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Abstract

Previous research suggests that entrepreneurs value autonomy more than non-entrepreneurs do across countries and institutional contexts. However, most evidence exists for contexts with more or less entrepreneurship-facilitating and stable institutional framework conditions while we do not know whether this connection also exists in situations, in which entrepreneurs operate under challenging institutional conditions. This paper exploits a historical episode to first analyze a context where entrepreneurs faced massive institutional barriers and, second, a context marked by significant changes of the institutional framework conditions for entrepreneurship. In both contexts, entrepreneurs are challenged either by external resistance toward their activity or by uncertainty regarding the future prospects of their endeavor. Our results show an above-average endorsement of autonomy as an important societal value among people that were entrepreneurs in the autocratic anti-entrepreneurial regime and those respondents that started or planned to start an own venture during institutional upheaval. The findings of our analysis suggest that the mark-up entrepreneurs reveal with respect to valuing autonomy found in the previous literature is not an artefact of stable entrepreneurship-facilitating institutional framework conditions.

Keywords: Entrepreneurship; Value orientation; Autonomy; Institutions

JEL-codes: L26; P20; Z10

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1 Introduction

There is extant work on the relationship between entrepreneurship and human values (e.g., Davidsson and Wiklund, 1997; Hassall et al., 2005; Beugelsdijk and Noorderhaven, 2005; Licht et al., 2007; Caliendo et al., 2011; Croson and Minniti, 2012). Because entrepreneurs are crucial agents of innovation and change, it is important to understand their value orientations (e.g., Schumpeter, 1934; Wennekers and Thurik, 1999). Furthermore, there is a lot of evidence that entrepreneurship is related to economic growth and development (for an overview, see Fritsch, 2013).

Entrepreneurship is associated with self-determination and self-enhancement, or in the words of Schumpeter, realizing the "dream and the will to found a private kingdom" (Schumpeter, 1942, 93). In terms of values, favoring these aspects of entrepreneurship can be understood as a priority for putting emphasis on *autonomy* or as "… a desirability of individuals independently pursuing their own ideas […] and pursuing intellectual directions and pursuing affectively positive experience" (Licht et al., 2007, 662). This paper focuses on self-employment as the main form of entrepreneurship. The non-pecuniary procedural utility of seeking autonomy and being one's own boss is generally thought to be a key explanation for why people choose self-employment, even if they could earn more in paid employment (e.g., Moskovitz and Vissing-Jorgensen, 2002; Benz and Frey, 2008a, b).

Mounting empirical evidence from researchers in economics and psychology confirms that having a self-perceived value priority for autonomy is a distinguishing trait that separates self-employed people from the rest of the population. The evidence indicates that this trait is consistent across countries from Western Europe, North America, Eastern Europe, and prevalent in other countries with an institutional background that is much different from that in the Western world (e.g., McGrath and MacMillan, 1992; Thompson

et al., 1992; Smallbone and Welter, 2001; Blanchflower et al., 2001; Benz and Frey, 2008b; Croson and Minniti, 2012; Fritsch et al., 2018).[1]

Theory and empirical evidence on the link between entrepreneurship and valuing autonomy are both well-established and prevalent across much different institutional contexts. However, previous research focused on stable entrepreneurship-facilitating institutional framework conditions and the theory is silent on the role of institutional context. Accordingly, we do not know whether the found link is specific to such settings or rather universal. For example, we do not know whether the link between entrepreneurship and valuing autonomy is robust in unstable institutional settings where potential entrepreneurs are challenged by uncertainty due to rapid socioeconomic and institutional change. Similarly, we do not know whether the link is present in entrepreneurship-inhibiting institutional environments where entrepreneurs are challenged by massive resistance towards their activity.

There is a recently emerging literature on entrepreneurship and entrepreneurial intentions in challenging contexts (e.g., Parachuri and Ingram, 2012; Bullough et al., 2014; Miller and Le Breton-Miller, 2017) which is also reflected by the development of a theory on challenge-based entrepreneurs (Miller and Le Breton-Miller, 2017). However, there is a lack of research on the value orientation of entrepreneurs challenged by inhibiting and rapidly changing institutional settings. The lack of research is surprising because institutions play a key role for the supply of entrepreneurship and the allocation of entrepreneurial talent (e.g., Baumol, 1990). Formal institutions are understood as a country's formal framework comprising rules, laws, and constitutions. Informal institutions are represented by norms and conventions, as well as codes of behavior and conduct in a society

[1] Carter et al. (2003) find no difference between nascent entrepreneurs who have not yet started a firm, and non-entrepreneurs. This pattern might be driven by the fact that some nascent entrepreneurs do not become true entrepreneurs.

(e.g., North, 1990). The design of the institutional framework determines the degree to which a country or economic system is entrepreneurship-facilitating or inhibiting (Elert and Henrekson, 2017). There is a lot of evidence on how institutions affect entrepreneurial choice (e.g., Klapper et al., 2006; Sobel, 2008; Estrin and Mickiewicz, 2012) and how anti-entrepreneurial institutional settings inhibited start-up activities and business ownership (e.g., Baumol, 1990; Earle and Sakova, 2000). However, not much is known about the value orientation of people opting for self-employment in hostile environments. The same applies to entrepreneurs during rapid institutional and socioeconomic change which is understood as major shocks resulting in a severe disturbance of trajectories of regional and/or supra-regional institutional conditions. Examples of major shocks can include not only natural catastrophes, terrorist attacks and civil wars, but also institutional upheavals like the transition from communism to a market economy that took place in the Soviet bloc in the late 20th century or any other largely unanticipated change from an autocratic regime that commands economic resources toward a market-oriented democratic regime. Entrepreneurship-inhibiting institutions in autocratic regimes are rules and codes of conduct that are detrimental to entrepreneurial activity. In the theory of challenged-based entrepreneurs, this corresponds to a socio-cultural and economic challenge (Miller and Le Breton-Miller, 2017, p. 9).

