Much Ado About Nothing? The Surprising Persistence of Nascent Entrepreneurs Through Macroeconomic Crisis

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We hypothesize that a major macroeconomic crisis triggers four alternative responses among nascent entrepreneurs: *disengagement*, *delay*, *compensation*, and *adaptation*. We also suggest that commitment and ambition (or "high potential") moderate these responses. Our most important finding is the relative *absence* of behavioral crisis responses. However, crises may make high-tech founders become more likely to disengage, whereas the opposite holds for founders far into the process. Our study sheds light on the mechanisms behind aggregate effects of crises on the number and type of start-ups in an economy, and can guide future research on the effect of crises on nascent entrepreneurship.

Introduction

Extant literature gives a fair idea of how an external shock like the global financial crisis (GFC) affects the number and composition of business start-ups in an economy. However, evidence is lacking on how nascent entrepreneurs—i.e., individuals who are currently actively involved in a not-yet-up-and-running start-up (Davidsson & Gordon, 2012; Reynolds, 2009)—and their emerging ventures are affected by a macroeconomic crisis. Such research is needed for a better understanding of how aggregate changes in the start-up activity result from (1) selection *into* the start-up process (i.e., what types of individuals attempt what types of start-ups), (2) temporary or permanent selection *out of* that process (i.e., what types of individuals with what types of start-ups give up or delay the process), and (3) adaptation of the venture in response to the crisis.

It is particularly important to know whether ongoing start-ups terminate at a higher than normal rate and/or become less innovative and growth-oriented because of the crisis. If so, policies to keep start-up efforts going (unchanged) may be justified on similar grounds as handouts to consumers (Wanna, 2009) or tax adjustments to help small

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businesses survive (e.g., Smallbone, Deakins, Battisti, & Kitching, 2012). If nascent ventures go essentially unscathed and unchanged through the crisis, such expenditure of public funds would not be warranted.

We use two-wave panel data to investigate the effects of a sharp economic downturn on nascent entrepreneurs and their ventures. Similar-sized subsamples were followed up prior to and after the onset of the GFC, creating a natural experiment. This makes it possible to distinguish genuine effects of the GFC from other influences. To develop our hypotheses, we draw on theoretical arguments pertaining to the crisis' effect on *perceived environmental uncertainty*, *opportunity confidence*, and *other options*. We also build on empirical work on how macroeconomic crises and unemployment affect business start-up activity.

Our study makes the following contributions. First, we develop a typology of nascent entrepreneurs' and ventures' alternative responses to crises, which can be useful for further theorizing and empirical testing of reactions to crises. Second, we provide previously missing, policy-informing evidence on how nascent entrepreneurs react to a major, macroeconomic crisis. Third, our findings inform theorizing and debate on the "vulnerability" vs. "resilience" views on small and early-stage business ventures.

Prior Empirical Insights Into Aggregate Effects of Macroeconomic Crises on Business Start-Ups

Albeit a subtype of environmental jolts or shocks (e.g., Sine & David, 2003), macroeconomic crisis is also a phenomenon that in its own right is more frequent than commonly believed (Reinhard & Rogoff, 2010). Importantly, unlike more localized shocks that have an undeniable negative impact on specific industries, regions, and firms, macroeconomic crises may or may not 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. The first addresses business cycle downturns, whereas the other focuses more narrowly on the effects of high unemployment.

At first glance, both literatures give a mixed picture. A recent study of the effects of the GFC suggests that business registrations fell in most countries (Klapper & Love, 2011). Similarly, studying an earlier crisis, 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) reveal no sharp or general decline in response to the GFC as regards the proportion of the adult population engaging in nascent ventures (Bosma & Levie, 2010; Kelley, Bosma, & Amoros, 2011). Studying Thailand's financial crisis in the late 1990s, Paulson and Townsend (2005) even found that the proportion of households operating a business *increased* sharply 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, while the latter is typically attributed to greater flexibility and adaptability (Pal, Torstensson, & Mattila, 2014; 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 and small firms (Cefis & Marsili, 2005). However, in line with the resilience thesis, such firms appear less negatively affected by a macroeconomic crisis (Bradley, Aldrich, Shepherd, & Wiklund, 2011;

Davidsson et al., 1999). Further, evidence from the United States and Sweden shows that the survival of start-ups does not vary markedly over the business cycle (Headd & Kirchhoff, 2009; Institutet för Tillväxtpolitiska Studier, 2003). Recent research also suggests that small firms affected adversely by the GFC bounced back quickly (Cowling et al., 2014).

The literature on unemployment and new firm formation is equally mixed. 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). This research also points to a solution to the conundrum. High levels of unemployment reflect poor demand conditions as well as restricted access to external funding, which should reduce new firm formation. At the same time, higher unemployment means that more people have reason to find alternative income. In a generally depressed labor market, this would stimulate higher numbers of business start-ups, especially of the income-substitution type.

This suggests that the total number of start-ups may turn in either direction as a result of a macroeconomic crisis. However, the types of individuals and 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 work experience (Grilli, 2011). In their demonstration of negative effects of the GFC, Klapper and Love (2011) include only limited liability companies, thus excluding large numbers of simpler businesses. Similarly, Davidsson et al. (1999) focused on the collective job contribution of start-ups, finding the marked decline that is to be expected when the proportion of higher ambition start-ups drops. While reporting an increase in total numbers, Paulson and Townsend (2005) also provide direct evidence of the crisis stimulating simple start-ups with very low initial investment. Similarly, the GEM data show that the GFC was associated with a downturn in perceptions of opportunity and an increase in the proportion of necessity-based start-ups (Kelley et al., 2011). Further, reductions in sales growth were more pronounced in businesses with founders having high 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 extent to which increased termination or delay of nascent ventures contribute to this aggregate effect, as well as whether the crisis makes nascent entrepreneurs alter their emerging ventures in such ways that a lower quality cohort results.

Hypothesis Development

Main Effect Hypotheses

As no established theory or literature deals specifically with how nascent entrepreneurs react to the onset of a major economic crisis, we draw on related arguments and findings from a variety of sources within and outside the nascent entrepreneurship research stream. Underlying our argument are the notions of *perceived environmental uncertainty* (Liao & Gartner, 2006) and *opportunity confidence* (Dimov, 2010) while keeping in mind the effect of the crisis on *other options* available to the nascent entrepreneur (Gimeno, Folta, Cooper, & Woo, 1997).

Dimov (2010) introduced the notion of *opportunity confidence*—the nascent entrepreneurs' degree of conviction that successfully exploiting the venture idea they are pursuing is feasible—as a mediator of effects of human capital and planning on venture emergence. The notion that entrepreneurship requires human agency (Shane, 2003) suggests that high opportunity confidence is likely to be needed for a whole range of micro-level factors to influence the outcome of start-up efforts. It is, arguably, the conviction that the venture idea pursued truly represents an opportunity that makes nascent entrepreneurs marshal the resources that are available to them toward the goal of creating a new business.

A plausible assumption is that the onset of a macroeconomic crisis would lead to a negative shift in *perceived environmental uncertainty*, formally represented as an outcome distribution with a lower mean and greater variance (cf. McMullen & Shepherd, 2006). There are several examples in the entrepreneurship literature of perceived uncertainty (Patel & Fiet, 2009) or environmental indicators implying such uncertainty (e.g., increasing unemployment in Rotefoss & Kolvereid, 2005; environmental dynamism in Edelman & Yli-Renko, 2010) affecting the progress and outcomes of the venture-creation process. There are also suggestions that what we call opportunity confidence mediates such relationships (Edelman & Yli-Renko).

