase	1.009	0.045	0.84						
Executive constraints: Level (1 year lag)	1.148	0.024	0.00						
Inst. Democracy: 1 year change = decrease				0.680	0.049	0.00			
Inst. Democracy: 1 year change = increase				0.993	0.039	0.86			
Democracy: Level (1 year lag)				1.085	0.010	0.00			
Rule of law (WB): 1 year change = decrease							0.880	0.011	0.00
Rule of law (WB): 1 year change = increase							0.982	0.011	0.13
Rule of law (WB): Level (1 year lag)							1.185	0.057	0.00
<i>Control variables (individual level)</i>									
Age	1.114	0.002	0.00	1.114	0.002	0.00	1.115	0.002	0.00
Age squared	0.999	0.000	0.00	0.999	0.000	0.00	0.999	0.000	0.00
Female	0.629	0.005	0.00	0.629	0.005	0.00	0.629	0.005	0.00
Education = some secondary	1.096	0.023	0.00	1.095	0.023	0.00	1.106	0.023	0.00
Education = secondary	1.291	0.025	0.00	1.290	0.025	0.00	1.294	0.025	0.00
Education = tertiary	1.657	0.033	0.00	1.657	0.033	0.00	1.656	0.032	0.00
Manages and owns business older than 42 months	0.701	0.011	0.00	0.701	0.011	0.00	0.686	0.011	0.00
Discontinued a business in past 12 months	2.242	0.033	0.00	2.242	0.033	0.00	2.225	0.033	0.00
Financed new business(es) in past 3 years	2.076	0.029	0.00	2.076	0.029	0.00	2.076	0.029	0.00
<i>Control variables (country level)</i>									
Business Freedom: Change (1 year)	0.997	0.002	0.08	0.997	0.002	0.08	0.998	0.002	0.28
Business Freedom: Level (1 year lag)	1.003	0.001	0.01	1.003	0.001	0.00	1.004	0.001	0.00
GDP per person employed	1.000	0.001	0.80	0.999	0.001	0.51	1.000	0.002	0.81
Inflation, GDP deflator (annual %)	1.001	0.002	0.39	1.002	0.002	0.19	1.006	0.002	0.00
GDP growth (annual %)	1.002	0.002	0.20	1.003	0.002	0.12	1.002	0.002	0.33
Income inequality (Gini coefficient)	1.002	0.002	0.34	1.001	0.002	0.40	1.003	0.002	0.17
Mean age	0.828	0.024	0.00	0.829	0.024	0.00	0.828	0.025	0.00
Mean age squared	1.002	0.000	0.00	1.002	0.000	0.00	1.002	0.000	0.00
Share of females	0.471	0.089	0.00	0.462	0.088	0.00	0.315	0.062	0.00
Share of those with some secondary ed.	0.240	0.025	0.00	0.251	0.026	0.00	0.267	0.029	0.00
Share of those with secondary ed.	0.142	0.016	0.00	0.146	0.016	0.00	0.174	0.020	0.00
Share if those with higher education	0.134	0.015	0.00	0.138	0.016	0.00	0.147	0.017	0.00
Share of established business owners	7.351	1.482	0.00	7.168	1.436	0.00	14.12	2.90	0.00
Share of those who discontinued bus.	12.77	3.89	0.00	12.10	3.69	0.00	19.68	6.13	0.00
Share who financed businesses	623.60	184.10	0.00	525.55	155.55	0.00	442.42	132.16	0.00
Constant	2.28	1.55	0.23	2.43	1.65	0.19	1.90	1.32	0.36

Note: Dependent: Actively involved in start-up effort, owner, no wages yet = 1. Logit models, odds ratios reported instead of coefficients in the first column (odds ratios >1 indicate a positive effect, those <1 a negative effect); second column: exponentiated robust SEs; third column: probability. 1 year lag—refers to the initial level of the institutional variable at year *t*-1, see Section 3. Country and year dummies included but not reported. Models 1 and 2 based on 1,459,199 individual observations and 68 countries. Model 3 based on 1,413,914 observations and 69 countries. Reference (omitted) category for change scores = no change (see Section 3).