The standard theory on the link between valuing autonomy and occupational status would predict that entrepreneurs have a higher value orientation than the average population (e.g., McGrath and MacMillan, 1992; Thompson et al., 1992; Licht, 2007; Smallbone and Welter, 2001; Blanchflower et al., 2001; Benz and Frey, 2008b; Noseleit, 2010; Croson and Minniti, 2012). However, there is actually a lack of evidence whether the theory holds beyond stable entrepreneurship-facilitating contexts. This paper closes this gap.

Apart from testing whether the standard theory on the value orientation of entrepreneurs holds beyond stable entrepreneurship-facilitating institutional contexts, there are several further reasons for such an analysis. First, entrepreneurship can be a source of resilience in regions challenged by external shocks (e.g., Simmie & Martin, 2009; Williams & Vorley, 2014) in the sense that entrepreneurial activities represent a proactive response after disruptive change. Entrepreneurs that independently pursue their own ideas in the face of rapid change and those that reveal a general value priority for autonomy can serve as role models and inspire other people to actively cope with socioeconomic challenges either as entrepreneurs themselves or as employees in companies started by these entrepreneurs. This in turn fuels recovery in the aftermath of shocks. For example, they can be important actors during a regime-switch from entrepreneurship-inhibiting autocratic regimes towards democratic and market-oriented framework conditions. Entrepreneurs could become important agents of change in such hostile environments to disembed from existing structures, and their companies could serve as a nucleus of change toward more favorable socioeconomic conditions and role models for successful transition.

This paper analyzes survey data from a unique historical episode that allows us to measure the relationship between value orientation and entrepreneurship in two very different contexts. The first context is characterized by an environment that is entrepreneurship inhibiting. In the second context, the same survey respondents faced rapid socioeconomic changes that created entrepreneurship-facilitating conditions. More precisely, this research relies on survey data conducted 6 months after the fall of the Berlin Wall and the erosion of the communist economic system in the German Democratic Republic (GDR). Communist systems such as the GDR have been extremely prohibitive with respect to private sector activity (e.g., Earle and Sakova, 2000). Decades of socialist policy led to a

crowding out of an entrepreneurial spirit and its associated values, like autonomy (e.g., for an overview, see Schwartz and Bardi, 1997).

We test whether respondents that were already self-employed in the adverse setting of the GDR before the fall of the Berlin Wall (first scenario) and respondents involved in entrepreneurial activities after the switch to entrepreneurship-facilitating framework conditions (second scenario) reveal a higher priority for autonomy as an important value as compared to other survey participants. The fall of the Berlin Wall was unanticipated. This rules out that people selected into self-employment in anticipation of rapid socioeconomic change. This provides a cleaner test and distinction of the two scenarios in contrast to other Eastern European transition countries were institutional change was more gradual.

The results of this study demonstrate that having been self-employed while living under a socialist regime is positively related to having a personal desire it to be independent (or autonomous). The same pattern can be found for people that planned to start their venture during the institutional upheaval following the fall of the Berlin Wall. This finding is remarkable, considering that for many decades, people were exposed to socialist indoctrination that crowded out any attempts at autonomy. The finding is robust when controlling for income yielded in self-employment, several individual characteristics, as well as the industrial and occupational environment of the respondents. Altogether, the results suggest a positive relationship between deeming autonomy as a desirable societal value and entrepreneurship, both while being exposed to one of the most anti-entrepreneurial institutional environments in human history and during a significant institutional upheaval toward entrepreneurship-facilitating institutional framework conditions.

The paper shows that the standard theory on the link between valuing autonomy and entrepreneurship holds not only in stable entrepreneurship-facilitating institutional

context which previous theoretical and empirical research focused on. The findings also show that individuals who live in communist countries and engage in entrepreneurial activities value autonomy as much as entrepreneurs who live in other parts of the world and in very different institutional contexts, and therefore cannot be labeled as "misfits". This realization also informs the debate in literature that focuses on economics and psychology by revealing that socialism was not able to break the link between an entrepreneurial value and entrepreneurial choice and intentions (e.g., Oettingen et al., 1994; Frese et al., 1996; Schwartz and Bardi, 1997; Alesina and Fuchs-Schuendeln, 2007; Linz and Chu, 2013). More generally, by investigating the interplay of occupational choice and value priorities in a region that underwent a dramatic transition process from a centrally planned socialist economy to a market economy, the paper also informs the debate in development psychology about the demands of social change (Tomasik et al., 2010).

Finally, the paper also contributes to the recently emerging literature on entrepreneurship and entrepreneurial intentions in adverse settings (e.g., Bullough et al., 2014; Miller and Le Breton-Miller, 2017) and more generally research on entrepreneurial attitudes (e.g., Newman et al., 2019) and the literature on the importance of value orientations in the context of work (e.g., Battle and Wigfield, 2003; Alvin Leung et al., 2011; Masuda et al., 2019).

2 Valuing autonomy and entrepreneurship: evidence from a unique historical episode

2.1 Setting the scene

Formal and informal institutions determine not only the level of start-up activity, but also inasmuch autonomy is valued within a society. Formal institutions are understood as a country's formal framework comprising rules, laws, and constitutions. Informal institu-

tions are represented by norms, conventions, codes of behavior, and the conduct of a society (e.g., North, 1990). Institutions play a key role in determining the prevalence of entrepreneurship and how entrepreneurial talent is allocated toward productive use (e.g., Baumol, 1990; Sobel, 2008; Estrin and Mickiewicz, 2012). Baumol (1990) argues that the proportion of people with entrepreneurial talent is constant across societies, but that it is the underlying institutions of a specific society that determine whether people use their talent productively (e.g., start-up activity) or unproductively (e.g., rent seeking, tax evasion) if not destructively (e.g., slave trade, warfare). Institutions can be facilitating or inhibiting with respect to start-up activity and business ownership. Institutions that are entrepreneurship-inhibiting create formal barriers and constraints, as well as informal resistance toward start-up activity, and are directed at people who attempt to establish their own business venture.

