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Much Ado about Nothing? The Surprising Persistence of Nascent Entrepreneurs through Macroeconomic Crisis

ABSTRACT

Using the Global Financial Crisis (GFC) as a natural experiment, we investigate how a major macroeconomic crisis affects nascent (i.e., pre-operational) ventures. Such knowledge is essential for a better understanding of the mechanisms behind aggregate effects of crises on the number and type of start-ups in an economy. Based on Hirschman's (1970) Exit-Voice Theory we hypothesize that a crisis would increase founders' propensity to either terminate their involvement with the venture (Exit) or undertake remedial action such as increased work effort or simplification of the venture (Voice). Further, we hypothesize that a higher degree of commitment to the venture (Loyalty) decreases the effect on Exit while increasing the effect of the crisis on Voice. We find no support for our hypothesized main effects. We find support for one of our moderation hypotheses: Loyalty moderates the GFC effect on venture growth ambition. After discussing method factors and counterbalancing effects as possible reasons for limited main effect support we conclude that the main reason for the relative absence of effects is entrepreneurial persistence - for good or bad. Our findings suggest that decreases in the number of start-ups—especially "high potential start-ups"—that research has shown follow from a crisis may be due more to potential founders (temporarily) refraining from initiating a start-up attempt at all, rather than to termination or redefinition of already on-going start-up efforts. Our findings also suggest a number of ways in which Exit-Voice Theory could be further refined.

INTRODUCTION

How does a sharp macroeconomic downturn affect entrepreneurial activity? A careful reading of the extant literature gives a fair idea of how an external shock like the Global Financial Crisis (GFC) can affect the number and composition of independent business start-ups in an economy. However, evidence is lacking on how the behavior of nascent entrepreneurs—i.e., individuals who are currently actively involved in a not-yet-up-and-running start-up (Davidsson & Gordon, 2012; Gartner & Shaver, 2012; Reynolds, 2009)—is affected by a macroeconomic crisis (Saridakis, 2012). Such research is needed in order to develop a better understanding of how aggregate changes in the start-up activity are derived from effects on a) selection *into* the start-up process (i.e., what types of individuals attempt what types of start-ups),

b) selection *out of* that process (i.e., what types of individuals associated with what types of start-ups give up before completing the process), and c) adaptation and redefinition of the venture in the light of the new realities imposed by the crisis.

From a policy perspective it is particularly important to know whether on-going start-ups are terminated at a higher than normal rate and/or adapt by pursuing less innovative and growth-oriented strategies because of the crisis. If so, policies to keep start-up efforts going may be justified on similar grounds as handouts to consumers to stimulate demand (Wanna, 2009) or tax adjustments to help small businesses survive the crises (see, e.g., Smallbone, Deakins, Battisti, & Kitching, 2012, regarding New Zealand GFC policies). If, on the other hand, nascent ventures spontaneously go essentially unscathed and unchanged through the crisis, expenditure of public funds to help them keep going would not be warranted.

We use Hirschman's (1970) Exit-Voice Theory and two-wave panel data to investigate the effects of a sharp economic downturn on the behavior of nascent entrepreneurs. The onset of the GFC occurred during the second wave of our data collection, meaning that similar-sized subsamples were followed up prior to and after the onset of the GFC, respectively. This created a natural experiment situation, which makes it possible to distinguish genuine effects of the GFC from other influences over time.

Our study makes the following contributions. First, we provide previously missing empirical evidence on how nascent entrepreneurs react to a major, macroeconomic crisis. This provides insight into how aggregate effects on the rate and composition of new venture creation come about, which has important implications for policy and public spending. Second, our application of Exit-Voice Theory in this domain tests boundary conditions of the theory and reveals several opportunities for refinement of it. These observations have bearing for the use and usefulness of

Exit-Voice Theory in other domains as well. Third, our findings provide important observations to inform debates on the “vulnerability” versus “resilience” views on small and early stage business ventures.

Below we first provide a brief review of prior empirical research of direct relevance to our research question. This is followed by a section delineating our theory and hypotheses. We then move on to describing our methods choices and procedures, followed by reporting of our results. Finally, we discuss implications and alternative interpretations of our results. We close with our theoretical and empirical main conclusions.

PRIOR EMPIRICAL INSIGHTS ON EFFECTS OF MACROECONOMIC CRISES AND BUSINESS START-UPS

Financial crises can be cast as a special case of the broader phenomenon of environmental jolts or shocks (e.g., Haveman, 1992; Meyer, 1982; Sine & David, 2003; Venkataraman & Van de Ven, 1998). However, it is also a phenomenon which in its own right is more frequent than commonly believed (Reinhard & Rogoff, 2010). Importantly, unlike more localized shocks that have undeniable negative impact on specific industries, regions, and firms, macroeconomic crises may or may not have, or be perceived to have, relevance for and impact on the immediate task environment of a majority of start-up efforts. We therefore turn to two related, macro-oriented literatures to shed some light on the likely effects of macroeconomic crisis on nascent ventures. One of these addresses business cycle downturns more broadly whereas the other focuses more narrowly on the effects of high unemployment. It should be noted that our interest is on the effect on start-up rates. Hence, the effects that are of immediate relevance are those pertaining to the propensities a) to initiate or not initiate business start-up attempts and b) to terminate or successfully complete them. Exits of established businesses do not directly affect the start-up rate.

At first glance both literatures give a mixed picture. A recent study of effects of the GFC itself suggests that business registrations fell in most countries studied, and more so in countries that were more severely affected (Klapper & Love, 2011). Similarly, studying effects of the sharp downturn in Sweden in the early 1990s, Davidsson, Lindmark and Olofsson (1999) found that job creation by new, independent firms fell significantly. Evidence suggests that small and medium sized firms experienced reduced employment during the GFC (Cowling, Liu, Ledger & Zhang, 2014). However, results from the Global Entrepreneurship Monitor (GEM) surveys do not reveal a sharp or general decline in response to the GFC as regards the proportion of the adult population engaging in nascent ventures across a large sample of countries (Bosma & Levie, 2010; Kelley, Bosma, & Amoros, 2011). Studying the Asian Financial Crisis in the late 1990s, Paulson and Townsend (2005) even found that entrepreneurial activity—measured as the proportion of households operating a business—*increased* sharply in Thailand as a result of the crisis.

The literature on exits of established young/small/independent businesses tends to emphasize either the *vulnerability* or the *resilience* of such firms; the former deriving from liabilities of smallness and newness pertaining to such firms, while the latter is typically attributed to their alleged greater flexibility and adaptability (Pal, Torstensson, & Mattila, 2013; Power & Reid, 2005; Smallbone et al., 2012). The evidence lends support to both views. In line with the vulnerability thesis, exit rates are typically higher for young/small/independent firms. However, such firms appear less negatively affected by a macroeconomic crisis (Bradley, Aldrich, Shepherd, & Wiklund, 2011; Davidsson et al., 1999). Large-scale, multi-cohort and longitudinal evidence from the US and Sweden shows that the survival of start-ups does not appear to vary markedly with the fluctuations of the business cycle (Headd & Kirchhoff, 2009;

ITPS, 2003). Recent research suggests that small firms affected adversely by the GFC bounce back quickly (Cowling et al., 2014). This is in line with the resilience thesis.

Results from the literature focusing on unemployment and new firm formation are equally mixed. It appears that depending on the specific context (and method) of the study the relationship may come out positive, negative, or neutral (Blanchflower, 2000; Evans & Leighton, 1989; Hamilton, 1989; Moore & Mueller, 2002; Thurik, Carree, van Stel, & Audretsch, 2008). The research on unemployment effects also points at a possible solution to the conundrum. High levels of unemployment reflect poor demand conditions as well as restricted access to external funding, which should depress new firm formation. At the same time higher unemployment means that more people have reason to find alternative ways to support themselves. In a generally depressed labor market this would stimulate higher numbers of business start-ups, especially of the income-substitution type.

This suggests that depending on which effect is stronger the total number of start-ups or start-up attempts may turn in either direction as a result of a macroeconomic crisis. However, the type of individuals and type of businesses that make up that aggregate figure would likely change, with a decrease in businesses with high capitalization requirements and high growth potential. This is also what a closer examination of the evidence suggests. Studies finding negative overall effects give more weight to start-ups of “higher quality”, pursued by those with more working experience (Grilli, 2012). Klapper and Love (2011) include only limited liability companies, thus excluding large numbers of simpler businesses. Davidsson et al. (1999) focused on the aggregate job contributions of start-ups rather than on their raw numbers, finding the marked decline that is to be expected should the proportion of higher-ambition start-ups drop. Although they report an increase in total numbers, Paulson and Townsend (2005) also provide

direct evidence of the crisis leading to large numbers of simple start-ups with very low initial investment and thus to a qualitatively different start-up cohort than that being created before the crisis. Similarly, GEM data show that whereas its effect on overall start-up numbers may be ambiguous, the GFC was associated with a clear downturn in perceptions of opportunity while the proportion of necessity-based start-ups increased (Kelley, et al., 2011). Further, reductions in sales growth during the GFC, compared to the period prior, was more pronounced in businesses whose founders possessed enhanced human capital (Cowling et al., 2014).

Thus, overall the evidence suggests that the immediate effects of a financial crisis are to reduce the numbers of “higher-ambition” and “higher-potential” start-ups, whereas the total numbers may develop in either direction. Our study can shed light on the question whether observed overall effects occur because potential founders refrain from initiating a start-up process; because they fail to complete it, or because they alter the nature of the venture in response to the changed circumstances.

THEORY AND HYPOTHESES

Exit-Voice Theory

No established theory deals specifically with how nascent entrepreneurs, i.e., founders of on-going but not yet completed start-up attempts, react to the onset of a major economic crisis. Neither does the prior empirical literature address this issue. A plausible starting assumption is that most founders will perceive the change in conditions and that, if anything, it will be interpreted as a change for the worse: the nascent start-up appears less promising than it did prior to the onset of the crisis. We therefore view Hirschman’s (1970) Exit-Voice Theory as a suitable theoretical tool for the framing of our hypotheses.