Freedom coefficients are positive and highly significant ($p < .001$). This makes sense considering that the *Business Freedom index* relates to ease of entry and aggregates World Bank indicators related to start-up requirements and procedures and licensing and permits. Prospecting entrepreneurs are likely to be less sensitive to changes in these regulations as they know that they are a one-off cost (that is, they are no longer relevant once a business has been created). By contrast, changes in trade and labor regulations, similar to the rule of law, can affect the long-term prospects of their new ventures. Changes in trade and labor regulations increase uncertainty about how easy it will be to trade, and to employ workers in their firm, which will have long-term consequences on the day-to-day operations of their new ventures. Our results may also be compared with those obtained for financial performance, regressed on changes in regulation by Banalieva et al. (2018).

4.2.2 | Moderating effect of education

Human capital plays a central role in entrepreneurial entry decisions, yet its effect may be sensitive to the rule of law (Estrin et al., 2016). Therefore, it is plausible to expect that the institutional change effects we analyze will be conditioned by the level of education. Following that, we interacted institutional change with the level of education. The results are available in Table A3 of the online Appendix. Our initial intuition was that we will obtain stronger effects on entry decisions for individuals who are highly educated, because they may be more sensitive to institutional change due to higher opportunity costs. However, for our two core measures, the results are opposite to what we expected: it is those with some secondary education (rather than those with completed secondary or tertiary education) who are significantly affected by changes in the rule of law (for the World Bank measure, the results are insignificant). This is also confirmed by the marginal effects for *Executive constraints*, but not for alternative indicators, see Figures A1 and A2 in the Online Appendix.

We have two tentative explanations for these results. First, these may be indicative of the network effect (Batjargal et al., 2013; Ge et al., 2017). Highly educated people (and men, and older people) are sheltered from institutional weaknesses, because they have stronger social and political networks (Aidis, Estrin, & Mickiewicz, 2008) and therefore they respond less to change in institutional quality. Second, and somewhat related, our dependent variable is engagement in a nascent start-up. It captures all types of new entrepreneurial projects, regardless of their value-added, and higher value-added is likely to counterbalance the additional costs that come with lower institutional quality. These projects are also more likely to be pursued by those with high education. In contrast, lower value-added projects, of “marginal entrepreneurs,” will be more sensitive to changes in institutional quality. We will explore this possibility next.

4.2.3 | Impact of institutional change on “low” versus “high value added” entrepreneurship

A common proxy for the expected quality of entrepreneurial projects at time of entry is the job growth aspirations of entrepreneurs (Estrin, Korosteleva, & Mickiewicz, 2013). Following that, we estimated multinomial logit models with baseline taken to be no nascent entrepreneurship, and two other possible outcomes: nascent projects with less than five jobs expected in 5 years, and

nascent projects that expect to provide five or more jobs in 5 years. The results are available in Table A4a,b of the Online Appendix. This model is demanding computationally and did not converge for the World Bank's *Rule of law* measure. However, first, for the models for *Executive constraints* and for *Institutionalized Democracy*, the results are remarkably consistent: for both the level of rule of law and changes in the rule of law, and regardless of the type of entry, the coefficients are positive and significant, rendering additional support for Hypothesis (H1). Second, we performed post estimation tests on the difference in coefficients between low and high growth aspirations models. We obtained mixed results. For our preferred specification (*Executive constraints*), the coefficient of change in the rule of law for low growth entry is significantly higher than that for high growth entry ($\chi^2 = 3.40$, significance $p < .01$, Model 1). This is in line with the view of “marginal entrepreneurs” discussed above: the lower value-added entrepreneurial projects are more sensitive to change in institutional quality. However, this difference is not significant in the next equation, when *Executive constraints* is replaced by *Institutionalized Democracy* indicators (Model 2).

It is worth noting one additional result. While income inequality is insignificant in our main models, there is highly significant difference for its effects on low versus high aspiration entry. Income inequality has no significant impact on low aspiration entry; however, it works against high aspiration projects: possibly a larger share of the population is prevented by their low income to engage in such ventures, as these require more investment.

5 | DISCUSSION

We enrich institutional theory by drawing attention to short-term institutional change, which has been overlooked in favor of viewing institutions as stable, in existing approaches to institutional theory. Moreover, Cuervo-Cazurra, Mudambi, and Pedersen (2019) highlight the importance of institutional analysis in global strategy research, but also that it is still missing insights from politics and psychology. Responding to this, we integrate prospect theory from cognitive psychology with institutional theory to conceptualize how change in political constitutional institutions affects economic behavior. We test predictions about how short-term changes in political constitutional institutions impact entrepreneurial entry. We focus on the rule of law as a political constitutional institution that has been considered central not only to business, but also to economic development, human welfare, and global governance (Skaaning, 2010).