We theorize that decrease in opportunity confidence can result in four responses: (1) *disengagement* if the decrease in opportunity confidence makes other options relatively more attractive, (2) *delay* if the uncertainty of other options also increases sufficiently to make a choice difficult, (3) *compensation* in the form of increased resource inputs to restore opportunity confidence, or (4) *adaptation* to make the venture idea more feasible under the new circumstances.

In line with the vulnerability argument, liabilities of smallness and newness (Aldrich & Auster, 1986; Freeman, Carroll, & Hannan, 1983) would make nascent entrepreneurs likely to disengage in response to a crisis. This is so because of limited internal resources to mitigate the crisis' consequences, a narrow (potential) customer base, reliance on a single product/service line increasing the risk of a fatal setback, and weak bargaining power in relation to resource providers. The disengagement response would be particularly likely for founders whose opportunity confidence falls below some critical threshold (Gimeno et al., 1997). While individual thresholds are unknown, we theorize that in a population of nascent entrepreneurs facing a macroeconomic crisis, there would be a sufficiently large number for whom the critical limit is no longer met. In line with this reasoning, Bradley et al. (2011) found that established independent businesses increased their exit propensity by 62% in response to a financial crisis, while Pal et al. (2014) report a doubling of bankruptcies in the textile and clothing industry during the GFC. In accordance with this type of theoretical assumption and prior empirical findings, our first hypothesis is:

Hypothesis 1: The onset of a major macroeconomic crisis makes nascent entrepreneurs more likely to disengage from the venture creation attempt.

The disengagement response is contingent on other options not being equally affected by the crisis. This may not be case. Employment prospects and alternative venturing options are also subject to increased uncertainty. Retirement from the workforce would be based on wealth that has likely been reduced by the crisis. The perceived value of education and/or the willingness and ability to pay for it would also be negatively affected. Therefore, for many nascent entrepreneurs, it would not be clear that disengagement is better than the alternatives, even if their absolute level of opportunity confidence has decreased.

The real options framework offers a theoretical perspective that highlights the value of future decision rights (McGrath, Ferrier, & Mendelow, 2004). From this viewpoint, it may make sense to wait and see rather than to disengage prematurely. Nascent entrepreneurs can reasonably expect the increased uncertainty to eventually subside, so that they can regain confidence in their venture idea or achieve relative certainty that some other option has now become superior (Parker & Belghitar, 2006). In line with this reasoning, prior research has demonstrated that perceived environmental uncertainty is positively, and environmental dynamism negatively, associated with nascent entrepreneurs' subsequent rate of completion of start-up activities (Edelman & Yli-Renko, 2010; Patel & Fiet, 2009). Past results suggest that activity should be the highest toward the end of the process (Lichtenstein, Carter, Dooley, & Gartner, 2007). As the middle of the crisis may not be the ideal time to convert one's idea into a fully operational business, our second hypothesis is:

Hypothesis 2: The onset of a major macroeconomic crisis makes continuing nascent entrepreneurs delay the progress of the venture-creation attempt.

Our first two hypotheses implicitly assume inert actors who are selected out if they are not apt for success in the prevailing environment (cf. Jovanovic, 1982). Expecting nascent entrepreneurs to disengage or wait and see is also in line with the vulnerability theme (Smallbone et al., 2012). Our remaining main effect hypotheses will apply the more optimistic view that actors can control their fate through strategic choice and action (Wiltbank, Dew, Read, & Sarasvathy, 2006).

One obvious response nascent entrepreneurs might consider is to compensate for the negative influence of the crisis on opportunity confidence by increasing the resources they put into the venture. "Sweat equity" being a primary resource, they may simply choose to work harder. The instrumentality of such action is supported by prior reports of a positive effect of work effort on making the nascent venture reach an operational state (Van Gelderen, Thurik, & Bosma, 2005). Accordingly:

Hypothesis 3: The onset of a major macroeconomic crisis makes continuing nascent entrepreneurs compensate detrimental crisis effects by working harder to bring the venture-creation attempt to completion.

Hypothesis 3 may seem to run counter to hypothesis 2 as delay would likely be reflected in a reduction of current work effort. However, an appropriate design of the empirical test will allow both hypotheses to be supported if the two effects pertain to different parts of the overall population.

Changing the venture idea could also increase its success potential in the new environment, thereby restoring opportunity confidence. The literature provides reason for a more precise hypothesis, namely that the changes would likely be toward a simpler, less ambitious business. A simpler, less ambitious business would be less in need of external finance and thus less affected by the "credit crunch" (Cowling, Liu, & Ledger, 2012; Smallbone et al., 2012). Further, when novelty—innovation—is added to newness, the challenge of lacking legitimacy is aggravated (Amason, Shrader, & Tompson, 2006). Although more innovative, growth-oriented, and capital-intensive ventures may have better prospects once they have been established (Cefis & Marsili, 2005), nascent entrepreneurship research confirms such ventures are significantly more difficult to get off the ground (Kim, Longest, & Lippmann, 2014; Samuelsson & Davidsson, 2009; Van Gelderen et al., 2005). After the onset of the crisis, a simplified version of the venture idea

may be the only type of idea that the nascent entrepreneur can have confidence will have any realistic success chances. Because of the effect of the crisis on other options, the expected yield from a less ambitious venture may nevertheless remain the preferred option. Accordingly:

Hypothesis 4a–b: The onset of a major macroeconomic crisis makes continuing nascent entrepreneurs likely to reduce the level of ambition of their venture-creation attempt in terms of its degree of novelty (hypothesis 4a) and the growth aspirations for the venture (hypothesis 4b).

Moderator Hypotheses

Many circumstances pertaining to the emerging venture, the environment, and the nascent entrepreneurs themselves may influence if and how they respond to a macroeconomic crisis. We choose to focus on two potential moderators that tend to recur in relevant literatures: *commitment* and *ambition*.

Hirschman's (1970) exit-voice theory is a general theory about responses to decline of an organization to which one is affiliated. For our purposes, the important part of the theory is that exit and voice responses (where the latter also includes any form of remedial action) are expected to be moderated by loyalty, which coincides with what is elsewhere usually labeled *commitment*. According to Hirschman's theorizing, those with the strongest commitment to the organization are the least likely to disengage and the most likely to take remedial action. This is because the most committed are those who are most eager to secure the continued existence of the organization. In our context, this implies the following:

Hypothesis 5a: High commitment to the nascent venture negatively moderates the relationship between the onset of a major macroeconomic crisis and nascent entrepreneurs' propensity to disengage.

Hypothesis 5b–d: High commitment to the nascent venture positively moderates the relationship between the onset of a major macroeconomic crisis and increased work effort (hypothesis 5b), as well as simplification of the venture in terms of reduced novelty (hypothesis 5c) and reduced growth aspirations (hypothesis 5d).

The possible effect of commitment on delay is theoretically unclear and therefore not hypothesized. Note also that commitment to a nascent venture may reflect not only laudable tenacity but also detrimental escalation of commitment (DeTienne, Shepherd, & De Castro, 2008; Holland & Shepherd, 2013).