A generic theory of human behavior in the face of decline, Exit-Voice Theory holds that individuals associated with an organization (e.g., employees in or customers of a business;

citizens of a nation) have two possible courses of action when they perceive that the organization is undergoing a change that decreases its benefit to the member: they can Exit (withdraw from the relationship) or they can Voice their discontent in the hope that this will lead to improvements (as explained below, Voice has broader meaning, including remedial action). By combining the two outcomes, Hirschman aimed to develop a more complete theory than either Economics or Political Science, which tend to focus singularly on Exit or Voice, respectively. Further, he introduced Loyalty—the individual's degree of commitment to the organization—as a moderator of the effects of decline on both Exit and Voice.

Exit-Voice Theory has been applied in many domains. Hirschman (1970) discussed the theory and its implications in relation to competitive business enterprises, voluntary associations, public service providers, trade unions, political parties, family, tribe, church, school and state (1970, pp. 3, 16, 76-77). Ling, Hwang, and Chen (2010) used the theory in the context of international relationships among nations, while Rusbult, Verette, Whitney, Slovik and Lipkus (1991) applied (a variant of) the theory to close personal relationships. The review by Dowding, John, Mergoupis and van Vugt (2000) mentions work on intergroup processes (e.g., ethnic groups), urban and neighborhood studies, and studies of employees' relationships with their employers as major application areas. In the business domain an application close to ours is Dyck and Starke's (1999) work on spin-off start-ups. We also find work on shareholder discontent (Hillman, Shropshire, Certo, Dalton, & Dalton, 2011); family business (Khavul, Bruton, & Wood, 2009) and importer-exporter relationships (Payan, Obadia, Reardon, & Vida, 2010). The work on employee relationships brings us closest to our use of the theory in the area of nascent entrepreneurship, which can also be viewed as dealing with self-employment decisions (cf. also Audretsch & Keilbach, 2004).

Main effect hypotheses

Like consumers, employees or citizens, nascent entrepreneurs can choose the Exit option, i.e., they can terminate the venture or their involvement with it when they learn that its prospects are probably not as great as previously believed. Accordingly, the onset of a macroeconomic crisis should make founders more likely to Exit; especially those already doubting the viability of their venture idea (Dimov, 2010). Further, we can presume this exit response would have come later or not at all in the absence of a macroeconomic crisis.

It may be noted that the expectation of Exit responses builds on the type of assumptions used in economics and population ecology, where inert actors are selected out if they are not apt for success in the prevailing environment. That is, actors are not expected to learn to adapt, but rather to learn that they are not suited for the task. A well-known example in a context close to ours is Jovanovic (1982) theory of industry selection, where firms that learn that they are inefficient choose to exit rather than making efforts to improve their efficiency.

The Exit argument is also in line with the vulnerability theme discussed by Smallbone et al. (2012). Liabilities of smallness and newness (Aldrich & Auster, 1986; Freeman, Carroll, & Hannan, 1983) would make nascent entrepreneurs likely to give up in response to a crisis because of limited internal resources to mitigate the consequences of the crisis; a narrow (potential) customer base; reliance on a single product/service line increasing the risk of a fatal setback, and weak bargaining power in relations with resource providers further increasing their vulnerability. In line with this reasoning, Bradley et al. (2010) found that established independent businesses increased their exit propensity by 62 percent in response to a financial crisis, while Pal et al. (2013) report a doubling of bankruptcies in the textile and clothing industry during the GFC. If effects on nascent entrepreneurs are similar, a positive effect of macroeconomic crisis on

Exit should be expected. In accordance with this type of theoretical assumption and prior empirical findings, our first hypothesis is:

H1: The onset of a major macroeconomic crisis makes nascent entrepreneurs more likely to Exit, i.e., to terminate their involvement with a venture creation attempt.

Founders not prone to give up may instead intensify their efforts. This leads us to Hirschman's (1970) notion of Voice. This label derives from Political Science, where the alternative to Exit usually is expression of discontent and pleas for corrective action. However, Hirschman (1970: 30) defines Voice as "any attempt at all to change, rather than to escape from, an objectionable state of affairs" where this includes "various types of actions." Accordingly, other researchers also include remedial action in the concept of Voice (e.g., Dowding et al., 2000; Rusbult, Farrell, Rogers & Mainous III, 1988; Vidal, 2012). Thus, if Exit is aligned with theoretical assumptions underlying environmental selection, Voice is Hirschman's (1970) version of the strategic choice argument (Child, 1972). In the entrepreneurship literature, the Voice response is in line with arguments about resilience, building on notions of flexibility and adaptability of young/small/independent firms (Smallbone et al., 2012).

Compared to consumers, employees or citizens, the situation is different for nascent entrepreneurs. Being the principal decision makers of the ventures they are trying to establish they do not have a micro-level counterpart to whom they can express discontent with any hope of remedial action resulting. On the other hand, they are not restricted to merely expressing their disappointment in the hope that powerful others would initiate the change they are seeking. Instead, equipped with more autonomy than employees (Hundley, 2001) nascent entrepreneurs

can take action themselves in order to compensate for the setback. Therefore, the manifestation of Voice that we are investigating represents what Dowding et al. (2000) call “Individual Voice” in the form of concrete, remedial action.

Among nascent entrepreneurs, one likely response would be to work harder in order to mitigate the setback caused by the macroeconomic crisis. Those who are not giving up (as per our Exit hypothesis) may instead intensify their efforts in order to see their emerging venture make it through the hard times. Accordingly:

H2a: The onset of a major macroeconomic crisis makes nascent entrepreneurs exercise more Voice in the form of increased efforts to bring the venture creation attempt to completion.

Another response to try to save the emerging venture would be to change aspects of its business model or market strategy in order to increase its success potential in the new environment. Our introductory review of the empirical literature suggests such changes would not be random but tend in a specific direction, namely towards a simpler, less ambitious business. A major theme in writings on the GFC is the “credit crunch” (Cowling, Liu & Ledger, 2012; Smallbone et al., 2012). The empirical evidence is that younger and smaller businesses found it more difficult to access external finance during the GFC (Cowling et al., 2012). However, a simpler, less ambitious business would be less in need of external finance and thus less affected by changes in the availability of credit. To put it the other way around, a simpler, less ambitious venture may be the only realistic alternative when external capital dries out. Further, all nascent ventures are new actors in the market and are therefore subject to liabilities

of newness, smallness and lack of legitimacy (Aldrich & Fiol, 1994; Delmar & Shane, 2004). When novelty—innovation—is added to newness these challenges are aggravated (Amason, Shrader, & Tompson, 2006). In addition, it has been suggested that negative environmental shocks further increase the hurdles created by novelty (Shepherd, Douglas, & Shanley, 2000). While innovative businesses may enjoy better average performance once they are up and running, the evidence suggests that they are more difficult to get off the ground in the first place (Samuelsson & Davidsson, 2009). Therefore, in order to successfully navigate through the harsher conditions created by the crisis, founders have reason to modify their nascent ventures in a less novel direction. Accordingly, our hypotheses are:

H2b & H2c: Nascent entrepreneurs who choose not to Exit in response to the onset of a major economic crisis are likely to exercise Voice by reducing the novelty (H2b) and growth ambition (H2c) of the nascent venture.

Moderation by Loyalty

In Hirschman's (1970) original theorizing, Loyalty refers to what may elsewhere be labeled *commitment*, and it is theorized to moderate the behavioral response to decline. In our setting, Loyalty to the nascent venture could be based on having invested more time and effort in it already; a strong emotional connection to the venture and its "cause", and/or the dispositional passion or optimism (Cardon, & Kirk, 2013; Cardon et al., 2005; Dowding et al., 2000; Hmieleski & Baron, 2009) that is often ascribed to entrepreneurs. Thus, Loyalty may be a double-edged sword, potentially leading to detrimental escalation-of-commitment in situations

where termination is the better option (DeTienne, Shepherd, & De Castro, 2008; Holland & Shepherd, 2013).

Regardless of its source, Loyalty may deter or defer Exit. For example, Hirschman (1970: 76) mentions the difficulty of using Exit in response to disappointment with entities to which one has stronger bonds, such as family, tribe, church or state. In our case, Loyalty would reduce the propensity to terminate the venture or the founder's involvement with it. As regards Voice, in Hirschman's conception it is not expected that the more loyal endure the decline in silence. On the contrary, it is the more loyal—those who care more about the organization—who are more likely to exercise Voice, i.e., to undertake “any attempt at all to change” the “objectionable state of affairs” (Hirschman, 1970: 30). Hence, we suggest the following four hypotheses:

H3: Loyalty negatively moderates the relationship between the onset of a major macroeconomic crisis and nascent entrepreneurs' propensity to Exit. With increasing Loyalty, Exit is less likely to occur.

H4: Loyalty positively moderates the relationship between the onset of a major macroeconomic crisis and the exercise of Voice to improve the nascent venture's prospects. With increasing Loyalty, more increase in work effort (H4a) and more simplification of the nascent venture will occur in terms of reduced novelty (H4b) and growth ambition (H4c).

METHOD

The empirical setting: the GFC in Australia

As will be detailed below we use panel data about nascent entrepreneurs in Australia. It has been concluded in retrospect that Australia was far less hit (longer term) by the GFC than were

the US and Europe (Le Queux & Waring, 2010). However, this was not at all clear at the time of our data collection. On the contrary, various economic indicators show that the interview period was indeed characterized by extreme conditions in Australia. Business confidence and related indicators fell very markedly to reach their lowest levels of the decade (National Australia Bank, 2011). Further, from September 22, 2008, to March 6, 2009, the leading stock market index (ASX) fell by 38 percent, representing a deeper fall and slower recovery than the Dow Jones (Yahoo, 2014). The Australian dollar fell against the USD, EUR and GBP (from .81 to .62, close to 25%, against the USD) and took a full year to get back to the original level (XE Currency Converter, 2014). This underlines that in important respects the early GFC effects were even more dramatic than in these countries.