In a multilevel study of 1.5 million individuals in up to 69 countries and spanning the years 2001–2015, we find that short-term changes in the rule of law and especially deteriorations in the rule of law impact entrepreneurial entry. In extensions, we document that especially the start-up efforts of “marginal” entrepreneurs are sensitive to changes in the rule of law. We now turn to the theoretical implications of our findings.

5.1 | Enhancing institutional theory by considering short-term institutional change

Our study contributes to institutional theory by introducing and conceptualizing short-term institutional change to institutional theory, following the direction taken by Banalieva et al. (2018). As outlined below, by building upon cognitive science, we can propose a framework that enables us to explain how entrepreneurs respond to institutional change. As a result, we complement the established static perspective on institutions which emphasizes their

stability, in research on institutions in economics, sociology and management (e.g., Holmes et al., 2011; North, 2005; Williamson, 2000) and in entrepreneurship (reviews: Urbano et al., 2019; Terjesen et al., 2016). To institutional theory, we contribute novel insights into why and in which way institutional change matters for economic behavior such as entrepreneurship. Critically, we empirically demonstrate that short-term institutional change meaningfully shapes entrepreneurial activity *in addition* to the static snapshots of institutions.

Drawing attention to short-term change, which is more often gradual rather than disruptive, expands our understanding of institutions and opens new avenues for future research in institutional theory and comparative entrepreneurship research. In particular, it is the short-term time-scale of change and the often gradual nature of change in constitutional institutions that has been overlooked. We empirically document that meaningful short-term change¹⁷ occurs, consistent with the theoretical perspective of Mahoney and Thelen (2010). At the same time, we complement research, which unlike ourselves focuses exclusively on the outliers in institutional change, that is, on the effects of discontinuous, “shock-like” rapid institutional change on entrepreneurship, for example when the Soviet system imploded (Estrin & Mickiewicz, 2011; Smallbone & Welter, 2001). We also complement research that descriptively documents long-run institutional changes taking place of decades or centuries from a historical perspective (e.g., North, 1990, 2005).

In sum, we offer a new theoretical perspective to understand institutional change anchored in insights from cognitive science. This perspective enables us to consider the hitherto overlooked “middle ground” between stability and discontinuous drastic change in institutions (Mahoney & Thelen, 2010). It also critically enables us to theorize about the difference in relevance of institutional deterioration and institutional improvement, whereby the former is more consequential than the latter. We discuss the behavioral foundation of institutional theory that underpins this argument in the section on enhancing institutional theory with cognitive science below.

For entrepreneurship research, the institutional change perspective expands the current understanding of “context” and allows to formulate predictions regarding why, when, and what type of short-term institutional change becomes either an enabler or an inhibitor of entrepreneurship (Davidsson et al., 2020). By demonstrating that such short-term institutional change matters and by unpacking which types of changes are most impactful, our research responds to recent calls by entrepreneurship researchers to start investigating *changes* in context (Davidsson, 2020) and to develop more time-sensitive entrepreneurship research (Lévesque & Stephan, 2020). While we focus on effects of short-term institutional change on entrepreneurial decisions, we hope that future research takes our findings as a springboard to understand what other time scales in environmental change may matter and in what way.

5.2 | Enhancing institutional theory with cognitive science to understand the impact of change

Our research enhances economic institutional theory by developing its behavioral assumptions, drawing on prospect theory from cognitive science (Gigerenzer & Gaissmaier, 2011; Kahneman & Tversky, 1979). This delivers a more accurate understanding of the mechanisms of *how* and *why* institutions and institutional change affect individual economic activity such as entrepreneurial entry. Cognitive science highlights cognitive processes through which (potential) entrepreneurs assess and understand the complexity of the outside world. Rather than depicting