We have already noted that more ambitious (or "higher potential") venture ideas are harder to convert into operational businesses and also seem to be relatively harder hit by macroeconomic crises. Hypothesis 4 suggests this may lead nascent entrepreneurs to reduce the level of ambition for continuing start-up efforts. Alternatively, the observed reduction in higher ambition start-ups at the aggregate level may result from a higher propensity of nascent entrepreneurs involved in such efforts to disengage or delay their start-up, thus reducing the quality of the start-up cohort that can be observed after the onset of the crisis. This leads us to the following:

Hypothesis 6a–b: High ambition positively moderates the relationship between the onset of a major macroeconomic crisis and nascent entrepreneurs' propensity to disengage from (hypothesis 6a) or delay the venture creation attempt (hypothesis 6b).

Method

The Empirical Setting: The GFC in Australia

We use panel data about nascent entrepreneurs in Australia. It has been concluded in retrospect that Australia was less hit (longer term) by the GFC than were the United States and Europe (Le Queux & Waring, 2010). However, this was not at all clear at the time of our data collection, immediately before and after the onset of the crisis. On the contrary, virtually all economic indicators show that the interview period was characterized by extreme conditions. This goes for business confidence (National Australia Bank, 2011); stock prices (Yahoo, 2014); currency exchange (XE Currency Converter, 2014); the central bank's guiding interest rate (Reserve Bank of Australia [RBA], 2014); debt agreements, bankruptcies, and "Part X Administrations" (Insolvency and Trustee Services Australia, 2012); nonperforming, securitized home loans (RBA, 2009); mortgage repossessions (Life and Community Care Queensland, 2010); house prices (Australian Bureau of Statistics [ABS], 2010); and new business registrations (ABS, 2011). Several of these indicators show a deeper fall and slower recovery than the United States and other countries. All in all, there is no doubt that the empirical setting should be suitable for testing our hypotheses.

Sample and Design

We use data 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 using techniques that were carefully refined in prior projects (Reynolds, 2009). A total of 625 individuals qualified as nascent entrepreneurs and completed a comprehensive, 40–60 minutes long telephone interview (W1). To qualify as nascent entrepreneur, they needed to be currently engaged as active (part) owners in an emerging business venture where some concrete action had been taken toward 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 recontacted for a 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 disengagement analysis. Of the W2 respondents, 337 were still actively involved in the start-up and could participate in the full W2 survey. Thus, 337 cases is the maximum sample size for analyses of delay, compensation, and adaptation.

The W2 interviews took place from July 24, 2008 to June 11, 2009. The Lehman Brothers' collapse, commonly cited as the starting point of the GFC (e.g., Milesi-Ferretti & Tille, 2011; Ocampo, 2009; Rauch, Doorn, & Hulsink, 2014), occurred on September 15, 2008. It was after this event that the economic indicators mentioned above turned sharply downward. 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.

Operationalization: Dependent Variables

Disengagement is a dichotomous variable with value (1) for cases where either the respondent or any other (owner) team member terminated his/her involvement between

W1 and W2 interviews. For all other cases, a (0) is recorded. In a significant minority of cases (44.2%) disengagement of the sole founder effectively constitutes termination of the nascent venture. In the difference in difference (DID) version of our analysis (explained below), we use a count version of the variable measuring team size at W1 and W2 (with a 0 in W2 reflecting venture termination).

As this research uses a natural experiment situation (unplanned by definition), we are restricted to delay, compensation, and adaptation indicators that refer to the respondent's current and future situation, not the past.[1] We use the following indicators:

Delay—Decreased Work Effort. This is measured indirectly as a nontrivial decrease from W1 to W2 in "How many hours per week do you [and all other owners combined] currently work for this business?"[2] The assumption is that reduced work effort reflects a tendency toward "idling" while waiting for uncertainty to resolve. The variable has value (1) for cases with a 10% or more reduction in work effort tested against others (0).

Compensation—Increased Work Effort. We measure compensation—increased resource inputs to counteract the negative impact of the crisis—as a nontrivial, venture level W1-to-W2 increase in the current level of work effort devoted to the venture, using the same interview question to capture responses as for delay (above) but focusing on positive change. The variable has value (1) for cases with a 10% or more increase in work effort and (0) for others.

Simultaneous support for increase in both delay and compensation is possible if substantial subgroups increase and decrease their work effort, respectively. However, in the DID version of our analysis, we use a continuous version of our measure of change in current work effort, effectively making the hypotheses (hypotheses 2 and 3) competitive.

Adaptation—Reduced Novelty. We adapted Dahlqvist and Wiklund's (2012) measure to the nascent venture contexts and expanded it 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 changing the venture rather than to overestimation of novelty in W1. The variable is coded (1) for all respondents reporting actively reducing some aspect of novelty and (0) for others. As dichotomous variables are not appropriate for DID, we used the continuous variable change in total novelty W1-to-W2 for that analysis.

Adaptation—Reduced Growth Aspiration. The respondents were asked: "Once this new business is operational, what is the expected total revenue or income in the first 12 months of operation?" The variable is coded (1) for reduced W1-to-W2 sales revenue aspiration and (0) for others. For the DID analysis, we used a continuous measure of projected 1 year sales revenue.

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1. Many available variables refer to "the past 12 months," which may be mainly pre-GFC for post-GFC respondents, and therefore not suitable for our current purpose.
2. We also tried a more direct approach using the number of start-up activities (Gartner, Carter, & Reynolds, 2004) completed per time unit, but it turned out a number of methods complications made it impossible to perform a meaningful analysis with that approach.

Operationalization: Independent Variable; Moderator, Controls, and Manipulation Checks

Post- vs. pre-GFC 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 disengagement, there are 181 pre-GFC and 312 post-GFC cases. In the remaining analyses, which exclude disengaged cases, the corresponding (maximum) numbers are 121 and 216, respectively. 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—Commitment. As recommended by Dowding, John, Mergoupis, and Van Vugt (2000), we operationalize commitment as past investments. Because monetary investments vary considerably by industry and are prone to internal nonresponse, we use *development stage*. This is a count of the number of "gestation activities" (such as preparing a business plan, raising funds, registering the firm, etc.; see Gartner et al., 2004) that were already undertaken at W1. This variable reflects cumulative progress expended in order to establish the venture, and hence commitment.

Moderator—Ambition. Three indicators were used to establish the level of ambition of the venture: *high-tech*, *Pty Ltd legal form*, and *major loan funding*. This builds on the plausible assumption that more ambitious (or "higher potential") ventures are more likely to be technology-based, be run as a limited liability entity, and seek external financing. High-tech was measured as a dichotomous variable coded (1) for affirmations of "Would you consider this business to be hi-tech?" and (0) for others. Pty Ltd is a dichotomous variable coded (1) for firms whose current legal form is a limited liability company and (0) for others. Major loan funding is important because of the "credit crunch" aspect of the GFC. We computed a dichotomous variable with value (1) if any type of external debt (other than personal credit card) was rated as major funding source (greater than 20% of total funding needs) and (0) for others.

Control—Gender. This is coded (1) for females and (0) for males.

Control—Wealth. We used *home ownership* as indicator of wealth, with respondents who owned their own home coded (1) and others (0).

Control—Human Capital. A dichotomous variable indicates whether the founding team includes someone with a *university degree* (1) or not (0). A continuous variable was used for *industry experience* (years) in the venture's industry, summed across the entire team. Another variable captures whether any founder had *prior start-up experience* (1) or not (0).

Control—Industry. We use dummy variables for each of seven industries that account for at least 5% of our cases, using "other" as reference.

Control—Novelty. Our measure of total novelty is based on the scale developed by Dahlqvist and Wiklund (2012; see the Adaptation—Reduced Novelty section). The four forms of novelty were combined into a formative index (Diamantopoulos & Winklhofer, 2001), with a 0–12 range. Note that this variable controls for the W1 *level* of novelty, whereas the adaptation indicator discussed above assesses W1-to-W2 *reduction* in the novelty of the venture idea.