Further, the Reserve Bank of Australia had over the preceding six years adjusted the guiding “cash rate” on average twice per year; always upwards, and always in increments of .25 percent. By contrast, from September 2008 to April 2009 there were six downward changes over eight months in average increments of -.75, resulting in the lowest rate on record at the time, 3.0 percent (Reserve Bank of Australia, 2014). Similarly, debt agreements, bankruptcies, and “Part X Administrations” peaked in the 2nd, 3rd, and 4th quarter of 2009, respectively, at levels that were unprecedented (the former two) or not seen for over ten years (the latter) (ITSA, 2012). After hovering around 315-335,000 over the preceding years, new business registrations dipped to under 300,000 in 2008-2009 (Australian Bureau of Statistics, 2011). After years of unbroken increase, house prices were on a downward slope in the late part of 2008 and well into 2009 (Murphy, 2011), the third quarter of 2008 seeing the biggest negative adjustment in modern history (Australian Bureau of Statistics, 2010). Further, non-performing, securitized home loans (defined as being more than 90 days in arrears) also reached unprecedented levels following the

onset of the GFC, in value as well as in numbers (Reserve Bank of Australia, 2009). National statistics on foreclosures (mortgage repossessions) are hard to find; a report based on court statistics suggests that in the state of Queensland they were 60 percent higher in 2009 than in 2007 (LCCQ, 2010).

All in all, there is no doubt that at the time of our post-GFC interviewing, economic actors in Australia were facing drastic economic downturn and very considerable uncertainty. Thus, the empirical setting should be suitable for testing our hypotheses.

Sample and design

The data used for testing our hypotheses are from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE). Adult members of 30,105 Australian households, selected through random digit dialing, were screened for status as nascent entrepreneurs (NE) using techniques that were carefully refined in prior projects (Reynolds, 2009). A total of 625 individuals qualified as NEs and also completed a comprehensive, 40-60 minutes long telephone interview (W1), either directly or by later appointment. To qualify as NE they needed to be currently engaged as active (part) owners in an emerging business venture where some concrete action had been taken towards its realization (a lower limit) but where the venture did not as yet yield positive cash flow on a regular basis (an upper limit).

As close as possible to 12 months after the first interview, respondents were re-contacted for an equally comprehensive follow-up interview (W2). The number of respondents in W2 is 493 (78.9% of eligible cases). This is the effective sample size for our Exit analysis. Of the W2 respondents, 337 were still actively involved in the start-up and could thus meaningfully participate in the full W2 survey. Thus, 337 cases is the (maximum) sample size for our tests of hypotheses pertaining to Voice (96% of 350 continuing nascent ventures; 13 respondents had left

a still active start-up team). Due to item non-response the effective sample size is slightly lower in displayed analyses. See Davidsson and Steffens (2011) and Davidsson, Steffens and Gordon (2011) for further details on CAUSEE and its sample.

The W2 interviews took place from July 24, 2008 to June 11, 2009. The Lehman Brothers collapse, which is often cited as the starting point of a uniquely deep and global crisis (e.g., Milesi-Ferretti & Tille, 2011; Ocampo, 2009; Rauch, Doorn, & Hulsink, 2014) occurred on September 15, 2008. The data referred to in the Section on The empirical setting: the GFC in Australia (above) confirm that it is after this event that economic indicators in Australia turned sharply downward to reach unprecedented levels. The fact that the W2 follow-up interview took place before the onset of the crisis for one large part of the sample, and after it for the remaining, sizeable part of it creates the natural experiment that we utilize for this research. See further our operationalization of “Post- vs. pre-GFC” below.

Qualified NEs were regarded as informants on behalf of the venture start-up they were involved in. Consequently, where applicable, questions refer to the venture and the entire start-up team, and question wording was adapted accordingly.

It is important to keep in mind that although a significant minority in a random sample are innovative entities with potential for growth, true high-tech and potential high-growth ventures set for Venture Capital backing and eventual IPOs are a tiny minority (Davidsson & Gordon, 2012; Samuelsson & Davidsson, 2009). However, due to their sheer numbers the “modest majority” may have important effects on the overall economy.

Operationalization: dependent variables

Exit. As Hirschman’s theory is about individual responses and some ventures are founded by more than one individual, we measure Exit on the individual level. Specifically, Exit is a

dichotomous variable where (1) is recorded for cases where either the respondent or any other (owner) team member terminated their involvement between W1 and W2 interviews. For all other cases a (0) is recorded. Note that in some cases of individual level Exit the venture is continued by other team members. In the Difference in Difference (DID) version of our analysis (explained below) we use a count version of the variable: the number of team members who have terminated their involvement (equal to team size in the case of venture termination). The Exit questions were in part harmonized with the PSED II project in the US, where they originally appeared (Reynolds & Curtin, 2009).

As this research uses a natural experiment situation (unplanned by definition) we are restricted to Voice indicators that refer to the respondent's current and future situation; not the past (which may be pre-GFC for post-GFC respondents). We use the following indicators:

Voice—Increased Work Effort. Increase in work effort is measured at the venture level as the W1-to-W2 increase in hours in response to the question “How many hours per week do you [and all other owners combined] currently work for this business?” tested against “no increase”.

Voice—Reduced Novelty. This measure was based Dahlqvist and Wiklund's (2012) measure, adapted to the nascent venture contexts and expanded to cover four forms of novelty: 1) product or service; 2) promotion or selling; 3) production or sourcing; and 4) target market or customers. Respondents who reported a lower novelty rating in W2 were asked to confirm that this was due to their action rather than learning that their firms was less novel than they first thought. For example, “According to your answers the method for promotion or selling now has a lower degree of newness than you reported a year ago. Is that mainly because you have changed the method for promotion or selling or mainly because you have found it was less different from what other firms do than you first thought?” Reduced Novelty is a dichotomous variable, with all

respondents that reported actively reducing some aspect of novelty coded (1), and those that did not coded (0). This measure is desirable over the raw W1-to-W2 difference in novelty rating as that measure would confound changes due to behavior with those due to chance or initial (W1) over-estimation of firm novelty. However, as dichotomous variables are not appropriate for DID we used the continuous variable reduction in total novelty W1-to-W2 for that analysis.

Voice—Reduced Growth Ambition. The respondents were asked “Which of the following two statements best describes your preference for the future size of this business: I/we want this business to be as large as possible, or I/we want a size I/we can manage myself/ourselves or with a few key employees?” Reduced Growth Ambition is a dichotomous variable coded (1) for those that reduced their ambition from W1 to W2 while all others were coded (0). For the DID analysis we used a continuous variable based on projected numbers of employees. While this continuous version of this variable is arguably the more desirable measurement form, substantial internal non-response precludes its use in the main analyses.

Operationalization: independent variable; moderator, controls and manipulation check

Post- vs. pre-GFC. This is a dichotomous variable reflecting whether the W2 interview with the respondent was undertaken before (0) or after (1) the onset of the GFC, defined as the Lehman Brothers collapse on September 15, 2008. In the analysis of Exit, there are 181 pre-GFC and 312 post-GFC cases. In the remaining analyses, which exclude cases that have exited, the corresponding (maximum) numbers are 121 and 216, respectively. It should be noted that the W2 interview was scheduled as closely as possible to 12 months after the individual respondent’s W1 interview. Therefore, an interview later in the wave does not imply that the venture is further progressed in the start-up process.

Moderator - Loyalty. In line with the recommendation by Dowding et al. (2000) we operationalize Loyalty in terms of past investments. However, rather than using monetary investments—which vary considerably across industries and which are also empirically problematic due to internal non-response—we use two other indicators. The first Loyalty indicator is *Full Time Work*, reflecting whether any of the founders were regularly working 35 hours or more per week on the venture at W1. The other Loyalty indicator is *Development Stage*. This is a count of the number of “gestation activities” (such as preparing a business plan; deciding on a location, raising funds; registering the firm; opening a website, etc.; see Gartner, Carter, & Reynolds, 2004) that were already undertaken at W1.

Control—Gender. Two dummy variables capture gender. The first captures whether the firm founders are a solo male or all male team (1) compared to solo females, all women teams, or mixed-gender teams (0). Similarly, the second dummy captures solo females or all women teams (1) versus solo males, all male teams, or mixed-gender teams (0).

Control—Age. We control for age at using the age of the oldest founding team member.

Control—Industry. We control for industry effects through dummy variables for each of seven industries that account for at least five percent of our cases, using “Other” as reference.

Control—Novelty. Our measure of total novelty (or height of innovation) is based on the scale developed by Dahlvist and Wiklund (2012; see Reduced Novelty above). The four forms of novelty were combined into a formative index (Diamantopoulos & Winklhofer, 2001), with a 0-12 range.

Control - Major loan funding. We included a control for external funding because of the “credit crunch” aspect of the GFC. In W1 the respondents were asked, for a range of possible funding sources, whether the source had been used not at all; as a minor funding source, or as a

major funding source. The latter was defined as 20 percent or more of total funding needs. We computed a dichotomous variable with value (1) if one or more sources of external debt (other than personal credit card) were rated as major sources and value (0) for all other cases. As only 20 percent of our cases have “Major loan funding” the majority need not be much affected by the “credit crunch” aspect of the GFC.

Control—Human capital. We control for general and specific human capital at the level of the venture. To measure general human capital we use a dichotomous variable indicating whether the founding team includes someone with a *University degree* (1) or not (0). To measure specific human capital we use a dichotomous variable that captures whether anyone in the firm founding team had *Prior start-up experience* (1) or not (0).

Control—Solo venture. Because some of our DVs are assessed on the venture level (or across all team members, where applicable) it is potentially important to control for whether the venture is started by a team or by a single individual. This control is a dummy variable with value (1) for solo ventures, which make up just over 50 percent of the sample.

Table A1 (Appendix) reports the correlations among the variables in our study.

Manipulation check—Others’ 5-year survival probability. In each wave respondents were asked “In this research we are talking to hundreds of early stage start-ups. If we take one hundred of them at random, how many do you think will still be operating five years from now, regardless of who own and operate them?” (cf. Cooper, Woo, & Dunkelberg, 1988). The W1-to-W2 reduction in Others’ 5 year survival probability reflects an estimate of the expected severity of the GFC. Hence, we use this variable as a manipulation check for our natural experiment, i.e., to verify that there is a difference in the economic environment perceived by Post- vs. pre-GFC cases (Cozby, 2009)..

Analysis approach

Hierarchical logistic regression (Hosmer & Lemeshow, 2004) was used to test our Exit hypothesis (H1) and Voice hypotheses relating to venture simplification (H3b, H6 and H8). Our other Voice variable is a count of the work hours increased; hence, negative binomial regression analysis was the most appropriate analysis (Cameron and Trivedi, 1998). Regression coefficients and the change in model fit were used to assess the influence of the GFC and interaction terms on the dependent variables. One-tailed tests of statistical significance are reported for all directional, hypothesized effects. This is consistent with empirical support reported as “significant on the X percent level” meaning there is X percent risk the result is a false positive. Two-tailed significance levels are reported for non-hypothesized relationships.