individuals as actors who respond *fully* rationally to the institutions around them, cognitive science helps us to develop a new and “more humane” perspective of how actors understand and respond to economic institutions (Estrin et al., 2017). Actors respond in *ecologically* rational ways employing heuristic thinking rather than optimally weighting and considering all information (Gigerenzer & Gaissmaier, 2011). This perspective helps to understand why institutional change has the important effects on entrepreneurial entry that our study documents. First, it helps to comprehend the significance of studying institutional change. Ecologically rational individuals are particularly sensitive to change, because change in itself introduces uncertainty (Kahneman, 2011). Second, it helps to understand the asymmetric impact of deteriorations in the rule of law compared with improvements. Deteriorations are more threatening than improvements (Kahneman & Tversky, 1979) and thus attract more attention to avert potential resource losses (Hobfoll, 1989).

This gives future research a broader toolkit to study the effects of institutions on economic behavior, of which entrepreneurship is just one example. Cognitive science has documented the underpinning mechanisms and relevance of heuristic thinking for a range of decision domains, including for human resource decisions of managers (Luan et al., 2019), investment decisions, consumer behavior, and health decisions (Gigerenzer & Gaissmaier, 2011). These decision domains present fruitful avenues to extend the analysis of institutions and how they shape different aspects of our life. In particular, understanding the impact of institutions and institutional change on the strategic responses of CEOs through the lens of “homo heuristicus” (Gigerenzer & Brighton, 2009), as presented here, seems promising. CEOs like entrepreneurs are more directly exposed to their institutional context—unlike employees for whom the organization they work for “buffers” the impact of the institutional context.

More generally, the salient influence of recent events and change in the institutional context has implications for any action that involves future-oriented investments such as innovation, growth, internationalization, or engagement in social value creation. Such research can build on further insights from cognitive science on heuristics, for instance about how temporal closeness of events impact individual investment behavior differentially, comparing the effects of events that are further in the future versus those that are more immediate (Kahneman, 2011; Lévesque & Stephan, 2020). Integrating such predictions with institutional theory offers rich opportunities to develop broader dedicated theory and research on the impact of institutional context on entrepreneurship and managerial behaviors in global strategy research.

More specifically, we hope that our study can inspire a new line of research on institutions and entrepreneurship that helps to achieve a more complete and in-depth understanding of institutions by looking at the behavioral microfoundations of context-conditioned entrepreneurial decisions. The innovativeness of our approach is that while much of the institutions–entrepreneurship literature starts with macroinstitutional features and asks how these affect entrepreneurial decisions and strategies, our starting point is to understand the decision-making process of the (potential) entrepreneurs. We believe this is a necessary condition to understand the regularities in the impact of context on entrepreneurship, and that cognitive science insights play an important role here.

5.3 | Future research

Our results equally point to the relevance of overall levels of institutions (rule of law) as well as change in institutions. Our recommendation is therefore that future research should consider

both—levels and change—as one may mask the effect of the other, and outcomes that we to date attribute to weak institutions may be biased by omitting changes (especially deteriorations) from the models.

While our findings reinforce the importance of both the rule of law for entrepreneurship, and a short-term impact of some aspects of regulatory change (labor, trade), we hope future research might also consider change in institutional configurations for example in analogy with those laid out in the varieties of capitalism approach (e.g., Herrmann, 2019). Indeed, some authors have criticized the latter for the lack of consideration of change (e.g., Heyes, Lewis, & Clark, 2012, but see Hall & Thelen, 2009). Widening our analyses to change in configurations of institutions offers thus scope for new contributions to institutional theory as applied to business research. Such change of perspective may also require considering different methods, including those based on set-theory (Decker, Estrin, & Mickiewicz, 2020).

Further, Williamson (2000) argues that informal institutions are critical for all other components of the institutional system and human action, but suggests that their changes are unlikely to be detected in the short-term. He considers these changes to unfold over hundreds of years.¹⁸ Thus, change in informal institutions may be particularly difficult to research. In contrast, although changes in formal institutions are not necessarily frequent, they are, relatively speaking, easier to identify, because they are defined as discrete elements. Compared to informal institutions, elements of law and regulation are more objectively identifiable, typically in the forms of written down unambiguous rules. This makes it easier to trace and catalogue any violations or changes in them. Thus, the challenge is to conceptualize and identify short-term changes in culture, values, and informal institutions. These changes happen as well (Taras, Steel, & Kirkman, 2012), and their effects on entrepreneurship may be tangible.