Control—Services Venture. This is coded (1) compared with products or a product/service mix (0).

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. We use this variable 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 was used to test our disengagement, delay, and compensation hypotheses (hypotheses 1–3), as well our adaptation hypotheses relating to venture simplification (hypothesis 4a). Our other adaptation variable is a continuous measure of change in sales revenue aspired to; hence, hierarchical linear regression analysis was the most appropriate analysis to test this hypothesis (hypothesis 4b). Regression coefficients and the change in model fit were used to assess the influence of the GFC and interaction terms. One-tailed tests of statistical significance are used as the criterion for directional, hypothesized effects as well as our manipulation check. This is consistent with "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 nonhypothesized relationships.

In order to confirm the results for main effects of the GFC, we also analyzed the magnitude of change in all multiwave dependent variables using the DID technique (Card & Krueger, 1994; Meyer, Viscusi, & Durbin, 1995), using continuous versions of the dependent variables. DID is a quasi-experimental technique that calculates the average treatment effect in natural experiments such as this. However, it does not allow interaction effects or dichotomous variables to be modeled as dependent variables. We, therefore, present logistic and linear 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.

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, increasing confidence that the results obtained were not due to accidentally capitalizing on the distributional properties of the dependent variables. Further, 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 subsection toward the end of the Results section.

Results

Results of Hypothesis Tests

Table 1 reports the logistic regression results for our *disengagement* analysis. The corresponding DID test is found in Table A2 (Appendix). Six models are presented.

Table 1

Logistic Regression Analyses of the Effect of the GFC on Disengagement

	Disengage					
Independent variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	.805	1.032†	.377	1.382*	1.127†	1.167*
Female	−.245	−.241	−.249	−.305	−.284	−.304
Home owner	.345	.334	.304	.444†	.410†	.397†
Team venture	.484*	.510*	.494*	.500*	.528*	.557*
University degree	.165	.155	.153	.095	.126	.087
Industry experience	−.015*	−.015*	−.013*	−.015*	−.013†	−.014*
Prior entrepreneurship	.373†	.343	.322	.267	.252	.257
Retail	−.162	−.169	−.149	−.207	−.198	−.187
Consumer services	−.213	−.242	−.231	−.185	−.176	−.172
Health and social services	−.347	−.38	−.381	−.364	−.441	−.425
Manufacturing	−.51	−.49	−.448	−.577	−.511	−.513
Construction	−.392	−.367	−.327	−.473	−.49	−.517
Agriculture	−.776	−.777	−.864	−.776	−.754	−.752
Business consulting	.195	.132	.082	.313	.171	.252
Novelty	−.004	−.001	−.003	.027	.03	.032
Services venture	−.374	−.352	−.341	−.501†	−.39	−.399
Initial development stage	−.112***	−.114***	−.069*	−.128***	−.130***	−.128***
High-tech				−1.330**	−.692**	−.718**
Pty Ltd company				.561†	1.060*	.543†
Major loan funding				.136	.036	.396
Post- vs. pre-GFC		−.328	.861	−.558*	−.166	−.224
		(.215)	(.608)	(.253)	(.241)	(.239)
GFC × development			−.079*			
			(.038)			
GFC × high-tech				.998*		
				(.521)		
GFC × Pty Ltd					−.843	
					(.570)	
GFC × major loan						−.539
						(.576)
n	490					
Model X^2	65.643***	67.970***	72.329***	82.769***	81.205***	79.881***
Log likelihood	−279.531	−278.367	−276.187	−270.968	−271.750	−272.411
Cox & Snell R^2	.125	.130	.137	.155	.153	.150
Nagelkerke R^2	.174	.180	.190	.216	.212	.209
ModelΔ X^2		2.327	4.360*	3.763†	2.200	.876

Notes: Logistic regression parameters expressed as unstandardized coefficients, with standard error for variables with hypothesized influence in parentheses; † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; one-tailed statistical significance for hypothesized directional effects and two-tailed otherwise.
GFC, global financial crisis.

Model 1 includes controls and main effects of moderators. In Models 2–6, we introduce first the GFC main effect and then each of the four *commitment* and *ambition* moderator analyses separately. This is also the set of models we will report in all subsequent, main body text analyses.

Model 2 reveals no detectable effect of the GFC on *disengagement*. Counter to our hypothesis, the effect in the main analysis is negative and increases Nagelkerke's R^2 by a

seemingly not completely negligible .6%. However, evaluated as a nondirectional effect, the onset of the GFC is not statistically significant ($p = .127$; two-tailed). Hypothesis 1 is rejected; we do not find evidence that a crisis of the magnitude represented by the GFC in Australia increases disengagement among nascent entrepreneurs. This is confirmed by the DID analysis and all robustness tests, which also show no support for this hypothesis.

Model 1 reports significant and negative main effects for our measure of commitment, suggesting that it reduces disengagement. While this increases our confidence in the commitment indicator, our hypothesis (hypothesis 5a) concerns the interaction between GFC and commitment. This analysis (Model 3) shows that the interaction term (GFC × development stage) is negative as predicted. The effect is statistically significant ($p = .019$), and the increase in pseudo-R^2 estimates is nontrivial (1%). The interaction effect is illustrated in Figure 1 (top). The curves are visibly different for pre-and post-GFC respondents, and suggest that at earlier development stages nascent entrepreneurs are more likely to disengage because of the GFC (positive marginal effect) in line with hypothesis 1. However, this tendency is statistically uncertain. The 95% confidence band for the marginal probability of disengagement at different stages of development, conditioned upon the effect of the GFC (Figure 1, bottom), excludes zero only at later stages of development (indicating higher commitment). In approximate terms, this means that ventures that have gone past the midway mark for what it normally requires to become an operational business are up to 20% *less* likely to disengage because of the GFC. Hence, the result is counter to hypothesis 1 in this region, providing greater detail on the reasons for rejection of that hypothesis. However, in support of hypothesis 5a, the analysis demonstrates that a disengagement response to crisis is less likely under high commitment (i.e., later in the process). Albeit with a somewhat modified interpretation, hypothesis 5a is supported.

Models 4–6 report ambition moderation results. These models reveal mixed results for the (nonhypothesized) direct effects of our indicators of firm ambition. While limited liability legal form is positively associated with disengagement, the effect is of the opposite sign for high-tech firms. Interestingly, major loan funding does not appear to be related to a higher (or lower) propensity to disengage. This suggests that the relationship between firm ambition (or "high potential") and disengagement is complex.

Our hypothesized relationships concern the interaction between the GFC and ambition. As predicted, a significant positive (GFC × ambition) interaction exists for high-tech ($p = .028$). Founders of high-tech ventures are 18.2% more likely to disengage in response to the GFC. This is in line with earlier results indicating that macroeconomic crisis disproportionately affects higher potential start-ups, and if real the effect is not a trivial effect. The coefficient pattern in Model 4 further suggests that the crisis does not make high-tech founders more prone to disengage than founders of other ventures; the crisis rather appears to eliminate the greater resistance to disengagement high-tech founders have under more normal economic circumstances. However, significant moderation does not appear for legal form or loan funding indicators of ambition. In all, the analysis lends partial support for hypothesis 6a; disengagement in response to macroeconomic crisis may be more likely for nascent ventures with high-tech ambition.