In order to confirm the results for main effects of the GFC we also analyzed the magnitude of change in all multi-wave dependent variables using the Difference-in-Differences technique (Card & Krueger, 1994; Meyer, Viscusi, & Durbin, 1995). As mentioned above, for this analysis we used continuous versions of the dependent variables.

Difference in differences (DID) is a quasi-experimental technique which calculates the average treatment effect in natural experiments such as this. It is therefore the most appropriate technique available for our purposes. However, it does not allow interaction effects, dichotomous or count variables to be modeled as dependent variables. We therefore present logistic and negative binomial regression results in our main body text. W1 responses produce a baseline measure for each DID variable, and W2 follow-up responses before and after the GFC isolate the within-subjects change that may be attributed to it. This technique relies on two assumptions. The first assumption is that assignment to the treatment group is random. In this case we infer

that random sampling at initial recruitment results in random assignment to the treatment group. The second assumption is that there is a common trend within experimental groups. Here we rely on a common between-wave interval of approximately one year for all subjects, and that the initial interview occurred well before the onset of the GFC. An initial DID analysis focused on the dependent variables in isolation, and linear regression estimated the total explained variance. A second DID analysis included control variables as covariates in the differences estimation.

We expect that should our results reflect the true nature of the underlying main effect of the GFC on nascent venturing then the two types of analysis employed would agree. The use of two analysis approaches where the results concur ensures confidence that the results obtained were not due to a method effect which may have accidentally capitalized on the distributional properties of the dependent variables.

A large number of robustness tests and auxiliary analyses were conducted in order to help the interpretation of the observed results. A summary of these analyses will be given in a separate sub-section towards the end of the Results section.

Our setting as an arena for testing Exit-Voice Theory

Although different from the settings that were Hirschman's immediate inspiration for developing Exit-Voice Theory it is worth noting that our context has certain compelling features as an arena for testing it, and that our study compares well to prior research in terms of some of the problems Dowding et al. (2000) identified in their review. They call for longitudinal and experimental studies (p. 491); we have a natural experiment with pre- and post-measurement, making the context suitable for causal inference. Dowding et al. (2000: 473-5) point to circumstances where Exit and Voice are simultaneous; Exit follows Voice, and Voice follows Exit (see also Dyck & Starke, 1999; McClean et al., 2013). This does not complicate our study,

because the types of Voice that we investigate can only be reported by founders who choose not to Exit within the study's time frame.

Dowding et al. (2000: 472, 491) raise the issue of the theory's ambiguity concerning individual vs. collective Voice or Exit. Our study is essentially about what they would classify as the individual versions of these constructs. In addition, our use of a nascent entrepreneur context gears our operationalizations of Voice towards a focused set of rather tangible behaviors representing increased effort and strategic change. Further, Dowding et al. (2000) repeatedly lament the use of Loyalty as a separate behavioral response. We use it as Hirschman (1970) intended it to be used, namely as a moderator of Exit and Voice responses. Dowding et al. (2000) also point out that Hirschman fails to account for the possibility that the (affected) entity one is loyal to may be different from the entity responsible for its decline. We operationalize Loyalty in the manner Dowding et al. (pp. 477; 491) recommend and our Loyalty indicators clearly refer to the object of attachment rather than the source responsible for the decline. For these reasons, we hold that our study provides a suitable arena for testing Hirschman's (1970) theory in a domain where it is reasonable to expect its predictions to apply.

RESULTS

Results of hypothesis tests

Table 1 reports the logistic regression results for our Exit analysis. The corresponding DID test is found in Table A2 (Appendix). Four models are presented. Model 1 includes controls and non-hypothesized main effects of moderators. In Models 2-4 we introduce first the GFC main effect and then each of the two Loyalty moderator analyses separately. This is also the set of models we will report in all subsequent, main body text analyses.

Model 2 reveals a negative effect of the GFC on Exit. This is the opposite of H1; rather than increasing the propensity to Exit, the onset of the GFC appears to have reduced it. Evaluated as a non-directional test the effect would be marginally statistically significant at conventional levels of risk ($p = 0.081$; two-tailed). At 0.8 percent the increase in Nagelkerke's R^2 is small but not completely negligible. However, this non-hypothesized result should not be over interpreted. It does not hold up in the DID analysis and it is weaker in each of our robustness tests than it is in Table 1. Hence, it is best regarded a non-effect. Hypothesis 1 is rejected; we do not find evidence that a crisis of the magnitude represented by the GFC in Australia increases the incidence of Exit among nascent entrepreneurs.

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Insert Table 1 about here!

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Model 1 reports significant and negative main effects for both measures of Loyalty, suggesting that Loyalty reduces Exit. This serves to increase our confidence in the validity of these indicators of Loyalty. However, our Loyalty hypothesis (H3) concerns not this main effect, but interaction between GFC and Loyalty. The analyses (Models 3 and 4) show that both interaction terms (GFC x Full time work and GFC x Development stage) are negative as predicted. In the latter case, the effect is statistically significant ($p=0.007$) and the increase in pseudo- R^2 estimates is non-trivial; 1-1.5 percent. Although in this analysis the estimated main effect of the GFC turns positive and significant ($p=0.048$) in Model 4, this cannot be interpreted as support for a direct, positive effect on Exit. Instead, the joint effect of the original variable and the interaction term needs to be evaluated. The interaction effect is illustrated in Figure 1 (top). The GFC significantly increases the negative effect of venture development stage on Exit. Figure

1 (bottom) also shows the 95 percent confidence band for the marginal probability of Exit at different stages of development, conditioned upon the effect of the GFC. The fact that the graph passes through zero suggests that low development ventures are more likely to exit because of the GFC (positive marginal effect), whereas high development ventures are less likely to exit because of the GFC (negative marginal effect). This relationship is statistically significant in areas where the 95 percent confidence band does not include zero. In approximate terms, this means that ventures which have gone past the midway mark for what it normally requires to become an operational business are up to 20 percent less likely to Exit because of the GFC. In all, we get partial support for Hypothesis 3; Exit in response to macroeconomic crisis appears somewhat less likely among founders with a higher degree of Loyalty to their venture.

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Insert Figure 1 about here!
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As regards control variables it may be noted that older age is negatively related to Exit while experienced entrepreneurs appear somewhat more prone to Exit than are novices. We find only weak/uncertain industry effects.

Table 2 displays the results for our first Voice regression. Voice is here represented by increased work effort (H2a). Thus, the dependent variable is increase in work effort (hours) tested against decrease or no change, and hypotheses are tested using negative binomial regression models.

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Insert Table 2 about here!

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Model 6 shows that the estimated effect of the GFC is negative, contrary to expectation. However, evaluated as a non-directional hypothesis the effect is far from statistically significant ($p=0.601$; two-tailed) and the inclusion of the variable does nothing to increase R^2 . The corresponding DID analysis (Table A2) for change in work effort shows neither a significant increase (Voice) nor decrease. Thus, Hypothesis 2a is not supported.

The moderation effects of Loyalty (H4a; Models 7 and 8) are both in the predicted direction. The moderation effect of Full time work is marginally significant ($p=0.070$) and increases R^2 slightly. However, moderation by Development stage is far from being statistically significant or contributing meaningfully to R^2 . Thus, hypothesis 4a gets only weak and partial support.

Table 3 displays the results for our remaining Voice indicators, pertaining to reductions of the Novelty (H2b) and Growth ambition (H2c) of the nascent venture. Both of these indicators are dichotomous, hence logistic regression was applied. Model 9 shows control variable effects suggesting that those initially reporting higher novelty and greater dependence on loan funding, and those working full time on the start-up, report more reductions in novelty. This may relate to problems with market- or technological feasibility of the original concept, and realizing this by working more intensely with its realization. Founder age and education also seems to affect the propensity to reduce the novelty of the venture idea (both negative).

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Insert Table 3 about here!

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Model 10 reports the result for the onset of the GFC. The estimated effect is statistically non-significant and not even in the hypothesized direction. Thus, this analysis lends no support for Hypothesis 2b. Further, both moderation effect estimates (independent tests of H4b; Models 11 and 12) are negative, counter to the hypothesis. In the case of GFC x Full time work the unexpected negative effect is significant, if evaluated as a non-directional test ($p=0.048$; two-tailed). Consequently, this hypothesis does not get any support in the Novelty reduction analysis.

The results lend some support for our theorized reduction of Growth ambition. These results are reported in Models 13-16. To start with the non-hypothesized relationships, in Model 13 we find significant main effects for one of the Loyalty indicators; Full time work ($p=0.048$). One gender control (all male venture) appears to be associated with higher likelihood of reducing Growth ambition ($p=0.051$). This is likely due to low prevalence of Growth ambitions in the first place in the comparison group, which is mixed gender (usually spousal or de facto) teams.

Model 14 demonstrates that the estimated effect of the GFC is practically zero. This means that none of the tests of Voice main effects (increased work effort; reduced novelty; reduced growth ambition) supports Hypothesis 2 (a, b or c). We do not find evidence that nascent entrepreneurs who choose not to Exit instead exercise Voice, e.g., take remedial action, to increase the nascent venture's chances in the changed environment. However, with respect to Growth ambition we do find support for moderation by Loyalty. Models 15 and 16 show that both of the Loyalty moderators, GFC x Full time work ($p=0.011$) and GFC x Development stage ($p=0.049$), have positive effects (as expected) that are statistically significant. In terms of

contribution to R^2 the estimated effects are in the .7 to 2.8 percent range, where the latter must be regarded a substantial increase. Over all, we find support for Hypothesis 4c. Loyalty has a tendency to moderate nascent entrepreneurs' response to macroeconomic crisis in terms of adjusting downward their ambitions for growth, and increasing their work effort. The theorized reason for this is that this increases the probability of getting the venture up and running at all under the new and harsher environmental conditions.

Robustness tests and auxiliary analyses

Extensive robustness tests and auxiliary analyses were performed to support the reliability and interpretation of the results reported¹. First, analyses revealed no selection effects among important variables for W2 non-respondents. Second, there were no differences in control variables between experimental groups, save for those in the pre-GFC group being somewhat older than those post-GFC. This suggests our findings are not the product of selection or assignment bias.