Schwartz and Bardi (1997) focus on socialism to illustrate how this pattern plays out. The formal and informal institutional framework that characterizes the command economies found in the former Soviet Union and Eastern European countries were explicitly designed to place a low emphasis on personal autonomy. Socialist institutions also have implicit barriers to entrepreneurship in that economic policies favor collectivization of private property and the promotion of large conglomerates, both in the industrial and agricultural sectors. Along with many legal and bureaucratic barriers, socialist economic policies and indoctrination crowd out entrepreneurial values and prompt an anti-entrepreneurial spirit (e.g., Ageev and Kuzin, 1990; Sztompka, 1993; Schwartz and Bardi, 1997).

Given that the institutional context of socialism inhibits entrepreneurship and autonomy. This provokes the question of whether this extreme set-up also destroyed any potential links between valuing autonomy and entrepreneurship. The case of socialism

provides an extreme institutional test. If it is possible to find a relationship between valuing autonomy and entrepreneurship in this set-up where there were extreme measures taken to crowd out both, it is hard to believe that the link between valuing autonomy and entrepreneurship is not truly universal. However, if socialist policies were successful there valuing autonomy should not be systematically higher among people who engage in start-up activity and are self-employed.[2] In essence, although entrepreneurial talent may still have existed, autonomy as a value priority may not have been the guiding principle, and running a venture may not have been a rewarding way of making use of this talent.

In this paper, the focus is on exactly such an empirical setting. The analysis is based on the socialist German Democratic Republic (GDR) during the institutional upheaval toward more entrepreneurship-facilitating conditions after the fall of the Berlin Wall and before German reunification. This setting is also informative about the value orientation of people that are involved in entrepreneurial activities during rapid socioeconomic change. These people may have used their entrepreneurial talent in unproductive activities such as rent-seeking within the socialist party or mass organizations. They may have behaved entrepreneurially within socialist enterprises and could not become self-employed because they were active in occupations and industries where running private firms was not allowed legally. Thus, the setting allows us to test whether people with entrepreneurial talent have a higher appreciation for autonomy despite being exposed to a system aimed against valuing autonomy for several decades. The following section outlines hypotheses that we test against the background of the institutional setting we exploit.

[2] Alternative reasons for starting a venture in socialism could be blocked mobility in the socialist labor market.

2.2 Self-employment in the GDR and start-up activity during transition

Self-employment was heavily restricted in the GDR. It was tolerated only in a few occupations and industries. At the advent of the fall of the Berlin Wall in 1989, only 1.8 percent of the working age population (184,599 self-employed in total, and 2.1 percent of all employees) was running a private venture compared to 10 percent in West Germany (Pickel, 1992). The few remaining private firms were heavily regulated and concentrated in the manufacturing trades (55 percent). These firms produced only goods for the private market but no industrial goods. Around 3.2 percent of the self-employed in the GDR in 1989 were farmers. Other self-employed were in services and comprise people active in domestic retail and wholesale trade (21.6 percent of all self-employed), while free professionals (e.g., writers and dentists) and "others" (e.g., proprietors of driving schools and of inland waterway carriers) made up the remaining share (for further details, see Pickel, 1992). The GDR lacked a substantial service sector, just as in most communist countries. Many services were directly integrated into state-owned manufacturing enterprises or served by separate state-owned units (e.g., hotels, restaurants).

Tolerating a small private sector does not mean that private sector initiatives were promoted in the GDR. Given the fact that the system in the GDR can be regarded as relatively strict when compared to other Central and Eastern European countries when it comes to the scope of entrepreneurship and self-employment (Aslund, 1985; Earle and Sakova, 2000), it is quite remarkable that any individuals selected into self-employment. Seeking autonomy from the socialist state-owned economy could be one motivation for being self-employed, if one was ready to cope with the manifold explicit and implicit restrictions. By opting out of the command economy despite institutionalized aggression against self-employment, they could have also signaled that they deem autonomy as an

important value. Based on our line or argumentation in section 2.1 and 2.2, we hypothesize:

H1: *People that were self-employed in the socialist GDR attach a higher value priority to autonomy than other people.*

This notwithstanding, there might be reasons that are specific to socialism and speak against a systematic relationship between self-employment and a value priority for autonomy. It is possible that the self-employed might have had no access to jobs in the state-owned economy. Specific income prospects in occupations where self-employment was not illegal might have also played a role. People could have been rent-seekers by selecting into self-employment, despite the explicit and implicit institutional aggression towards entrepreneurial activities, with the expectation of above average income prospects due to the absence of market competition and scarcity of consumer goods.

People in the GDR who were not self-employed might also have had a value priority for autonomy, but were active in occupations and industries where running private firms was not allowed. Others who possessed entrepreneurial intentions and a value orientation in favor of autonomy but were not self-employed in the GDR could start their firm or plan to do so after the fall of the Berlin Wall during institutional upheaval. Therefore, it can be hypothesized that both groups reveal an above-average value rating of autonomy.