As regards control variables, we find only weak/uncertain industry effects. Solo entrepreneurs are less likely to disengage from the start-up attempt. Industry experience is negatively related to disengagement, while experienced entrepreneurs appear marginally more disengagement-prone than novices.

Table 2 displays the results for regressions for delay and compensation, where the former is represented by a nontrivial decrease (hypotheses 2 and 6b) and the latter by a nontrivial increase (hypotheses 3 and 5b) in work effort.

Figure 1

GFC × Venture Development Interaction on Disengagement—Stage of Development Interaction Plot (top) and Conditional Marginal Effects of GFC With 95% CI Plot (bottom)
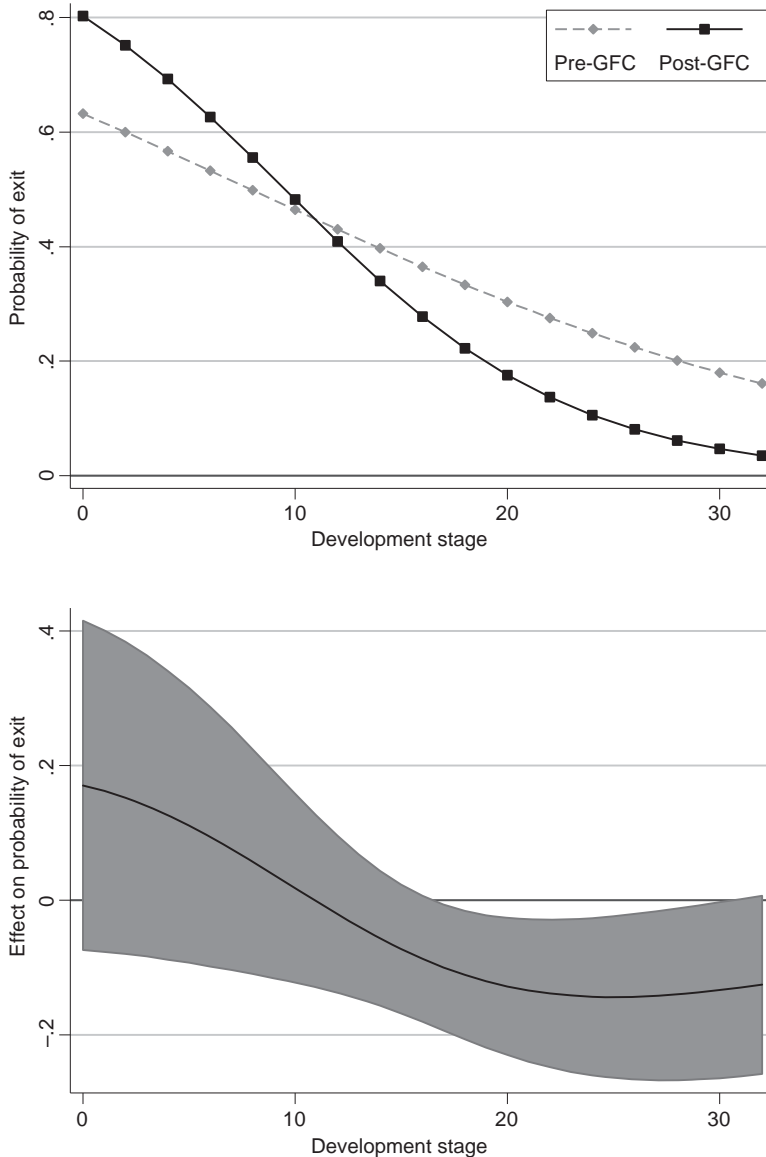
Model 8 shows that the estimated effect of the GFC on delay is not significant ($p = .660$, two tailed). Model 13 shows that the GFC has little effect on compensation ($p = .825$, two tailed). The corresponding DID analysis (Table A2) for change in work effort shows neither a significant decrease (delay) nor increase (commitment). Thus, hypotheses 2 and 3 are not supported. The moderation effects of ambition (hypothesis 6b;

Table 2

Logistic Regression Analyses of the Effect of the GFC on Delay as Nontrivial Decrease in Work Effort and Compensation as Nontrivial Increase in Work Effort

Independent variables		Delay					Compensate	
	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14
Constant	.559	.496	.529	.356	.55	−1.230†	−1.196†	−1.107
Female	−.087	−.088	−.091	−.09	−.087	.267	.267	.271
Home owner	−.152	−.141	−.112	−.151	−.146	.43	.424	.429
Team venture	−.466	−.473†	−.478†	−.509†	−.486†	.621*	.624*	.625*
University degree	−.151	−.149	−.152	−.095	−.146	−.052	−.053	−.054
Industry experience	−.004	−.004	−.004	−.002	−.004	.002	.002	.002
Prior entrepreneurship	.046	.062	.049	.011	.064	.136	.127	.129
Retail	−.439	−.445	−.425	−.415	−.453	.358	.36	.356
Consumer services	−.473	−.457	−.457	−.439	−.473	.446	.438	.435
Health and social services	−1.343**	−1.331**	−1.301**	−1.348**	−1.345**	1.139**	1.132**	1.127**
Manufacturing	−.155	−.174	−.173	−.135	−.191	.174	.183	.184
Construction	.766	.762	.788	.84	.768	−.774	−.769	−.772
Agriculture	−.588	−.59	−.581	−.58	−.596	.292	.294	.3
Business consulting	−.279	−.252	−.201	−.342	−.274	.099	.084	.09
Novelty	.146**	.145**	.144**	.144**	.146**	−.087†	−.086†	−.086†
Services venture	−.285	−.304	−.32	−.295	−.31	.191	.2	.201
Initial development stage	.005	.004	.004	.006	.003	−.021	−.021	−.026
High-tech	−.351	−.353	−.587	−.342	−.347			
Pty Ltd company	.663†	.667†	.655†	1.321*	.694†			
Major loan funding	−.454	−.454	−.435	−.518	−.617			
Post- vs. pre-GFC		.112	−.004	.291	.06		−.056	−.207
		(.254)	(.307)	(.279)	(.286)		(.256)	(.771)
GFC × development								.009
								(.043)
GFC × high-tech			.365					
			(.544)					
GFC × Pty Ltd				−1.047				
				(.671)				
GFC × major loan					.243			
					(.619)			
n	329					329		
Model X^2	36.787**	36.980*	37.431*	39.444**	37.135*	25.776†	25.825†	25.868
Log likelihood	−209.578	−209.481	−209.255	−208.249	−209.403	−206.991	−206.966	−206.945
Cox & Snell R^2	.106	.106	.108	.113	.107	.075	.075	.076
Nagelkerke R^2	.141	.142	.143	.151	.142	.102	.102	.103
ModelΔ X^2		.194	.451	2.463	.155		.049	.043

Notes: Logistic regression parameters expressed as unstandardized coefficients, with standard error for variables with hypothesized influence in parentheses; † $p < .10$, * $p < .05$, ** $p < .01$; one-tailed statistical significance for hypothesized directional effects and two-tailed otherwise.
GFC, global financial crisis.