Further, we undertook the following tests to check the robustness of our GFC effects: 1) setting the GFC onset at one month after Lehman Brothers collapse to account for delayed reaction; 2) using the number of 'months in GFC' as continuous indicator (original and squared) to account for gradual and curvilinear effects of time in crisis; 3) running the analyses separately for solo founders to account for level of analysis effects; 4) running analyses separately for manufacturing and constructions firms, and then other firms excluding these two industries, to account for those industries likely to be hardest hit by the GFC; 5) using venture Exit rather than individual Exit, applying a completely different analysis approach using data from all four waves of data collection and time-stamped information about when the exit occurred and not relying on a specific date as the "onset of the GFC", and 6) considering the potential process nature of

¹ Detailed results available from the authors on request.

behavioral responses by viewing neglect (Rusbult, 1988) as a possible precursor of Exit, testing reduced work effort as an alternate outcome. In addition, we considered moderation effects of Novelty in alternate regression models to check whether GFC effects on Exit and Voice were contingent on the high potential nature of the venture. We also undertook analyses using “reaching operational state” (extended period of positive cash flow) as the dependent variable. This is an important supplement for conclusions about nascent ventures’ contribution to observed decline in new business registrations.

The only robustness analysis yielding a statistically significant result was the “months in GFC” analysis suggesting slightly increasing neglect as reduced work effort ($p=0.092$; two tailed) over time. Overall, these analyses do not give reason to alter our main conclusion about limited main effects of the GFC, lending increased validity to our reported main findings.

For those nascent entrepreneurs that exited, data collected on their reasons for terminating the venture reveals some useful information relating to the GFC. Those that report Exit after the GFC suggest that “high profitability looked less likely than previously thought” marginally more than those who exited pre-GFC. The notion that the crisis may restrict alternate opportunities gains some support as those that exit post GFC are less likely to suggest they found “another job or business that looked more promising”.

Some further light is shed by responses to a set of GFC-tailored questions that were asked to all contacted cases in W3, approximately one year after the event. In response to the question “How much did the global financial crisis, which became noticeable in 2008, affect your business in comparison to your expectations for the business during the past year?” over half (57 percent) suggested ‘not at all’ compared to 18 percent who said ‘a lot’. Accordingly, relatively few reported making any changes to their business or future plans as a result of the global

financial crisis (20 percent). The most challenging effect felt by the minority who reported being impacted was ‘slow or lost sales’ (58 percent of eligible cases) followed by the ‘unpredictability of business conditions’ (16 percent). It should be noted that these relatively modest levels are reported despite the full force of hindsight bias and attributional processes that can be expected when individuals are prompted with a specific, possible cause when asked to make sense of events in arrears (Shaver, 2010). By contrast, our main findings stem from unobtrusive comparison of behaviors reported before and after the onset of the GFC, without any reference to that event.

Summary

Table 4 summarizes the results of our Hypothesis tests. The briefest possible commentary of the results is that there is *a startling absence of statistically meaningful support for our main effect hypotheses*. The onset of a macroeconomic crisis does not appear to markedly affect how nascent entrepreneurs act with regard to their emerging ventures.

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Insert Table 4 about here!

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We do find some support that Loyalty reduces Exit and increases Voice, i.e., that in response to a crisis, entrepreneurs who have invested more and reached further in the venture creation process are less likely to abandon the start-up in response to the crisis and instead more likely to try to save it through remedial action. Further, those working full time on their venture, or have developed their venture further are more likely to simplify it by adjusting downward their preference for growth in response to a crisis. Some of these effects are substantial, adding up to

2.8 percent explained variance. However, the overall the support for Loyalty moderation cannot be described as particularly strong.

DISCUSSION

Main results

Our results afford some support to the notion that Loyalty affects the relative likelihood of Exit and Voice responses among nascent entrepreneurs facing a macroeconomic crisis. This lends some support to the applicability for Hirschman's (1970) Exit-Voice Theory in this domain. However, by far the most consistent pattern found in our study is that our hypothesized main effects regarding Exit and Voice were clearly *not* supported by the data, despite the appropriate research setting. In our view, this surprise finding is what makes our study interesting (Davis, 1971) and potentially important. This result suggests that for most nascent entrepreneurs and their on-going start-up efforts the (behavioral) effects of macroeconomic crises are far smaller than what is likely to be commonly believed. For Exit this may be due to the fact that a macroeconomic crisis worsens the prospects also of the other alternatives (employment; other ventures; retirement based on now reduced wealth) available to and/or considered by the individual. A slight change in reported Exit reasons (auxiliary analysis) is aligned with this interpretation. However, decline in other alternatives cannot account for the apparent low incidence of remedial action, i.e., Voice. Prompted self-reports of GFC effects (auxiliary analysis) also point at limited effects, especially as these self-reports are likely to be exaggerated.

If correct, the finding that the effects on nascent entrepreneurs are very limited is important for three major reasons: 1) correct understanding of the phenomenon and the policy implications

that come with such understanding; 2) insights into possible refinements of Exit-Voice Theory and its applicability to nascent entrepreneurship, and 3) insights into how observed resilience of emerging/young/small/independent firms should be interpreted. Below, we will discuss each in turn.

Understanding of the phenomenon and its implications for policy

The lack of support of our main effect hypotheses suggests that the noticeable reduction in business registrations reported by Klapper and Love (2011) arises mainly from processes other than killing off independent start-ups in the making. Over the same time period as our study, registrations in Australia fell by 8 percent (in 2008-9) compared to the preceding years. If termination of ongoing, independent start-up efforts had its fair share of that decrease, the result found in our sample would be extremely unlikely from a statistical point of view. A robustness test found no effect on the propensity to get up and running and our main finding suggested—if anything—a *negative* effect of the GFC on Exit.

Therefore, the observed decline in registrations is likely due to other mechanisms. One candidate is decrease in the formation of new organizational entities by existing firms. This is supported by results suggesting that larger firms are relatively harder hit by crises (Bradley et al., 2011; Davidsson et al., 1999). As regards independent start-ups the effect of a crisis may predominantly be to make prospective entrepreneurs refrain from entering the process, rather than forcing them to exit or to alter their venture idea once they are underway. Known effects of macroeconomic crises on the rate and composition of start-ups suggests the former—refraining from entering a start-up process—may be particularly true for those capable of founding “high potential” ventures (see Section on Prior empirical insights on effects of macroeconomic crises, above). Other research suggests this effect may represent a delay of the entry point rather than

permanently barring prospective entrepreneurs from trying that career (Yu, Orazem, & Jolly, 2009). Similarly, business registrations in Australia not only recovered but surpassed previously recorded levels after the GFC (Australian Bureau of Statistics, 2011).

The lack of effect on Exit and Voice has important implications for policy and public spending. In a time when business start-ups are high on the policy agenda (Shane, 2009) and on-going start-up efforts are increasingly accessible through business incubators and start-up support programs (Thompson, Scott, & Downing, 2012), it is conceivable that policies would be designed to keep start-up efforts alive (without reduced ambition or innovativeness). Our results—which arguably represent the only, systematic evidence on the issue—suggests public spending of that kind would not be justified.

Insights into possible refinements of Exit-Voice Theory and its applicability

Hirschman's (1970) theorizing seems to implicitly assume relative decline of the focal organization. By contrast, our context is one of more or less general decline. When alternatives to the current start-up are also negatively affected, the propensity to respond by Exit should perhaps not be expected to be very strong. Thus, the theory would benefit from absorbing the distinction between absolute and relative decline.

However, this distinction has little bearing on Voice. Hirschman's theorizing suggests we should expect more Voice to result when the Exit option is more or less barred (see, e.g., Hirschman, 1970: 79-81). In contrast, our study found weak or no effects on Voice. In part this may be due to the empirical problem of capturing enough of the relevant manifestations of Voice; in comparison to Exit it is a more multi-faceted and therefore more empirically elusive response. But there is also an underlying, theoretical problem. Hirschman (1970) seems to implicitly assume that all actors, or at least a sufficient proportion of them, will do *something* in

response to dissatisfaction with decline (cf. Burris, Detert, & Chiaburu, 2008: 913). Our results suggest this is not the case with nascent entrepreneurs; the vast majority seems to react very little to the crisis. Dowding et al.'s (2000) observation of generally weak Voice effects suggest this may be the case in many other domains, including some of those Hirschman originally had in mind for his theory. The theory may thus benefit from the inclusion of a non-action alternative that reflects a considered decision to "sit it out".

It may be argued that Rusbuilt's (1988) re-interpretation of Exit-Voice does that by associating Loyalty with non-action. However, simply interpreting non-action as Loyalty is very unsatisfactory from a theoretical point of view. Presumably, non-action may just as well represent any of the (partly overlapping) alternatives "ignorance", "denial", "paralysis", "indecision", "vacillation" or "patient suffering". Therefore, the addition of (a) considered "non-action" alternative(s) to the theory's repertoire of responses seems to require deeper theoretical (and empirical) assessment of the "content" of non-action. In this context, the notion of "threat rigidity" (Staw, Sandelands, & Dutton, 1981) may prove useful. Although the threat rigidity thesis is most commonly applied to (large) organizations (e.g., Barnett & Pratt, 2000; Shimizu, 2007) it was originally conceived as a multi-level phenomenon, and the individual-level mechanisms were outlined already by the originators (Staw et al., 1981). This shows promise for application to a phenomenon such as nascent entrepreneurship. The challenge of predicting and testing a non-response main effect would remain, but journeys into the qualities of the non-response as well as the search for theoretical moderators of the extent of measurable response may benefit from the threat rigidity literature.

Insights into the interpretation of observed vulnerability and resilience

Persistence (Hoang & Gimeno, 2010), resilience (Bullough, Renko, & Myatt, 2014) and tenacity (Baum & Locke, 2004) are labels used for a positive quality often ascribed to (nascent) entrepreneurs and their emerging/new/small/independent ventures. Often this quality is taken as an explanation why they can survive and flourish despite undeniable vulnerability due to obstacles like lacking legitimacy and liabilities of newness and smallness (Aldrich & Auster, 1986; Aldrich & Fiol, 1994; Delmar & Shane, 2004; Freeman, Carroll, & Hannan, 1983).