Last but not least, institutional change may affect different types of entrepreneurship in different ways. While we focused on the overall propensity to start new ventures, it is likely that institutional change will also affect the composition of entrepreneurship. Sutter et al. (2017) discuss the process of formalization, that is, the transition of entrepreneurs from informal to formal markets. Entrepreneurs may prefer informal entrepreneurship when formal institutions deteriorate. Furthermore, there may be differences in the propensity to start new businesses by first-time and serial entrepreneurs, responding to institutional change. To focus on learning processes of serial entrepreneurs would be consistent with the perspective of cognitive psychology we adopt for our paper. Take, for example, Thailand that stands out in our sample with what seems to be a turbulent institutional environment. Will serial entrepreneurs with more experience respond more strongly to institutional deterioration, given they likely experienced it before? Or will they be more protected from institutional deterioration given they are more sheltered by informal networks they built in their earlier business activity, in line with the effects described by Batjargal et al. (2013)? We do not have answers to these questions, just yet.

5.4 | Limitations

The limitations of our study are the limitations of the data we can mobilize. Even though, the GEM has generated harmonized data on entrepreneurship for an unprecedented number of countries and years, it would be, as always, desirable to include more countries and further years. Less developed economies tend to be less well represented in the country sample and

over time. We note that as of today there is no similar database that would allow an analysis over a similar time frame and spanning a similar number of economies.

While we build on long-standing research in cognitive science and heuristics to develop our hypotheses and found support for most of them, it would be preferable to include direct measures of cognitive mechanisms. Due to the scale and scope of the data collection effort required, this is currently not a realistic endeavor. We hope that future research might complement our analyses for instance by testing mechanisms in lab or field experiments. We note that this limitation is not unique to our study; past research that assumes rationally optimizing actors (instead of actors deploying heuristic thinking) also does not assess these microlevel mechanisms directly. We hope future research can incorporate microlevel measures of mechanisms into institutional analysis.

5.5 | Practical implications

Investigating short-term institutional change opens new possibilities for practical interventions. If the emphasis is on institutions as the long-term fixed characteristics of an economy, policy makers cannot see themselves affecting any visible change during their time in office. However, an emphasis on short-term institutional changes calls for renewed action from policy makers to work toward creating strong rule of law, to stimulate entrepreneurship. Building such institutions helps to develop entrepreneurship over time; yet, even incremental improvements in the rule of law have important positive effects on entrepreneurship.

At the same time, our findings about the particularly detrimental effects of deterioration in the rule of law also clearly caution policy makers to refrain from restricting the rule of law. As the current coronavirus pandemic demonstrates, sometimes limits to individual freedoms are implemented to protect public health; yet policy makers should be under no illusion about their more indirect negative impact on entrepreneurship. Complementing such measures with temporary tax reliefs or other support for existing entrepreneurs is likely to help those in business. However, based on our findings we expect Covid-19 may have a long-lasting negative effect on entrepreneurship if entrepreneurs interpret the sudden restrictions on their freedom as an indication of longer-term institutional conversion.

Overall, we find that changes in the rule of law have more pronounced effects than changes in regulation, even if the latter matter as well as documented by our additional results. However, policy makers tend to focus on the latter—it is easier to change the number of procedures to register a business than it is to develop the fundamental rule of law of a country. Yet, such harder work has bigger payoffs in terms of entry into entrepreneurship.

6 | CONCLUSION

As we hope our framework and findings demonstrate, it is promising to adopt a perspective of microfoundations that integrate insights from cognitive science to explain how individuals respond to environmental changes in their entrepreneurial decisions. We show how valuable this is for conceptualizing the effects of short-term institutional changes. We hope our work can inspire new avenues for theorizing both about institutions and entrepreneurship, by considering change over time while applying cognitive lenses to entrepreneurial choices. Future work may also apply this perspective to strategic choices of CEOs.