Table 3

The Effect of the GFC on Adaptation as Decreased Novelty (Logistic Regression) and on Adaptation as Decreased Growth Aspirations (Linear Regression)

Independent variables	Adapt—Dec. novelty				Adapt—Dec. growth		
	Model 15	Model 16	Model 17		Model 18	Model 19	Model 20
Constant	−3.469***	−3.333***	−3.459**		−7.198	−10.237	−8.274
Female	−.242	−.247	−.25		−1.212	−1.903	−1.868
Home owner	.296	.266	.255		1.159	1.338	1.392
Team venture	.247	.258	.253		13.320[†]	13.545[†]	13.565[†]
University degree	−.825*	−.833*	−.833*		−12.264[†]	−12.452[†]	−12.408[†]
Industry experience	−.013	−.012	−.012		.051	.043	.041
Prior entrepreneurship	.27	.248	.245		6.128	6.529	6.547
Retail	.351	.367	.376		16.056	16.358	16.29
Consumer services	.492	.471	.471		2.037	2.147	2.07
Health and social services	.706	.681	.689		3.601	3.533	3.498
Manufacturing	.504	.537	.536		4.097	3.316	3.39
Construction	.139	.164	.165		−6.445	−7.469	−7.497
Agriculture	.623	.631	.621		−8.173	−8.485	−8.499
Business consulting	−.243	−.307	−.32		19.971	21.087[†]	21.115[†]
Novelty	.203**	.205**	.205**		−2.127[†]	−2.233[†]	−2.227[†]
Services venture	.08	.12	.122		1.884	1.961	2.005
Initial development stage	.022	.023	.031		.334	.317	.199
Post- vs. pre-GFC		−.208	.014			4.380	2.000
		(.342)	(1.114)			(8.244)	(28.922)
GFC × development			−.013				.135
			(.060)				(1.574)
n	336				205		
Model X²	23.884[†]	24.25	24.294	R²	.086	.087	.087
Log likelihood	−131.125	−130.942	−130.920	F	1.102	1.05	.987
Cox & Snell R²	.069	.070	.070	Adj. R²	.008	.004	−.001
Nagelkerke R²	.120	.121	.122	ΔR²		.001	.000
ModelΔ X²		.366	.044	ΔF		.282	.007

Notes: Logistic and linear regression parameters expressed as unstandardized coefficients, with standard error for variables with hypothesized influence in parentheses; [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; one-tailed statistical significance for hypothesized directional effects and two-tailed otherwise.
GFC, global financial crisis.

Models 9, 10 and 11) and commitment (hypothesis 5b; Model 14) are not statistically significant. Thus, hypotheses 5b and 6b are not supported. In all, the analyses in Table 2 lend no support to the idea that a macroeconomic crisis alters the behavior of nascent entrepreneurs. Several control variable effects suggest that the type of venture affects delay and compensation behaviors; see coefficients for team venture, health and social service industry, novelty, and legal form.

Table 3 displays regression results for our two adaptation indicators: reductions of the novelty and growth aspiration. The estimated effect is statistically nonsignificant in both cases (Models 16 and 19). The GFC did not increase adaptation in nascent ventures through reduction in novelty ($p = .596$, two-tailed) or growth aspiration ($p = .543$, two-tailed). Further, we do not find evidence that nascent entrepreneurs who choose not to disengage instead exercise adaptation to increase the nascent venture's chances in the

Table 4

Summary of Results of Hypothesis Tests

	Hypothesis tests	Outcome
	Disengagement	
Hypothesis 1	GFC +→ disengagement as team member exit	Rejected
	Delay	
Hypothesis 2	GFC +→ delay as nontrivial decrease in work effort	Rejected
	Compensation	
Hypothesis 3	GFC +→ compensation as nontrivial increase in work effort	Rejected
	Adaptation	
Hypothesis 4a	GFC +→ adaptation as decreased novelty	Rejected
Hypothesis 4b	GFC +→ adaptation as decreased growth aspiration	Rejected
	Commitment moderation	
Hypothesis 5a	GFC × commitment as development stage −→ disengagement	Supported
Hypothesis 5b	GFC × commitment +→ compensation	Rejected
Hypothesis 5c	GFC × commitment +→ adaptation as decreased novelty	Rejected
Hypothesis 5d	GFC × commitment +→ adaptation as decreased growth aspirations	Rejected
	Ambition moderation	
Hypothesis 6a	GFC × ambition as high-tech −→ disengagement	Supported
	GFC × ambition as Pty Ltd legal form +→ disengagement	Rejected
	GFC × ambition as major loan funding +→ disengagement	Rejected
Hypothesis 6b	GFC × ambition as high-tech +→ delay	Rejected
	GFC × ambition as Pty Ltd legal form +→ delay	Rejected
	GFC × ambition as major loan funding +→ delay	Rejected

GFC, global financial crisis.

changed environment (Models 17 and 20). This means that neither the main effects of ambition (hypotheses 4a and 4b) nor the commitment moderation hypotheses (hypotheses 5c and 5d) receive any support.

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. In our view, this surprise finding makes our study interesting and potentially important (Davis, 1971; Landis & Rogelberg, 2013). Arguably, support for each of our main hypotheses would be in line with common preconceptions, and therefore no surprise to most researchers and policy makers. Our main result suggests that for most nascent entrepreneurs and their ongoing start-up efforts, the (behavioral) effects of macroeconomic crises are far smaller than what is likely to be commonly believed. This forces us to think again.

The clearest supportive finding of our study is that commitment negatively moderates the propensity to disengage from the start-up because of a macroeconomic crisis. Nascent entrepreneurs who have reached far into the start-up process seem determined to see it through. Our most important supportive finding is probably that founders of more technologically ambitious ventures are more likely to disengage from the start-up in response

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to the crisis. However, while this is in line with prior research, the overall support for ambition moderation in our data is not strong.

Robustness Tests, Auxiliary Analyses, and Possible Methods Artifacts

The limited effects of the GFC on our sample of nascent entrepreneurs were not theoretically expected and deviate from observed effects on start-up rates and the exit of established small firms (Bradley et al., 2011; Klapper & Love, 2011). This calls for a particularly thorough examination and discussion of alternative explanations of the observed patterns. Therefore, extensive robustness tests and auxiliary analyses were performed to assess the credibility and interpretation of the results reported.[3] We found no indication that our findings are attributable to biased selection (W2 respondents vs. nonrespondents) or assignment (pre- vs. post-GFC respondents). Further, we undertook the following robustness tests: (1) setting the GFC onset at 1 month after Lehman Brothers' collapse to account for delayed reaction; (2) using the number of "months in GFC" as continuous indicator (original and squared); (3) running the analyses separately for solo founders; (4) running analyses separately for manufacturing and constructions firms, and for other firms excluding these two industries, to account for those industries likely to be hardest hit by the GFC; (5) using venture termination rather than individual disengagement; and (6) applying a completely different analysis approach to venture termination, using data from all four waves of data collection and time-stamped information about when the exit occurred. In addition, we considered (7) moderation effects of novelty as another indicator of ambition or "higher potential." We also undertook (8) analyses using "reaching operational state" as the dependent variable. Further, we (9) tried a second, dichotomous indicator of growth orientation because our main operationalization was subject to a high proportion of missing values and low explanatory power. 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.

Stated reasons for disengagement reveal some useful information relating to the GFC. Those reporting disengagement after the GFC suggest that "high profitability looked less likely than previously thought," marginally more than those who disengaged pre-GFC. The notion that the crisis restricts other options gains some support in that post-GFC disengaged cases are somewhat 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 1 year after the event. In response to "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%) suggested "not at all" compared with 18% who said "a lot." Accordingly, relatively few reported making any changes to their business or future plans as a result of the GFC (20%). The most challenging effect felt by the minority who reported being impacted was "slow or lost sales" (58% of eligible cases), followed by the "unpredictability of business conditions" (16%). Note 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.

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3. Detailed results available from the authors on request.