Empirical results showing relatively smaller adverse effects of crises, compared to large firms, can be taken as support for the resilience thesis (Bradley et al., 2011; Davidsson et al., 1999). Importantly, the resilience is commonly associated with greater flexibility and adaptability of younger and smaller actors. Along those lines, other research has highlighted how business founders can get by under tough circumstances through smart, frugal and highly adaptive strategies and tactics (Baker & Nelson, 2005; Sarasvathy; 2008).

It is therefore imperative to note that adaptability and flexibility do *not* appear to be the main thrust of what we observe in our study. We find no direct evidence that it was creative maneuvering that kept the nascent entrepreneurs in our sample going through the crisis. Rather, our findings suggest that in most cases their particular start-up effort was not much affected by the macroeconomic crisis and that they therefore went on with (emerging) “business as usual” right through it. It is conceivable that the challenge of a macroeconomic crisis is manageable for nascent entrepreneurs because many start-ups efforts are locally anchored and only indirectly affected by global- and national level developments (Julien, 2007). Indeed, in the nascent stage they are not yet fully integrated in the economy at all.

A more negative interpretation of persistence (DeTienne et al., 2008) suggests the absence of main effects may be due to a combination of denial and the fact that *other* alternatives open to the nascent entrepreneurs were also adversely affected by the crisis. This would leave founders “locked in” to no longer so promising-looking venturing attempts. The increase in necessity-based entrepreneurial activity reported from the GEM project (Bosma & Levie, 2010; Kelley, et al., 2011) is in line with this theme. Thus, an alternative interpretation is that many nascent entrepreneurs are adversely affected but choose to simply “sit it out”. However, this does not explain the absence of effects on Voice. Lack of other alternatives should not prevent founders from actively improving their situation. Further, not even when prompted in arrears did a majority of nascent entrepreneurs report adverse effects of the GFC.

In all, although there are many examples of impressive ingenuity and flexible adaptation in venture creation processes, one should not assume that this must generally be the reason why they make it through a crisis seemingly unscathed. The prevalent absence of response to macroeconomic crisis does not necessarily mean the nascent ventures are not vulnerable, and their ability to avoid termination does not necessarily reflect the creative form of resilience.

Alternative interpretations of our main results

The seemingly limited effects of the GFC on our sample of nascent entrepreneurs were not theoretically expected. In addition, they seem to run counter to what one would infer from effects on start-up rates and the exit of established small firms (Bradley et al., 2011; Klapper & Love, 2011). This calls for a thorough discussion of alternative explanations of the observed, empirical patterns. Apart from our main interpretation—that effects truly were very limited—we see two possible reasons for the relative lack of support for our main effect hypotheses: 1)

methodological limitations and 2) counterbalancing effects. Below we elaborate on each of these alternatives.

Methodological limitations. There are three primary candidates for the weak relationships being driven by method factors: a) measurement error in the dependent variables; b) measurement error in the independent or moderator (explanatory) variables, and c) insufficient statistical power (Cohen, 1988). Two validity issues relate to our Exit variable: a) does it truly represent Exit, and, if so, b) does it represent Exit in response to the GFC? Poor validity in the first sense is unlikely due to its factual nature, and the significant main effects of our Loyalty indicators on Exit support the validity of the measures. The issue of exit time is a far more pertinent issue. Not only is it possible that exits reported post-GFC actually pre-dated the Lehman Brothers collapse; it is also possible that exits triggered by the downturn occur with such long lag that they are not captured within the interview period. However, we did not find strong evidence of neglect as precursor of Exit (from robustness tests). Further, and more importantly, a range of robustness tests including one using time-stamped venture exit data also failed to find any association between the GFC and Exit. This makes us confident that measurement error does not explain our lack of direct effect of the GFC on Exit.

In addition to their significant direct effects on Exit our Loyalty indicators get further backing through partial support for moderation by Loyalty. With regard to Voice measured as change in work effort, this is again information of a factual nature, unlikely to be prone to large or systematic measurement error. All three Voice variables reflect rather straightforward behavioral facts and intentions rather than, e.g., complex psychological constructs that are particularly hard to measure. Reductions of novelty were confirmed through direct questions following unobtrusive assessment of reported decrease in novelty. Growth ambition was

captured in a way that has been used extensively in the Global Entrepreneurship Monitor (GEM) as well as the Panel Study of Entrepreneurial Dynamics (PSED) and its counterpart studies (Bosma & Levie, 2009; Davidsson & Gordon, 2012). Although the dichotomous nature of these indicators is a limitation, the continuous alternatives used in the DID analysis (Appendix) did not yield more support for the hypothesized relationships. In addition, weak effect on Voice is something our study shares with many others (Dowding et al., 2000). For the above reasons, we do not believe measurement problems pertaining to the dependent variables to be a main driver of our estimated non-effects of the onset of the GFC.

Measurement of the independent variable in our case coincides with the strength of the experimental manipulation. The onset of the GFC in Australia was no doubt a relatively sudden and dramatic event in comparison to normal business cycle swings (see Section on The empirical setting: the GFC in Australia, above). Hence, should the non-support for our main support hypotheses somehow be context-specific (cf. Welter, 2011) it is not because the downturn was less dramatic than elsewhere during our measurement period. Further, although it is unrealistic to assume that the effects would set in to the full from one day to the next, several robustness tests allowing other patterns over time also fail to support for our main effect hypotheses.

A possibly more important concern is that close examination of the development of the indicators (cf. Section on The empirical setting: the GFC in Australia, above) suggests that the economy had already started to turn down—albeit much more mildly—in the months preceding Lehman Brothers’ bankruptcy. Further, although the indicators stayed at low levels in absolute terms they started to turn up again during our “GFC interview period”. Thus, to the extent that turning points and current trend direction are as or even more important than absolute levels, this means that the difference between what our pre- and post-GFC respondents perceived in their

environment was not as clearly “better” and “worse” as what would have been ideal for testing our hypotheses. If our “pre-GFC” cases were as affected by economic downturn as our “post-GFC” cases, then one would expect the former group’s estimated 5-year survival chances for other start-ups to go down from W1 to W2, and to do so just as much as this estimate is downward adjusted among “post-GFC” cases. Our manipulation check shows this is not the case. The “pre-GFC” group does not adjust their estimate downwards while the post-GFC cases do so, if only to a moderate extent. The difference between the groups is statistically significant (see last row in our DID analysis, Appendix Table A2). This result is exactly in line with only “post-GFC” cases being affected by the macroeconomic crisis at the time of the W2 interview, and that while they noticed the environmental change they did not see it as a major hurdle for business start-ups.

As regards statistical power the critical parameters are effect size and sample size. Our sample size—314 to 493 cases depending on which analysis—is neither particularly small nor particularly large in comparison to other survey research. The question is whether it is sufficient to secure statistical significance for true effects of a magnitude that is realistic to expect under the circumstances? Looking at evidence like that presented by Klapper and Love (2011) or the Australian Bureau of Statistics (2011) the effects of the GFC on registrations appear clear enough in the aggregate. However, an alternative way of reading the aggregate figures is that 75-95 percent of the business population was largely unaffected by the crisis. If that is the case it may be unrealistic to believe that all true and important aggregate effects would be captured in a sample the size of ours.

As a case in point, if the interaction effect in Figure 1 is true it suggests a difference in Exit probability of up to approximately 20 percentage points for firms with over 10 gestation

activities completed. There may be many practically significant (Kirk, 1996) GFC effects that are smaller than this, which do not reach statistical significance in a sample the size of ours. However, this explanation for weak support for our hypotheses carries little weight in those (frequent) cases where the estimated effect is not even in the expected direction. In all, although method factors may undoubtedly have played a role in our main effect hypotheses being largely unsupported, we find it highly unlikely that true effects of a meaningful magnitude occurred in the real economy and that shortcomings of our methods are solely responsible for our main effect hypotheses being rejected.

Counterbalancing effects. We already considered counterbalancing effects in our use of Exit-Voice Theory as well as by including decreased work effort as indicator of neglect in our robustness tests and increased work effort as an indicator of Voice. As regards Voice one can perhaps not exclude the possibility that some committed founders think they need to aim higher when the going gets tougher, although there is no evidence that this would increase their chances of taking their venture to an operational stage. If such a tendency were more pronounced among highly committed founders it would also dilute results pertaining to Loyalty moderation. Thus, counterbalancing effects may also have contributed to limited support for our moderation hypotheses.

All in all, counterbalancing effects seem to be a possible part of the explanation for not obtaining the expected effect for some of our hypotheses. However, in our view the suggested counterbalancing effects do not seem to hold up as a convincing general explanation for limited support for the predicted main effects of the crisis.

Summing up, in the light of our results—including all robustness tests and auxiliary analysis—we feel confident that our findings give a fair image of the actual response of nascent

entrepreneurs to macroeconomic crisis, namely that for the most part they do not do much at all in response to it. This may be seen as admirable persistence, but does not in the main seem to reflect the flexibility and adaptability commonly attributed to business founders and their emerging ventures.

CONCLUSION

In this paper we used the onset of the GFC in the middle of an on-going, longitudinal study as a natural experiment in order to investigate the effects of a major economic downturn on the development of nascent ventures. Drawing on Exit-Voice Theory, we hypothesized increased propensity to Exit or—alternatively—increase in work effort and other means of remedial action (Voice), expecting both responses to be moderated by Loyalty.

Overall, we found very limited support for our main effect hypotheses. Prior research suggests crises lead to a reduction in start-up numbers, or at least to changes in the composition of the start-up population. Our results suggest that the mechanism behind this is not primarily termination or change of on-going start-up efforts. Rather, to the extent that independent start-ups account for part of the observed reductions in new business registration the mechanism is likely to be that potential founders (temporarily) refrain from initiating a start-up attempt at all.

We have thoroughly discussed the possible reasons why nascent entrepreneurs appear not to terminate or modify their venture in response to a macroeconomic crisis. Although method factors and counterbalancing forces may have played a role in concealing or diluting the effects, our interpretation is that the results reflect that the large majority of nascent ventures really are not strongly affected (behaviorally) by a macroeconomic crisis. Presumably, they are much more affected by a relatively narrow, immediate task environment than directly by the fluctuations of the macro-economy.

As emerging firms and their founders were not one of the original domains claimed for Exit-Voice Theory, the limited effects of the GFC recorded in our study should not be regarded as evidence against its validity in other domains. This said, our findings and interpretations gave reason to suggest refinement of the theory, which may give it more predictive power both with respect to nascent entrepreneurship and within other domains of human behavior.