H2: *People that started a firm during institutional upheaval toward more favorable conditions for entrepreneurship attach a higher value priority to autonomy than non-entrepreneurs.*

H3: *People that plan to start their own venture during institutional upheaval attach a higher value priority to autonomy than other people.*

New entrants may also come from the old ruling class that has been quite active with respect to entrepreneurship in Eastern European transition countries (e.g., Rona-Tas, 1994;

Stoica, 2004; Chavis, 2013). The involvement of this ruling class in maintaining the socialist regime gave them a certain degree of autonomy. However, it is difficult to make the case that they value autonomy while supporting organizations that suppress autonomy in society at large. Furthermore, an immediate start-up during institutional upheaval could suggest that the respective entrepreneurs had superior access to resources and information. For example, members of the old socialist ruling class were bound to have better political connections and knowledge of the system. Entrepreneurs originating out of this group may have also realized that after the dissolution of the repressive socialist system that they supported, they would have difficulties finding a job as a dependent employee. These arguments also suggest that there is no clear-cut link between starting a firm immediately after the fall of the Berlin Wall and valuing autonomy.[3] Taken together, people starting their venture immediately during institutional upheaval should attach a lower value to autonomy than people that were already self-employed in the GDR. This translates into the following hypothesis:

H4a: *Valuing autonomy among people that started a firm during institutional upheaval toward more favorable conditions for entrepreneurship is weaker than for people that were already self-employed in the socialist GDR.*

The window of opportunity for starting a firm due to superior (insider driven) access to resources and information should vanish over time. Therefore, people that did not immediately start their venture during institutional upheaval but only plan to do so are less likely to come from the previous socialist ruling class. Nevertheless, these specific incentives for becoming self-employed may still interfere. This translates into the following hypothesis:

[3] One argument suggesting that people with entrepreneurial abilities engaging in socialist organizations also have a value priority for autonomy is that they may have got involved to shape these organizations toward being more autonomy-facilitating.

H4b: *Valuing autonomy among people that planned to start a firm during institutional upheaval toward more favorable conditions for entrepreneurship is weaker than for people that were already self-employed in the socialist GDR.*

3 Empirical strategy

In order to analyze the value orientation of people living under a socialist regime and during institutional upheaval, this study makes use of a unique survey on the social situation of individuals in the GDR. The survey was conducted in May and June 1990, which was four months before German reunification (October 3, 1990), and just six months after the fall of the Berlin Wall (November 9, 1989). It was the first East German wave of the representative German Socioeconomic Panel (GSOEP) (for details, see Haisken De-New and Frick, 2005). The cross section of respondents from the 1990 survey includes 4,426 observations and provides an overview of the socioeconomic conditions of East Germans at the transition point between moving from a socialist to a market economy. The survey design excludes people who lived in West Germany in 1989.[4]

The data allows us to distinguish between respondents who were self-employed *before* the fall of the Berlin Wall and those who were not. It also allows us to determine whether they started a venture during institutional upheaval, or planned to do so. In the survey, respondents were asked to rate a set of personal character traits based on how desirable each trait is in society (scaling from 0 to 10, with 0 meaning 'not at all desirable' and 10 meaning 'highly desirable'). We understand these ratings to be a reflection of a general value orientation.

One of the character traits respondents were asked to consider was the importance of being independent. It is the responses to this question that we use for constructing the

[4] A threat to the empirical identification is that people that value autonomy more could have migrated to West Germany between the fall of the Berlin Wall and the survey. However, Wyrwich (2013) shows that sociodemographic differences between movers and stayers are relatively similar.

outcome variable of interest in the present study. Because scale use differences could distort our findings and lead to incorrect conclusions, we make a correction for individual differences in the use of the response scale before performing analyses. To this end, we calculate the mean score based on each individual's responses to all of the character traits. We then subtract the mean score from each specific character trait score to obtain a centered value. This procedure also indicates how much respondents value independence relative to other character traits.[5] A high centered score for rating independence indicates that a person values independence much more than other character traits, while the score can also become negative if independence is valued less than other character traits, on average. A general issue with respect to the framing of the autonomy item may be that it asks for the desirability of autonomy *in society*. This may imply that entrepreneurs in the investigated setting perceive autonomy as important for society but not for themselves, even though this is not very intuitive (for a discussion, see Section 5).

The main independent variables of interest measure the self-employment status of the respondents. The survey asked the respondents to identify their sources of income in May 1989. The choices of income sources were wage salary, self-employment income, and several additional income sources (e.g., maternity leave or educational grant). The data distinguish between two types of self-employed in the GDR: (1) wage salary *and* income from self-employment, and (2) did not yield wage salary but income as a self-employed individual. Respondents of the first group all earned more in wage salary than in self-employment. This suggests that they conducted some side activities, presumably moonlighting (*SE_MOON89*),[6] while the main occupational status of the second group is very likely self-employment (*SE_OCC89*). Both groups earned income from being self-employed in

[5] This procedure follows the adjustment of human value scales done in the European Social Survey (http://www.europeansocialsurvey.org/docs/methodology/ESS_computing_human_values_scale.pdf)

[6] The income is unlikely to reflect a second part-time job, which was a rather untypical in GDR times. Runst (2013) argues that the respective survey question is suitable to capture moonlighting.

the GDR (*SE_INC89*). New entrants can be identified by checking whether respondents did not yield income from self-employment in May 1989, but indicated that they were self-employed around the time of the survey (*ENTRY90*). People were also asked whether they planned to enter the market soon after the survey (*NASCENT90*).[7]

The analysis relies on OLS regressions because the centered outcome variable can take on non-integer values. The relative importance attached to being independent is regressed on self-employment status and several control variables (see Table A.1 for summary statistics; Table A.2 for a correlation matrix). The vector of controls comprises age, gender, income, as well as detailed variables for the industrial and occupational environment of respondents. Heteroskedasticity is controlled for by employing the Huber White Sandwich procedure (White, 1980). The regression analysis is restricted to the sample population in the working age (18-65 years).