We find it unlikely that measurement error in our dependent and moderator variables would have concealed true effects in line with our hypotheses. These variables are all based on relatively straightforward assessment, unlike truly latent constructs. Meaningful and statistically significant relationships with other variables also support their validity. Neither can we see any immediate reason why our main results would be context-specific (see Welter, 2011). However, close examination suggests that the economic indicators had already started to turn down—albeit much more mildly—prior to Lehman Brothers' bankruptcy. Further, although remaining at low absolute levels, they started to turn up during our GFC interview period. If turning points and current trend direction are as important as absolute levels, the difference between what our pre- and post-GFC respondents perceived in their environment may not have been as marked as what would have been ideal for testing our hypotheses. This said, our manipulation check shows that 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 marginally statistically significant (see last row Table A2, Appendix). This result is exactly in line with only post-GFC cases being exposed to the macroeconomic crisis at the time of the W2 interview, and that they noticed the crisis while not seeing it as a major hurdle for business start-ups.

An alternative way of reading the data presented by Klapper and Love (2011) and the ABS (2011) is that 75–95% of the business population was largely unaffected by the GFC. If so, samples the size of ours may have insufficient statistical power to capture all practically significant (Kirk, 1996) aggregate effects. 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, 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. Considering 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 respond much at all.

Discussion

Alternative Responses to Crisis

In developing our hypotheses, we found reason to develop a simple typology of responses to crisis: *disengagement*, *delay*, *compensation*, or *adaptation*. This may prove a useful conceptualization for future theorizing and testing of how nascent entrepreneurs and ventures respond to crises, and what factors influence different responses. Future work can extend beyond *macroeconomic* crises and use industry-, location-, or venture-specific upheavals, which would have inescapable negative impact on the entities under study, and therefore be more likely to trigger some type of response. Future work can focus on what type of founder and venture are likely to show which response, as well as on how responses are combined, simultaneously (e.g., compensate and adapt) or over time (e.g., delay, then disengage or adapt). Retrospective studies and work addressing environmental jolts of a less sudden kind ([de]regulation; emergence of technological substitutes) can be planned in advance, and therefore develop more ideal operationalizations than we had available for the current study. Further, note that awareness and assessment of the other response alternatives are important for design and interpretation also when the theoretical interest is directed toward one particular response (e.g., disengagement).

The Empirical Findings and Their Policy Implications

The most consistent pattern found in our study is that our hypothesized main effects were *not* supported by the data, despite the appropriate research setting. We hold that the surprising absence of direct effect of macroeconomic crisis on nascent entrepreneurs and their ventures is the most interesting and most important finding of our study. It suggests that some rethinking of current notions is required (Landis & Rogelberg, 2013).

For disengagement, the lack of effect may occur because a macroeconomic crisis worsens the prospects of other alternatives (employment, other ventures, retirement based on now reduced wealth) as well. A slight change in disengagement reasons (auxiliary analysis) is aligned with this interpretation. However, decline in other alternatives cannot account for the apparent low incidence of compensation or adaptation. Prompted self-reports of GFC effects (auxiliary analysis) also point at limited effects, especially as these self-reports are likely to be exaggerated.

The lack of support of our main effect hypotheses suggests that the reduction in business registrations reported by Klapper and Love (2011) arises mainly from processes other than killing off independent start-ups in the making. One candidate is the decrease in the formation of new organizational entities by existing firms, in line with results suggesting that larger firms are relatively harder hit by crises (Bradley et al., 2011; Davidsson et al., 1999). For independent start-ups, the effect of a crisis may predominantly be to make prospective entrepreneurs who are not yet in the start-up process refrain from entering it. Other research suggests that this may represent a delay rather than permanently barring prospective entrepreneurs from trying that career (Yu, Orazem, & Jolly, 2009). Accordingly, business registrations in Australia not only recovered but surpassed previously recorded levels after the GFC (ABS, 2011).

The lack of effect on disengagement and adaptation has important implications for policy and public spending. In a time when business start-ups are high on the policy agenda (Shane, 2009) and ongoing 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). Our results—which arguably represent the only, systematic evidence on the issue—suggest that public spending of that kind would not be justified, especially not for nascent ventures that are far progressed. If any measures of that kind should be considered, they should target high-tech start-ups, which our result tentatively suggested are more significantly affected.

Insights Into the Theorizing and Debate Regarding 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; Delmar & Shane, 2004; Freeman et al., 1983). Importantly, resilience is commonly associated with greater flexibility and adaptability of younger and smaller actors. Along those lines, prior 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). 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 *other* alternatives open to the nascent entrepreneurs also being adversely affected by the crisis, leaving founders "locked in" to inferior venturing attempts.

In light of the above, it is imperative to note that adaptability and flexibility are *not* what we observe. We find no direct evidence that creative maneuvering was what helped the nascent entrepreneurs in our sample through the crisis. This may be because they choose to simply "sit it out" due to lack of more attractive alternatives. However, this does not explain the absence of effects on compensation and adaptation. Lack of other alternatives should not prevent founders from actively improving their situation. Further, when prompted in arrears, most nascent entrepreneurs did not report adverse GFC effects. Rather, it seems that most start-up efforts were not much affected, and therefore they went on with (emerging) "business as usual" right through the crisis. A macroeconomic crisis may be manageable for nascent ventures because they are often 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. This may make the choice of not responding to the crisis much more feasible than for young, established firms with substantial fixed costs.

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 disengagement does not necessarily reflect creative resilience.

Conclusion

In this paper, we used the onset of the GFC in the middle of an ongoing, longitudinal study as a natural experiment in order to investigate the effects of a major economic downturn on the development of nascent ventures. Inferring insights into environmental uncertainty, opportunity confidence, and the importance of other options available from multiple literatures, we hypothesized direct and moderated effects on the propensities to disengage from or delay the venture-creation process, as well as to adapt the venture or to compensate by working harder.

Overall, we found very limited support for our main effect hypotheses. This unexpected result has important implications for policy and for our understanding of the alleged resilience and vulnerability of nascent ventures. We found some support that the levels of commitment and ambition moderate some responses to crisis.

One implication for future research is that studies directed at how nascent entrepreneurs and ventures respond to crises should focus not on macroeconomic crises and broad samples of start-ups but on environmental jolts that have a stronger effect on the more immediate task environment of nascent ventures in a particular industry or location. We believe such studies can benefit from our conceptualization of alternative responses to crisis in terms of disengagement, delay, compensation, and adaptation in developing theory and empirical evidence on the reasons for differential responses to crisis.