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Table 1: Logistic regression analyses of the effect of the GFC on Exit.

Independent variables	Exit			
	Model 1	Model 2	Model 3	Model 4
Constant	1.760**	2.128**	2.113**	1.343†
All male venture	0.282	0.293	0.294	0.273
All female venture	0.181	0.204	0.205	0.151
Age oldest owner	-0.020*	-0.022*	-0.022*	-0.022*
Retail	0.044	0.008	0.015	0.008
Consumer services	-0.215	-0.248	-0.247	-0.248
Health and social services	-0.457	-0.495	-0.502	-0.505
Manufacturing	-0.285	-0.263	-0.259	-0.221
Construction	-0.356	-0.353	-0.344	-0.336
Agriculture	-0.698	-0.69	-0.693	-0.776
Business consulting	-0.044	-0.108	-0.106	-0.163
Novelty	0.004	0.006	0.006	0.002
Major loan funding	0.138	0.144	0.131	0.143
University degree	0.15	0.143	0.143	0.157
Prior start-ups	0.471*	0.455†	0.451†	0.445†
Solo venture	-0.521	-0.563†	-0.568†	-0.529
Loyalty - Full time work	-0.581*	-0.555*	-0.419	-0.589*
Loyalty - Initial dev. stage	-0.084***	-0.085***	-0.086***	-0.036
Post- vs. pre-GFC		-0.376	-0.319	1.001*
		(0.216)	(0.251)	(0.600)
GFC x Full time work			-0.212	
			(0.476)	
GFC x Development				-0.083**
				(0.034)
n	493			
Model X²	63.360***	66.399***	66.596***	72.452***
Log likelihood	-282.582	-281.062	-280.963	-278.036
Cox & Snell R²	0.121	0.126	0.126	0.137
Nagelkerke R²	0.167	0.175	0.175	0.190
ModelΔ X²		3.039†	0.197	6.053*

Note: Logistic regression parameters expressed as unstandardized coefficients, with standard error for variables with hypothesized influence in parentheses; † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001; one-tailed statistical significance for hypothesized directional effects and two-tailed otherwise.

Table 2: Negative binomial regression analyses of the effect of the GFC on Voice as increased work effort.

Independent variables	Voice - Increased work effort			
	Model 5	Model 6	Model 7	Model 8
Constant	2.249*	2.418*	2.611*	2.600*
All male venture	-0.413	-0.496	-0.451	-0.481
All female venture	-0.418	-0.419	-0.246	-0.392
Age oldest owner	0.016	0.016	0.017	0.017
Retail	-0.156	-0.244	-0.382	-0.249
Consumer services	0.000	-0.045	-0.133	-0.077
Health and social services	0.356	0.274	0.264	0.26
Manufacturing	-1.271†	-1.299*	-1.402*	-1.333*
Construction	-1.391	-1.482†	-1.345	-1.421
Agriculture	-0.713	-0.803	-0.698	-0.812
Business consulting	-0.114	-0.208	-0.326	-0.212
Novelty	-0.088	-0.084	-0.084	-0.078
Major loan funding	0.214	0.249	0.234	0.256
University degree	-0.176	-0.148	-0.239	-0.16
Prior start-ups	0.375	0.316	0.248	0.326
Solo venture	-0.627	-0.634	-0.684	-0.623
Loyalty - Full time work	-0.328	-0.323	-1.004	-0.317
Loyalty - Initial dev. stage	0.009	0.012	0.016	-0.002
Post- vs. pre-GFC		-0.199	-0.608	-0.565
		(0.380)	(0.485)	(1.178)
GFC x Full time work			1.004†	
			(0.739)	
GFC x Development				0.020
				(0.059)
n	330			
Model X²	20.874	21.151	22.934	21.259
Log likelihood	-776.611	-776.473	-775.581	-776.418
Cox & Snell R²	0.061	0.062	0.067	0.062
Nagelkerke R²	0.062	0.063	0.068	0.063
ModelΔ X²		0.277	1.783	0.108

Note: Negative binomial regression parameters expressed as unstandardized coefficients, with standard error for variables with hypothesized influence in parentheses; † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001; one-tailed statistical significance for hypothesized directional effects and two-tailed otherwise.

Table 3: Logistic regression analyses of the effect of the GFC on Voice as venture simplification.

Independent variables	Voice - Reduced novelty					Voice - Reduced growth			
	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16	
Constant	-1.666†	-1.327	-1.871†	-1.57	-1.556	-1.592	-1.223	-0.606	
All male venture	0.331	0.313	0.312	0.305	0.937†	0.936†	0.940†	0.934†	
All female venture	0.47	0.466	0.495	0.458	0.988	0.985	1.027†	1.006	
Age oldest owner	-0.029†	-0.031*	-0.034*	-0.031*	-0.022	-0.022	-0.021	-0.021	
Retail	0.047	0.029	0.128	0.029	-0.461	-0.458	-0.558	-0.442	
Consumer services	0.416	0.395	0.42	0.39	-0.128	-0.123	-0.161	-0.109	
Health and social services	0.59	0.561	0.552	0.577	0.409	0.415	0.436	0.373	
Manufacturing	0.439	0.501	0.636	0.508	-0.247	-0.252	-0.34	-0.275	
Construction	-0.092	-0.068	-0.022	-0.08	0.453	0.451	0.426	0.469	
Agriculture	0.368	0.374	0.441	0.358	-1.343	-1.339	-1.25	-1.186	
Business consulting	-0.157	-0.23	-0.227	-0.256	-1.985†	-1.975†	-1.986†	-1.856†	
Novelty	0.208**	0.208**	0.216**	0.207**	0.008	0.008	0.017	0.014	
Major loan funding	0.708†	0.703†	0.661	0.701†	-0.611	-0.608	-0.464	-0.571	
University degree	-0.810†	-0.818*	-0.837*	-0.814*	0.356	0.356	0.367	0.294	
Prior start-ups	0.412	0.383	0.344	0.382	0.353	0.354	0.387	0.353	
Solo venture	-0.372	-0.393	-0.444	-0.385	-0.349	-0.345	-0.277	-0.346	
Loyalty - Full time work	1.185**	1.195**	2.176***	1.194**	0.738*	0.737*	-0.393	0.722†	
Loyalty - Initial dev. stage	-0.039	-0.038	-0.036	-0.024	-0.005	-0.006	-0.01	-0.065	
Post- vs. pre-GFC		-0.357	0.58	0.052		0.042	-0.762	-1.563	
		(0.349)	(0.616)	(1.082)		(0.354)	(0.489)	(1.017)	
GFC x Full time work			-1.509				1.714*		
			(0.762)				(0.742)		
GFC x Development				-0.021				0.088*	
				(0.052)				(0.053)	
n	337				337				
Model X²	39.256**	40.294**	44.502***	40.455**	26.104†	26.118†	31.778*	28.974†	
Log likelihood	-123.603	-123.084	-120.980	-123.004	-126.684	-126.677	-123.847	-125.249	
Cox & Snell R²	0.110	0.113	0.124	0.113	0.075	0.075	0.090	0.082	
Nagelkerke R²	0.192	0.197	0.216	0.198	0.132	0.132	0.160	0.146	
ModelΔ X²		1.038	4.209*	0.161		0.014	5.660*	2.856†	

Note: Logistic regression parameters expressed as unstandardized coefficients, with standard error for variables with hypothesized influence in parentheses; † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001; one-tailed statistical significance for hypothesized directional effects and two-tailed otherwise.

Table4: Summary of results of hypothesis tests

Hypothesis tests		Outcome
Exit		
H1:	GFC +→ Exit	Rejected
Voice		
H2a:	GFC +→ Voice as increased work effort	Rejected
H2b:	GFC +→ Voice as venture simplification by reduced Novelty	Rejected
H2c:	GFC +→ Voice as venture simplification by reduced Growth ambition	Rejected
Loyalty moderation		
H3:	GFC x Loyalty as Full time work – → Exit	Rejected
	GFC x Loyalty as Development stage – → Exit	Supported
H4a:	GFC x Loyalty as Full time work + → Voice as increased work effort	Marginal support
	GFC x Loyalty as Development stage + → Voice as increased work effort	Rejected
H4b:	GFC x Loyalty as Full time work + → Voice as reduced Novelty	Rejected
	GFC x Loyalty as Development stage + → Voice as reduced Novelty	Rejected
H4c:	GFC x Loyalty as Full time work + → Voice as reduced Growth ambition	Supported
	GFC x Loyalty as Development stage + → Voice as reduced Growth ambition	Supported