4 Empirical results

4.1 Descriptive insights

The share of survey respondents that generated income in self-employment in May 1989 is about 1.84 percent (Table 1). The share of respondents that generated income in self-employment but not as waged employee is about 1.23 percent of the working age population in the sample (18-65 years). These figures resemble aggregate GDR statistics that reveal a share between 1 and 2.1 percent depending on how the percentage is calculated (e.g., all employees, population in working age; for further details, see Brezinski, 1987;

[7] It must be acknowledged that the identification of people that started their venture during institutional upheaval does not rule out that the entry event took place in the last days before the unforeseen fall of the Berlin Wall.

Pickel, 1992; Wyrwich, 2012). Thus, the presence of self-employment in the sample is representative.[8]

In June 1990, 2.44 percent of the sample population was self-employed. The higher share reflects mainly market entries that took place between May 1989 and the date of the interview. These entries probably took place after the fall of the Iron Curtain in November 1989.[9] The numbers indicate that there were indeed many people with entrepreneurial intentions in the former GDR that had limited opportunities to start their own firm while living under the socialist regime, but did so as soon as the "window of opportunity" opened. An additional 1.59 percent of the respondents evaluated the possibility of becoming self-employed as very likely.

Table 1: The distribution of self-employment in 1989 and 1990

Group	*Operational definition*	*Rate in %*
Self-employment 1989 (SE_INC89)	(income_self89 > 0)	1.84
Self-employment 1989 (SE_OCC89)	(income_self89 > 0 & income_wage89 = 0)	1.23
Self-employment 1989 (SE_MOON89)	(income_self89 > 0 & income_wage89 > 0)	0.61
Self-employment 1990	(self-employed 1990 = 1)	2.44
Nascent self-employment 1990	(high chance of becoming self-employed in 1990 = 1)	1.59
Entry in 1990 (SE_INC89; SE_90)	(SE_INC89 = 0 & Self-employed 1990 = 1)	1.45
Entry in 1990 (SE_OCC89; SE_90)	(SE_OCC89 = 0 & Self-employed 1990 = 1)	1.4
Entry in 1990 (SE_MOON89; SE_90)	(SE_INC89 = 1 & SE_OCC89 = 0 & self-employed 1990 = 1)	0.05
Exit in 1990 (SE_INC89; SE_90)	(SE_INC89 = 1 & Self-employed 1990 = 0)	0.79
Exit in 1990 (SE_OCC89; SE_90)	(SE_OCC89 = 1 & Self-employed 1990 = 0)	0.25
Exit in 1990 (SE_MOON89; SE_90)	(SE_INC89 = 1 & SE_OCC89 = 0 & Self-employed 1990 = 0)	0.54

Notes: Rates are calculated in reference to the population in working age (18 - 65 years)

4.2 Baseline model

Panel A of Table 2 reports baseline models. The first model (Column I) includes dummy variables indicating whether a respondent generated income from self-employment in the

[8] The self-employment rate of the final sample (not considering observations with missing values on the side of independent variables) is slightly higher, resembling the numbers provided by Benz and Frey (2008a).

[9] Several of the respondents who indicated that they were self-employed in 1990 stated that they do not gain income from self-employment, which suggests that they just started their venture (i.e. in April or May 1990). This would be totally in line with the development of business registration during the year of 1990 (May-Strobl and Paulini, 1991).

GDR (*SE_INC89*), and controls for age and gender. Not distinguishing between those people who pursued self-employment as their main activity and those who were moonlighting yields a weak statistically significant coefficient. Model II makes the distinction between moonlighters (*SE_MOON89*) and GDR entrepreneur (*SE_OCC89*), and shows that belonging to the latter group is significantly and positively related to the importance attached to being independent, while the dummy indicating moonlighters is not significant. Thus, it appears that full-time entrepreneurs in the former GDR are distinctive with respect to weighting independence as important in society.

In Model III, we introduce a dummy marker for people that entered the market after May 1989 (*ENTRY90*), and for whether they planned to enter the market soon after the survey in May/June 1990 (*NASCENT90*). The dummy variables for both groups are significant and positive with respect to the stated desirability of autonomy in society. The significance and the coefficient for full-time GDR entrepreneurs remain virtually unchanged.

Table 2: Self-employment and autonomy: socio-demography & income

	I	II	III	IV
Panel A				
Reference group: non-entrepreneurs	REF	REF	REF	REF
SE_INC89	0.412*		0.412*	
	(0.211)		(0.214)	
SE_OCC89		0.746***		0.766***
		(0.180)		(0.181)
SE_MOON89		-0.256		-0.295
		(0.489)		(0.496)
Entry90			0.636***	0.665***
			(0.213)	(0.209)
Nascent90			0.540***	0.539***
			(0.190)	(0.190)
Age in years	-0.053***	-0.051***	-0.055***	-0.0539***
	(0.014)	(0.014)	(0.014)	(0.0141)
Age in years (squared)	0.001***	0.001***	0.001***	0.000670***
	(0.000)	(0.000)	(0.000)	(0.000174)
Woman (Yes = 1)	-0.050	-0.049	-0.037	-0.0345
	(0.055)	(0.055)	(0.055)	(0.0546)
F-Value	4.86***	6.58***	5.68***	6.98***