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ENDNOTES

- ¹ Prospect theory is applied as the main theory framework to explain entrepreneurial outcomes in Estrin, Mickiewicz, and Rebmman (2017).
- ² Rothstein (2013) links the concept of the *quality* of government to rule of law. Consistent with our discussion above, he places Dworkin's (1977) concept of equal concern and respect as the ultimate foundation of the rule of law. The exact opposite of the latter, that is, the low quality of government, is discrimination, which can be brought about by clientelism, nepotism, or corruption.
- ³ Opening out to international trade and investment also played a role, yet interestingly also early inflows of FDI can be linked to the initiatives by mainland Chinese entrepreneurs (Huang, 2003).
- ⁴ Institutional conversion is a specific type of gradual institutional change considered by Mahoney and Thelen (2010). Two others are drift and layering (Mahoney and Thelen (2010), pp. 15–18).
- ⁵ In a recent “Nations in Transit” report, Hungary is given as a prime example of gradual and steady erosion of the rule of law over a decade. See: <https://freedomhouse.org/report/nations-transit/nations-transit-2018> as accessed on the April 12, 2018.
- ⁶ Accessed on November 23, 2020 from <https://www.ft.com/content/117349e4-dc95-4509-969b-26dcdede1773>.
- ⁷ On North Macedonia, again: “Nations in Transit” report, source as in footnote 5.
- ⁸ Note that the work on heuristics and cognitive science explains commonalities in perception and thinking of all individuals, rather than focusing on personality differences between individuals, which is the more popular application of psychology in entrepreneurship (Gorgievski & Stephan, 2016).
- ⁹ Prospect theory finds “loss aversion” to be a fundamental feature of human decision-making (Tversky & Kahneman, 1992): “A salient characteristic of attitudes to changes in welfare is that losses loom larger than gains” (Kahneman & Tversky, 1979, p. 279). Loss aversion implies an asymmetric assessment of losses and gains by decision makers. It is the asymmetry element that makes it different from both risk aversion, and ambiguity aversion that is often considered in the context of entrepreneurship (Koudstaal, Sloof, & van Praag, 2016). Supporting this view, empirical evidence obtained by Koudstaal et al. (2016) suggests that it is neither (symmetrical) risk aversion, nor relative ambiguity aversion (as postulated since Knight, 2009[1921]), but specifically loss aversion, that plays an important role in the decision to entry entrepreneurship.
- ¹⁰ Ge, Stanley, Eddleston, and Kellermanns (2017) observe that in many institutional contexts, of emerging markets in particular, institutional deterioration may not be universally perceived as negative or as undermining entrepreneurship. Rather institutional deterioration may even lead to new entrepreneurial opportunities, especially if entrepreneurs can mobilize political and social connections to their advantage. This perspective is anchored in contributions that emphasize the role of networks in weak institutional environments as a means to create and exploit entrepreneurial opportunities (Batjargal et al., 2013). However, at any given time, a minority of entrepreneurs will have the relevant networks and political connections to generate significant new opportunities that exploit institutional weaknesses. Thus, while such effects may weaken, they will not eliminate the relationship we postulate.
- ¹¹ Note, however, that drawing upon cognitive heuristics, in the theoretical discussion motivating Hypothesis (H1), we assumed that mental shortcuts lead the potential entrepreneurs to react strongly to any change.
- ¹² The tension is significantly alleviated (but never completely resolved) by the model of *constitutional* democracy (Møller & Skaaning, 2012). Accordingly, the construct used by Polity IV, *Institutionalized Democracy*, emphasize precisely this aspect: within this measure, the electoral process is balanced by the constitutionally defined constraints on the executive power of the government, alleviating the threat of majoritarian tyranny.
- ¹³ An alternative would be to use unemployment rate. Both are correlated, and we verified it makes no difference for the results which one is used.

- ¹⁴ We constructed the Gini coefficient variable from the World Income Inequality Database (United Nations) and we thank the anonymous reviewer for this suggestion. A do file that corresponds to the rules we applied in handling the raw inequality data is available on request.
- ¹⁵ We are grateful to the anonymous reviewer for excellent insights and discussion of methodology with attention to detail.
- ¹⁶ The data and the codes that generated our results are available at Research Gate.
- ¹⁷ Empirically, we establish that institutional changes are sufficiently discontinuous and pronounced for short-term change to be detected in annual data (see minimum and maximum values and SDs in Table 2).
- ¹⁸ In the context of entrepreneurship, Estrin and Mickiewicz (2011) discuss changes in societal values in time intervals corresponding to generations, rather than hundreds of years as laid out by Williamson (2000). This generational perspective is further developed by Zhang and Acs (2018).

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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