Appendix

Table A1

Descriptive Statistics and Correlations

Variables	N	Min	Max	M	SD	1	2	3	4	5	6	7	8	9	10	11
1 Female	493	0	1	.43	.50	1										
2 Home owner	492	1	2	1.27	.45	−.04	1									
3 Team venture	493	0	1	.50	.50	−.13*	−.14*	1								
4 University degree	493	0	1	.36	.48	−.10*	−.09	.40*	1							
5 Industry experience	492	0	150	15.51	19.53	−.17*	−.05	.28*	.20*	1						
6 Prior entrepreneurship	493	0	1	.59	.49	−.12*	−.08	.24*	.12*	.23*	1					
7 Retail	493	0	1	.17	.38	.17*	−.04	.03	−.03	−.14*	.02	1				
8 Consumer services	493	0	1	.13	.34	.02	.01	−.13*	−.09	−.12*	−.12*	−.18*	1			
9 Health and social	493	0	1	.13	.34	.14*	.03	−.10*	.01	−.02	−.05	−.18*	−.15*	1		
10 Manufacturing	493	0	1	.09	.29	−.16*	.00	−.03	.02	.09*	.07	−.14*	−.12*	−.12*	1	
11 Construction	493	0	1	.06	.23	−.16*	.07	.16*	−.04	−.02	.03	−.11*	−.09*	−.10*	−.08	1
12 Agriculture	493	0	1	.06	.24	.01	−.04	.10*	−.01	.11*	.12*	−.11*	−.10*	−.10*	−.08	−.06
13 Business consulting	493	0	1	.10	.29	.05	−.01	−.08	−.01	.07	−.05	−.15*	−.13*	−.13*	−.10*	−.08
14 Services venture	493	0	1	.52	.50	.05	.06	−.16*	−.06	−.07	−.09*	−.39*	.19*	.22*	−.21*	.09*
15 Development stage	493	3	32	16.16	6.08	−.04	−.08	.12*	.04	.19*	.14*	−.07	.00	.04	−.09*	.02
16 High-tech	493	0	1	.31	.46	−.15*	.07	.07	.14*	.03	−.09	.04	−.01	.02	−.09	
17 Pty Ltd company	493	0	1	.19	.39	−.16*	−.04	.21*	.22*	.26*	.19*	−.11*	−.05	.06	.01	.02
18 Major loan funding	493	0	1	.20	.40	.01	−.05	.11*	−.03	−.01	.04	−.01	.01	.02	−.05	.03
19 Post- vs. pre-GFC	493	0	1	.63	.48	−.02	−.05	.07	−.01	.07	−.05	−.02	−.02	−.05	.06	.06
20 Venture team size [t1]	492	1	35	1.98	2.57	−.14*	−.08	.38*	.22*	.40*	.17*	.04	−.07	−.05	.11*	.02
21 Venture team size [t2]	492	0	35	1.38	2.31	−.11*	−.11*	.29*	.20*	.44*	.14*	−.03	−.04	−.01	.13*	.02
22 Work effort [t1]	489	0	403	32.31	40.55	−.11*	−.06	.19*	.07	.26*	.17*	−.05	−.15*	−.03	−.05	.06
23 Work effort [t2]	332	0	720	35.11	52.56	−.11*	−.07	.25*	.12*	.29*	.14*	−.05	−.01	.01	−.01	−.01
24 Novelty [t1]	493	0	12	3.85	2.46	−.05	.07	.04	−.03	.05	.08	−.02	.02	.00	.03	.01
25 Novelty [t2]	330	0	12	3.28	2.51	−.16*	.04	.04	.06	.07	.07	−.03	−.05	.07	.05	.02
26 Sales revenue [t1]	436	0	700	6.25	46.38	−.05	.03	.10*	−.07	.08	.11*	.00	−.05	.01	−.01	.12*
27 Sales revenue [t2]	218	0	100	1.00	7.45	−.09	−.04	.11	.14*	.27*	.10	−.05	−.05	−.04	.01	.09
28 Others survival [t1]	488	1	100	37.65	21.51	.21*	−.01	−.03	−.09*	−.10*	−.14*	.00	.02	−.02	−.04	.07
29 Others survival [t2]	320	0	100	37.02	20.42	.15*	.11	.01	−.11	−.10	−.08	.04	−.01	.03	−.02	.08

Variables	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1 Female																	
2 Home owner																	
3 Team venture																	
4 University degree																	
5 Industry experience																	
6 Prior entrepreneurship																	
7 Retail																	
8 Consumer services																	
9 Health and social																	
10 Manufacturing																	
11 Construction																	
12 Agriculture	1																
13 Business consulting	−.08	1															
14 Services venture	−.14*	.20*	1														
15 Development stage	.10*	.07	.00	1													
16 High-tech	.02	.07	−.05	.09*	1												
17 Pty Ltd company	−.01	.06	.02	.37*	.10*	1											
18 Major loan funding	.11*	−.09*	.05	.30*	−.08	.06	1										
19 Post- vs. pre-GFC	−.01	−.08	.02	.00	.02	.00	.03	1									
20 Venture team size [t1]	.02	−.05	−.14*	.09	.06	.18*	−.02	.02	1								
21 Venture team size [t2]	.04	−.04	−.09	.19*	.11*	.20*	.02	.08	.78*	1							
22 Work effort [t1]	.10*	−.03	−.11*	.37*	.10*	.23*	.12*	.09*	.23*	.33*	1						
23 Work effort [t2]	.05	−.03	−.08	.27*	.14*	.17*	.11	.07	.42*	.42*	.39*	1					
24 Novelty [t1]	−.07	−.05	−.11*	.11*	.25*	.01	−.08	.04	.02	.03	.18*	.02	1				
25 Novelty [t2]	−.11*	.04	−.11	.11	.27*	.10	−.06	.02	.08	.08	.17*	.10	.62*	1			
26 Sales revenue [t1]	−.03	.04	−.08	.13*	.07	.15*	.08	−.07	.09	.13*	.09	.18*	−.02	−.03	1		
27 Sales revenue [t2]	−.03	−.03	−.12	.20*	.10	.23*	−.06	.05	.29*	.29*	.50*	.51*	.08	.11	.03	1	
28 Others survival [t1]	.03	−.08	.06	.03	−.05	−.10*	.11*	.06	−.08	−.07	−.04	−.07	−.02	−.16*	−.05	−.10	1
29 Others survival [t2]	.12*	.03	.00	.07	.01	−.09	.16*	−.05	−.09	−.09	.01	−.04	−.07	−.07	.03	−.09	.42*

* $p < .05$; all statistical significance are two-tailed.

Table A2

Natural Experiment Statistics and Difference-in-Difference Analysis of GFC Effects on All Dependent Variables

Dependent variables	Baseline (W1)			Follow-up (W2)			Difference in difference			
	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	.081	1.144	1.511	.368	.286	.018	.295	.264
n = 984	[.181]	[.138]	[.228]	[.181]	[.138]	[.228]	[.322]	(.188)	[.282]	(.148)
Work effort	29.455	40.728	11.273	30.271	37.780	7.509	−3.764	.009	−3.020	.121
n = 666	[4.414]	[3.327]	[5.527]	[4.469]	[3.319]	[5.567]	[7.844]	(.316)	[7.480]	(.344)
Novelty	3.736	3.968	.232	3.208	3.329	.120	−.112	.016	−.093	.088
n = 667	[.227]	[.170]	[.283]	[.228]	[.172]	[.285]	[.402]	(.391)	[.392]	(.407)
Growth (sales rev.)	15.656	5.024	−10.632	.165	1.159	.994	11.626	.017	10.940	.072
n = 522	[4.046]	[3.047]	[5.065]	[7.173]	[3.137]	[7.829]	[9.325]	(.107)	[9.314]	(.121)
Others' 5-year survival	36.500	39.498	2.998	38.378	36.209	−2.169	−5.167	.005[†]	−4.993	.088[†]
Probability n = 655	[1.904]	[1.423]	[2.377]	[1.912]	[1.472]	[2.413]	[3.387]	(.064)	[3.289]	(.065)

Notes: 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 W2 interview timing post-GFC (treatment group) vs. pre-GFC (control group). "Diff." reports differences in means within wave; difference in difference reports average treatment effect for a model with the dependent variable only, as well as for a model that includes covariates (as in regression analyses); R^2 reports explained variance, with one-tailed statistical significance in parentheses (p). [†] $p < .10$.

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