Observations	3,802	3,802	3,802	3,802
Panel B				
Reference group: non-entrepreneurs	REF	REF	REF	REF
SE_OCC89	0.857***	0.905***	0.870***	0.855***
	(0.179)	(0.188)	(0.196)	(0.195)
SE_MOON89	-0.277	-0.145	-0.203	-0.228
	(0.495)	(0.523)	(0.749)	(0.748)
Entry90	0.651***	0.592***	0.707***	0.728***
	(0.231)	(0.227)	(0.226)	(0.227)
Nascent90	0.525***	0.521***	0.562***	0.559***
	(0.199)	(0.188)	(0.209)	(0.205)
Gross income 1989 (log)	-0.119**		-0.116*	
	(0.058)		(0.065)	
Net income 1990 (log)		-0.214***		
		(0.074)		
Income Growth 1989/90 (log)			-0.017	
			(0.099)	
Gross income 1990 (log)				-0.103*
				(0.060)
Age in years	-0.030*	-0.035*	-0.030*	-0.042**
	(0.017)	(0.018)	(0.017)	(0.017)
Age in years (squared)	0.000**	0.000**	0.000*	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Woman (Yes = 1)	-0.063	-0.098	-0.050	-0.051
	(0.060)	(0.066)	(0.061)	(0.060)
Wald Chi2	6.13***	6.81***	5.22***	6.17***
Observations	3,590	3,044	3,492	3,579

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The results reported in Panel A might be driven by the income of GDR entrepreneurs, rather than being self-employed in socialism per se. Income and own financial independence might feed back into the rating of autonomy. Including the amount of gross income of respondents in May 1989, net income in 1990, or gross income into the model (Table 2, Panel B) does not affect the significant relationship between being a GDR entrepreneur and valuing autonomy.[10] In fact, income seems to be rather negatively related to evaluating independence.[11] Finally, GDR entrepreneurs are differentiated based on four income classes (earning more than 250, 500, 750, 1000 GDR mark per month). These

[10] In an alternative specification, we also control for whether a self-employed individual in the former GDR exited the market between 1989 and 1990. This does not change the coefficient size and significance of the main variables of interest.

[11] People who were not self-employed, but benefited from the socialist system might also have a value orientation in line with socialist principles (low priority for autonomy).

models show that income in self-employment hardly makes a difference with respect to valuing autonomy (Table A.3). This analysis also dispels concerns arising from the fact that many of the private sector activities were state-sanctioned activities, which, in turn, could imply that some of the self-employed had high incomes because they were well-connected to the regime. Even if this is the case, the relationship between self-employment and valuing autonomy holds for those self-employed respondents with low incomes. The columns of Panel B also show that controlling for income does not affect the statistically significant finding that people who started their venture after May 1989, and those that plan to do so at the time of the survey, value autonomy higher.

The results of the baseline analysis provide support for our first three hypotheses. In terms of effect size, having been self-employed in the GDR is associated with an up to 0.9 score higher rating of being independent relative to the mean rating of desirable character traits. A smaller effect size can be observed for nascent entrepreneurs and entrepreneurs that immediately entered during institutional upheaval (ca. 0.5 to 0.7). Hypotheses 4a and 4b state that the effect for both groups is smaller than for GDR entrepreneurs. This pattern is indicated by the size of the coefficients. However, the coefficients are not statistically significantly different when compared with the coefficient for GDR entrepreneurs (for details, see Table A.4). Therefore, Hypotheses 4a and 4b cannot be confirmed in an econometric sense.

4.3 Extended model

The models presented in Table 3 control for additional variables that might explain the importance attached to autonomy, and that might be correlated with self-employment. The models include the weekly hours worked in May 1990. Long working hours might reduce the utility derived from being self-employed. In addition, we control for the degree

of education, and we account for current employment status (full-time, part-time, not employed, vocational training, military service). All of these variables might feed back into the evaluation of autonomy.

Considering the additional variables comes at the cost of a reduced sample size due to missing values.[12] Nevertheless, having been self-employed in the GDR is significantly and positively related to revealing a high preference for autonomy. Model I and II of Table 3 suggest that this relationship is driven by those whose main source of income is earned in self-employment (*SE_OCC89*). Interestingly, the significant effect for new entrants vanishes in these models. In depth analyses show that if we control for level of education, this effect becomes insignificant (not reported). Joint significance tests reveal that level of education is related to valuing autonomy, and that this relationship should not be neglected. There is still a significant positive coefficient for nascent entrepreneurs.

In order to account for heterogeneity in the professional and economic sectors of the respondents, we use dummy variables to control for the industry and occupational environment. This does not change the positive relationship between having been self-employed in the GDR and placing emphasis on autonomy (Table 3, Column III and IV). Thus, it seems unlikely that the results are driven by the self-employed and nascent entrepreneurs selecting into specific industries and occupations.

Even in our more finely tuned extended models, the rating for autonomy is about 0.9 points higher for individuals that were already self-employed in the GDR. For nascent entrepreneurs and those that recently entered the market, this value is much smaller (ca.

[12] The slight differences in the number of cases compared to Benz and Frey (2008a), which make use of 2,675 observations, can be attributed to missing values for additional variables like employment status and nascent entrepreneurship. Furthermore, non-GDR citizens are not considered in the present analysis.

0.5 to 0.6). These findings also support our first three hypotheses. The much larger coefficient estimate for GDR entrepreneurs also suggests support for hypotheses 4a and 4b. However, once again the coefficient is not statistically significantly different from that for nascent entrepreneurs and those who recently started a venture. It seems that potential start-ups by the socialist ruling class that may not have been related to placing a high value on autonomy and independence are not impacting the results as expected.