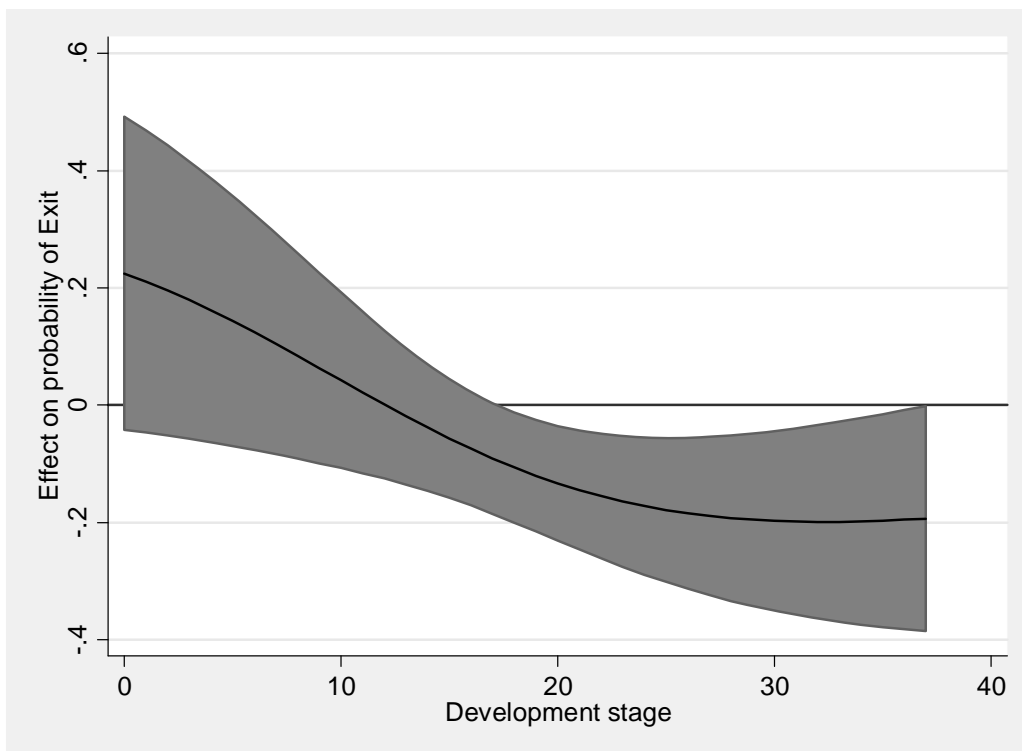
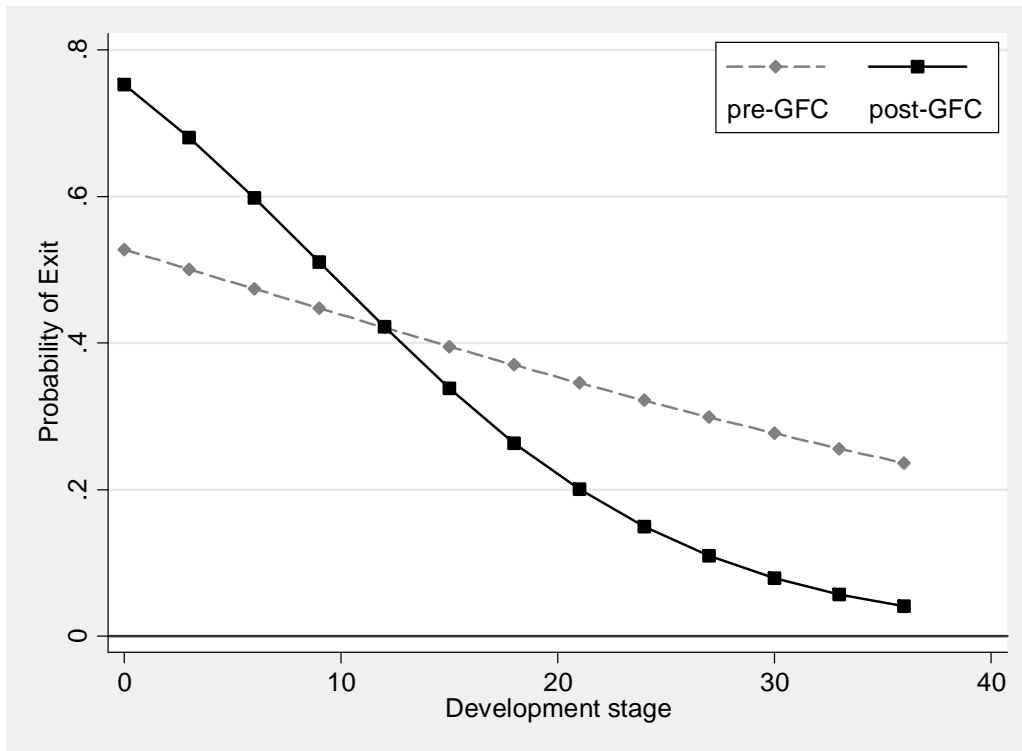


Figure 1: GFC x Venture development interaction on exit – Stage of development interaction plot (top) and conditional marginal effects of GFC with 95% CI plot (bottom).

Appendix

Table A1: Descriptive statistics and correlations.

Variables	N	Min	Max	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	
1 All male venture	493	0	1	0.37	0.481														
2 All female venture	493	0	1	0.28	0.45-0.48*	1													
3 Age oldest	493	20	87	47.07	12.10-0.01	-0.05	1												
4 Retail	493	0	1	0.17	0.38-0.13*	0.09*	-0.15*	1											
5 Consumer services	493	0	1	0.13	0.34-0.06	0.05	-0.02	-0.18*	1										
6 Health and social	493	0	1	0.13	0.34-0.07	0.21*	0.03	-0.18*	-0.15*	1									
7 Manufacturing	493	0	1	0.09	0.29-0.14*	-0.12*	0.11*	-0.14*	-0.12*	-0.12*	1								
8 Construction	493	0	1	0.06	0.23-0.03	-0.15*	-0.07	-0.11*	-0.09*	-0.10*	-0.08	1							
9 Agriculture	493	0	1	0.06	0.24-0.00	-0.08	0.14*	-0.11*	-0.10*	-0.10*	-0.08	-0.06	1						
10 Business cons.	493	0	1	0.10	0.29-0.02	0.09	-0.02	-0.15*	-0.13*	-0.13*	-0.10*	-0.08	-0.08	1					
11 Novelty	493	0	12	3.85	2.46-0.04	-0.02	-0.11*	-0.02	0.02	0.00	0.03	0.01	-0.07	-0.05	1				
12 Major loan	493	0	1	0.20	0.40-0.04	-0.07	0.00	-0.01	0.01	0.02	-0.05	0.03	0.11*	-0.09*	-0.08	1			
13 Uni. degree	493	0	1	0.36	0.48-0.02	-0.22*	0.13*	-0.03	-0.09	0.01	0.02	-0.04	-0.01	-0.01	-0.03	-0.03	1		
14 Prior start-ups	493	0	1	0.59	0.49-0.04	-0.20*	0.28*	0.02	-0.12*	-0.05	0.07	0.03	0.12*	-0.05	0.08	0.04	0.12*		
15 Solo venture	493	0	1	0.50	0.50-0.28*	0.47*	-0.10*	-0.03	0.13*	0.10*	0.03	-0.16*	-0.10*	0.08	-0.04	-0.11*	-0.40*		
16 Loyalty - Full time	493	0	1	0.37	0.48-0.07	-0.13*	0.02	-0.01	0.00	0.04	-0.05	0.05	0.08	-0.02	0.12*	0.21*	-0.01		
17 Loyalty - Dev. stage	493	3	37	17.78	6.79-0.02	-0.10*	0.04	-0.05	0.00	0.05	-0.08	0.01	0.09	0.06	0.12*	0.30*	0.04		
18 Post- vs. pre-GFC	493	0	1	0.63	0.48-0.01	-0.04	-0.12*	-0.02	-0.02	-0.05	0.06	0.06	-0.01	-0.08	0.04	0.03	-0.01		
19 Exit	493	0	1	0.33	0.47-0.01	-0.03	-0.08	0.07	-0.03	-0.07	0.00	-0.01	-0.07	-0.01	-0.01	-0.07	0.06		
20 Voice - Inc. work	330	0	685	10.74	41.20-0.06	-0.06	0.12*	-0.01	-0.02	0.03	-0.05	-0.04	0.03	-0.02	-0.07	0.00	0.07		
21 Voice - Dec. novelty	337	0	1	0.15	0.36-0.03	-0.01	-0.10	0.00	0.03	0.06	-0.01	0.01	0.02	-0.06	0.19*	0.11	-0.12*		
22 Voice - Dec. growth	337	0	1	0.15	0.35-0.08	0.00	-0.06	-0.04	0.01	0.11*	0.00	0.05	-0.08	-0.11	0.06	-0.06	0.05		

Variables	14	15	16	17	18	19	20	21
15 Solo venture	-0.24*	1						
16 Loyalty - Full time	0.10*	-0.07	1					
17 Loyalty - Dev. stage	0.15*	-0.11*	0.48*	1				
18 Post- vs. pre-GFC	-0.05	-0.07	0.05	0.00	1			
19 Exit	0.04	-0.08	-0.21*	-0.27*	-0.07	1		
20 Voice - Inc. work	0.07	-0.12*	0.03	-0.01	0.01	-0.02	1	
21 Voice - Dec. novelty	0.04	0.00	0.20*	0.06	-0.03	0.00	-0.03	1
22 Voice - Dec. growth	0.03	0.00	0.10	0.01	0.03	-0.04	0.11*	0.11*

Note: * p < 0.05; all statistical significance are two-tailed

Table A2: Natural experiment statistics and Difference-in-Differences analysis of GFC effects on all dependent variables.

Dependent variables	Baseline (W1)			Follow-up (W2)			Difference in differences			
	Ctrl. (pre-GFC)	Treat. (post-GFC)	Diff. (W1)	Ctrl. (pre-GFC)	Treat. (post-GFC)	Diff. (W2)	Indep. only	R ² (p)	Covariates incl.	R ² (p)
Team size	1.928	2.010	0.081	1.144	1.513	0.369	0.288	0.018	0.288	0.166
n=986	[0.181]	[0.138]	[0.228]	[0.181]	[0.138]	[0.228]	[0.322]	(0.186)	[0.299]	(0.168)
Work effort	29.455	40.728	11.273	30.271	37.780	7.509	-3.764	0.009	-3.893	0.102
n=666	[4.414]	[3.327]	[5.527]	[4.469]	[3.319]	[5.567]	[7.844]	(0.316)	[7.549]	(0.303)
Novelty	3.736	3.968	0.232	3.208	3.329	0.120	-0.112	0.016	-0.113	0.075
n=667	[0.227]	[0.170]	[0.283]	[0.228]	[0.172]	[0.285]	[0.402]	(0.391)	[0.394]	(0.388)
Growth	49.574	26.272	-23.302	3.769	35.310	31.541	54.843	0.002	45.523	0.047
n=563	[24.452]	[18.270]	[30.523]	[41.988]	[18.404]	[45.845]	[55.076]	(0.160)	[55.079]	(0.205)
Others' 5y survival probability	36.500	39.498	2.998	38.378	36.209	-2.169	-5.167	0.005†	-4.877	0.081†
n=655	[1.904]	[1.423]	[2.377]	[1.912]	[1.472]	[2.413]	[3.387]	(0.064)	[3.291]	(0.070)

Note: Mean values for dependent variables are reported by experimental group and sampling wave, with standard errors in brackets []; Baseline sample corresponds with CAUSEE wave one (W1), follow-up sample corresponds with CAUSEE wave two (W2). Reported number of cases is double the number of ventures because two waves of data are used. Natural experimental group is defined by wave two interview timing post-GFC (Treatment group) versus pre-GFC (Control group). “Diff.” reports differences in means within wave; Difference in differences reports average treatment effect for a model with the dependent variable only, as well as for a model which includes covariates (as in regression analyses); R² reports explained variance, with one-tailed statistical significance in parentheses (p); † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001.