Table 3: Self-employment and autonomy: full model

	I	II	III	IV
SE_INC89	0.556**		0.560**	
	(0.248)		(0.257)	
SE_OCC89		0.935***		0.922***
		(0.208)		(0.224)
SE_MOON89		0.086		0.157
		(0.548)		(0.547)
Entry90	0.489*	0.531**	0.499*	0.568**
	(0.250)	(0.245)	(0.279)	(0.271)
Nascent90	0.528**	0.534***	0.487**	0.495**
	(0.205)	(0.205)	(0.212)	(0.212)
Age in years	-0.035*	-0.033	-0.029	-0.028
	(0.021)	(0.021)	(0.021)	(0.021)
Age in years (squared)	0.000*	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Woman (Yes = 1)	-0.004	-0.005	-0.014	-0.010
	(0.077)	(0.077)	(0.091)	(0.091)
Working hours per week	-0.010	-0.008	-0.005	-0.004
	(0.015)	(0.015)	(0.015)	(0.015)
Working hours (squared)	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Net income 1990 (log)	0.035	0.041	-0.003	0.004
	(0.122)	(0.122)	(0.129)	(0.128)
Education (6 categories)	Yes	Yes	Yes	Yes
Employment Status (5 categories)	Yes	Yes	Yes	Yes
Job Dummies (61 categories)	No	No	Yes	Yes
Industry Dummies (29 categories)	No	No	Yes	Yes
F	3.76***	4.19***	1.66***	1.69***
Observations	2,619	2,619	2,619	2,619

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

5 Conclusions

The results of our paper indicate that there is a strong link between being self-employed and valuing autonomy, even in one of the most anti-entrepreneurial institutional environments in human history. Namely, in the socialist economic system of the former GDR before the fall of the Berlin Wall. Even in this environment, where individual autonomy was suppressed, people who were involved in entrepreneurial activity perceived being independent as an important character trait. Testing our hypotheses under the extreme conditions of the institutional framework found in the former GDR suggests that there is an overarching relationship between self-employment and valuing autonomy. Thus, the standard theory on the link between valuing autonomy and entrepreneurship can be detected beyond entrepreneurship-facilitating institutional framework conditions, which most research focused on in the past.

The results also show that people who start or plan to start their own business during an institutional upheaval that ushered in more entrepreneurship-facilitating institutions place a higher value on autonomy than other respondents. Thus, the standard theory on the link between valuing autonomy and entrepreneurship can be also detected beyond stable institutional framework conditions, which most research focused on in the past.

The estimates show that being self-employed in the GDR is associated with rating autonomy by up to 0.9 points higher as compared to people that did not reveal entrepreneurial intentions at the time of the survey. For nascent entrepreneurs and those that recently entered the market, the degree of this effect was much smaller. Nevertheless, the disparity between the different groups of entrepreneurs is not statistically significant. Al-

together, the analyses show that the relationship between valuing autonomy and entrepreneurship are not specific to stable and entrepreneurship-facilitating institutional frameworks. It is apparently also observable in contexts where entrepreneurs faced massive institutional barriers and, second, a context marked by significant changes of the institutional framework conditions for entrepreneurship.

There are a number of limitations in our study. First, because of the historical nature of the survey (conducted in 1990), there is only a single item to determine the value people attach to autonomy. A multi-item battery would be more common today, and may have allowed for a finer accounting of this specific value. Another conundrum is evaluating the difference between valuing autonomy and acting in an autonomous manner. If autonomy is defined as exercising decisional freedom (e.g., Patzelt and Shepherd, 2011), how much autonomous behavior were entrepreneurs permitted to engage in under the strict regulation of economic activity while working in a socialist environment. Be that as it may, it is safe to assume that valuing autonomy was likely to be higher among the self-employed as compared to those working in state-owned enterprises. Future research could focus on a more general debate about the effect of diverse institutional settings on the degree of autonomy perceived by self-employed people. Another limitation of the analysis is that the data is not longitudinal, as it does not provide information on valuing autonomy in later transition years. In their meta-analysis, Jin and Rounds (2012) show that work values are relatively stable. Therefore, it is not farfetched to assume that people that were self-employed in the GDR, as well as those that considered an entrepreneurial career during institutional upheaval, will still have a higher value priority for autonomy many years after the survey.

A general issue with the framing of the autonomy item in the survey is that it asks about the desirability of autonomy in society. It could be that the respondents perceive

autonomy as important for society, but not necessarily for themselves. Of course, this is rather counterintuitive. We might also consider this an opportunity for future research. Specifically, it would be interesting to discover if entrepreneurs value autonomy not only as a personal guiding principle, but also as an important value at the societal level. The results indicate that the bulk share of entrepreneurs do indeed see autonomy as an important value in society. This might be a starting point for assessing the degree to which this value priority guides entrepreneurs' decision-making, their external relationships or their entrepreneurial vision. It is curious that this aspect has not been discussed prominently in previous literature.

Another avenue for future research is investigating other values that are important to self-employed persons. One candidate is *mastery*, which is defined as challenging the existing socioeconomic conditions (Schwartz and Bardi, 1997). There is surprisingly little work on this value item even though challenging context conditions and overcoming external resistance is core to the Schumpeterian argument about the role of entrepreneurship. There is, unfortunately, no information in the dataset at hand about how the self-employed respondents might rate specific challenges presented by the existing conditions. Mastering the existing institutional aggression toward entrepreneurship and opposing the socialist system by sticking to a deviant economic practice (namely self-employment) might have been important motivations for selecting self-employment. The results of research conducted by Wyrwich (2015) show, for example, that the children of individuals who were self-employed in the GDR have a distinct priority for autonomy and mastery, suggesting an intergenerational transmission of entrepreneurial values. Future research should focus on values that are complementary to autonomy (e.g., mastery) and/or values that might even act as a substitute for autonomy. Such research would require the gathering of evidence from a variety of institutional and historical contexts to

determine whether entrepreneurial values are truly universal over space and time. Apart from that, it would be interesting to learn more about the personality structure of self-employed people in entrepreneurship-inhibiting environments. Previous research shows that entrepreneurs share certain personality traits (e.g., Brandstaetter, 1997; Zhao and Seibert, 2006; Rauch and Frese, 2007; Brown et al., 2011; Caliendo et al., 2011, 2014; Fairlie and Holleran, 2012; Verheul et al., 2012). However, not much is known about differences regarding the personality traits of entrepreneurs in distinct institutional contexts with varying degrees of approval of entrepreneurial activities.

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Appendix

Table A.1: Summary statistics for variables

	Mean	S.D.	Min	Max
Valuing autonomy	8.27	2.15	0	10
Age in years	39.21	12.74	18	65
Woman (Yes = 1)	0.51	0.5	0	1
Working hours per week	43.02	19.51	0	112
Income				
Gross income 1989 (log)	6.76	0.58	3.69	8.52
Gross income 1990 (log)	6.87	0.54	3.69	8.52
Income Growth 1989/90 (log)	0.12	0.34	-2.2	2.36
Net income 1990 (log)	6.76	0.45	4.55	8.29
Education				
Vocational,Specialist Training Completed (Yes=1)	0.58	0.49	0	1
Master Craftsman Degree(Yes=1)	0.06	0.23	0	1
Engineer And Vocational School Degree (Yes=1)	0.15	0.36	0	1
College, University Degree (Yes=1)	0.09	0.28	0	1
Other Type Of Education Completed (Yes=1)	0.02	0.15	0	1
No degree (Yes=1)	0.1	0.3	0	1
Employment status				
Full-time work (Yes=1)	0.73	0.45	0	1
Part-time work (Yes=1)	0.1	0.3	0	1
Vocational training (Yes=1)	0.03	0.16	0	1
Unemployed (Yes=1)	0.14	0.35	0	1
Military Service, Civil Service (Yes=1)	0.01	0.07	0	1

Notes: Statistics on occupation and industry controls are not reported for brevity. Please note that the centered score for valuing autonomy is used in the analysis to account for individual differences in scale use.

Table A.3: Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Valuing autonomy	1												
2	SE_INC89	0.022	1											
3	SE_OCC89	0.037**	0.814***	1										
4	SE_MOON89	-0.014	0.574***	-0.008	1									
5	Entry90	0.036**	0.019	-0.013	0.051***	1								
6	Nascent90	0.04**	-0.016	-0.013	-0.009	-0.014	1							
7	Age in years	0.014	0.028*	0.038**	-0.005	0.015	-0.023	1						
8	Woman [Yes = 1]	-0.012	-0.055***	-0.052***	-0.023	-0.057***	-0.049***	0.01	1					
9	Net income 1990 [log]	-0.068***	0.022	0.032*	-0.006	0.062***	0.031*	0.163***	-0.353***	1				
10	Gross income 1989 [log]	-0.045***	0.09***	0.078***	0.045***	0.031*	0.044***	0.225***	-0.308***	0.753***	1			
11	Gross income 1990 [log]	-0.046***	0.049***	0.047***	0.018	0.06***	0.048***	0.14***	-0.313***	0.945***	0.814***	1		
12	Income Growth 1989/90	-0.015	0.052***	0.033**	0.044**	-0.05***	-0.004	0.21***	-0.009	-0.026	0.446***	-0.157***	1	
13	Working hours per week	0.013	0.096***	0.108***	0.015	0.102***	0.07***	-0.142***	-0.32***	0.397***	0.35***	0.494***	-0.186***	1

Notes: Correlation of industry, occupation, education, and employment status controls are not reported for brevity.

Table A3: Self-employment and autonomy: additional assessment of income in 1989

	I	II	III	IV
SE_OCC89 Inc>=1000	0.892***			
	(0.198)			
SE_OCC89 Inc<1000	0.469			
	(0.370)			
SE_OCC89 Inc>750		0.828***		
		(0.196)		
SE_OCC89 Inc<750		0.559		
		(0.418)		
SE_OCC89 Inc>500			0.864***	
			(0.181)	
SE_OCC89 Inc<500			-0.208	
			(0.620)	
SE_OCC89 Inc>250				0.861***
				(0.177)
SE_OCC89 Inc<250				-0.522
				(0.742)
SE_MOON89	-0.159	-0.159	-0.159	-0.159
	(0.522)	(0.522)	(0.522)	(0.522)
Entry90	0.654***	0.654***	0.654***	0.654***
	(0.210)	(0.210)	(0.210)	(0.210)
Nascent90	0.541***	0.541***	0.541***	0.541***
	(0.190)	(0.190)	(0.190)	(0.190)
Age in years	-0.054***	-0.054***	-0.054***	-0.054***
	(0.014)	(0.014)	(0.014)	(0.014)
Age in years (squared)	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Woman (Yes = 1)	-0.032	-0.033	-0.032	-0.033
	(0.055)	(0.055)	(0.055)	(0.055)
F value	6.54***	6.23***	6.67***	6.81***
Observations	3,802	3,802	3,802	3,802

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A4: Effect sizes of groups of respondents in reference to GDR entrepreneurs

	Table 2 Panel A column II	Table 2 Panel A column IV	Table 2 Panel B column I	Table 2 Panel B column II	Table 2 Panel B column III	Table 2 Panel B column IV
Reference group: SE_OCC89	REF	REF	REF	REF	REF	REF
NO_SELF	-0.644***	-0.766***	-0.858***	-0.906***	-0.871***	-0.856***
	(0.116)	(0.181)	(0.179)	(0.188)	(0.196)	(0.195)
SE_MOON89	-0.804	-0.926*	-0.996*	-0.882	-0.819	-0.832
	(0.533)	(0.551)	(0.550)	(0.581)	(0.849)	(0.848)
Entry90		-0.113	-0.219	-0.320	-0.175	-0.140
		(0.274)	(0.291)	(0.291)	(0.297)	(0.296)
Nascent90		-0.226	-0.331	-0.384	-0.307	-0.296
		(0.259)	(0.265)	(0.263)	(0.284)	(0.280)

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Controls and test statistics are not reported. They are the same as in the respective models of table 2 the columns of the present table refer to.

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