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Early-Life War Experiences and Corporate Financial Outcomes[1]

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Abstract

This paper examines early-life exposure to war experiences among a comprehensive sample of corporate managers and their subsequent tendency towards leverage, cash-holding, investments and M&A activity. Drawing data from the well-document and severe Japanese experience in WW2, we show managers who survived such experiences in their pre-adolescence demonstrate distinct behavioral patterns of financial decision-making in later life. Specifically, they tend to borrow more, hold less cash, invest more in capital expenditure but engage less in M&A deals. This can be understood in the context of 'what doesn't kill you makes you stronger' and in this case, more risk-seeking. Extended analyses confirm that the tendency could be driven by managerial traits of being locally altruistic. In the economic significance tests, we find that the tendency is welcomed by stock market participants.

Keywords: Corporate finance, Childhood, War, Early-life, Behavioral finance

JEL classification: G31, G32, G34, G4

1. Introduction

The impact of early-life experiences on financial outcomes has been a relatively recent but active area of interest for academic finance. In the corporate finance literature for example, studies have examined the effect of experience on financial outcomes through their mediating impact on risk-taking attitudes and beliefs. These studies sit in the broader literature that explores the role of individual attributes in corporate financial decision making, such as marital status (Roussanov and Savor, 2013), political affiliations (Hutton, Jiang, and Kumar, 2014), military experience (Malmendier, Tate, and Yan, 2011), and past career outcomes (Schoar and Zuo, 2011) among others.

In this broad literature, an important strand focuses on the long-run effect of childhood/adolescent experiences, often of a traumatic nature, on financial outcomes. A prominent example is the work of Malmendier and Nagel (2011) who show that individuals who have experienced adverse financial market conditions in the early stages of their lives (in particular, the generation of the Great Depression known as 'depression babies') turn out to be more risk-taking in comparison to their peers. Or, more recently, focusing on early-life negative shocks, Bernile, Bhagwat, and Rau (2017) found evidence of a non-monotonic relation between CEOs' early-life exposure to fatal disasters and their corporate risk-taking. Or, to cite a non-US example, Feng and Johansson (2018) focus on the local severity of famines in China and show such disasters lead to firms having more conservative financial policies.

In other words, the well-known adage that 'what doesn't kill you, makes you stronger', may be valid in certain corporate finance contexts. For example, studying individuals who experienced World War 2 in their childhood, Arpino et al. (2021) show that that exposure to WW2 increases subjective survival probabilities, with socio-economic and health characteristics not playing a mediating role. In a different but related context, Tosun et al. (2021) show that firms' exposure to prior disasters in the corporate world makes them more resilient in the face of new but fundamentally similar disruptions. Specifically, they examine companies headquartered in New York City (henceforth, NYC) and trading in one of the city's three stock exchanges. Among such firms, they focus on those that were active both during the 11 September 2001 terrorist attacks (henceforth, 9/11) and the 2020 Covid period. Importantly, they show such firms displayed more financial resilience during the Covid turmoil compared to control groups. The findings show that the stock price losses of these companies during

Covid were about 7% lower compared to firms that were not exposed to 9/11. This figure is both statistically and economically significant, and represents billions of dollars of market value 'saved' compared to the control group.

Our findings may have important implications for the organisational learning literature in parallel. According to Smith and Elliott (2007), corporate learning from disasters initially takes place at the level of senior managers who have to fire-fight the disaster at hand, and then trickles down the organisation. Disasters, by definition, are "serious disruptions of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts" (UNDRR, 2017). Prior literature also refers to 'surprises' (e.g., Lampel and Shapira 2001; Bechky and Okhuysen 2011), 'rare events' (e.g., Lampel et al. 2009; Starbuck 2009), 'catastrophes' (e.g., Majchrzak et al. 2007), or 'crises' (e.g., Rerup 2009). While not the direct focus of our study, the question of which managerial skills and attributes may facilitate more effective decision making and subsequent learning in disaster situations (Akinci and Sadler-Smith, 2019), is an interesting research focus in and of itself (Amabile & Pratt, 2016).

2. Theoretical Development

Wars are among the most severe and traumatic types of disasters. And among wars, the world has so far not seen an instance as wide-reaching, devastating and deadly as World War 2. How do individuals exposed to such disasters go on making decisions in later life? Particularly with unprecedented disasters that require low probability yet high consequence decisions, and where situations with no similarities to previous experiences arise, adaptiveness and agility can be demonstrated in the form of initial situational assessment followed by mental simulation and consultation (Curnin et al., 2020). The learning process is driven by two key cognitive functions. Firstly, expert intuition, domain-specific learning and experience (Salas, Rosen and DiazGranados, 2010) and secondly, rational, analytical thinking.

In this context, a relatively small but growing number of studies have explored the links between childhood adversity and subsequent household financial decisions in later life. Natural disasters, wars, bereavements, recessions, and other events that become part of individual

histories of those who experience them, have been shown to be associated with variation in risk taking across individuals, even several decades after their occurrence (Bernile et al., 2017, Bucciol and Zarri, 2015, Guiso et al., 2018, Malmendier and Nagel, 2011). For example, Cheng and Smyth (2020) examine the 1959-1961 Chinese Great Famine and find that financial literacy, risk-taking preferences and locus of control are channels through which childhood adversity in the famine years affects household portfolio decisions.[1]

As mentioned above, Arpino et al. (2021) examines the legacies of childhood traumas and on the psychological determinants of expectations about survival and formulates two competing hypotheses which lead to opposite predictions about the effect of war exposure on subjective survival probabilities. A negative effect can be hypothesized if children exposed to the traumatic events of the Second World War manifest signs of PTSD also in the adulthood. A positive effect, on the contrary, is expected if, through the adverse life experience of WW2, individuals learn to appreciate their life to a larger extent and become more resilient and optimistic about their recovery capacity (post-traumatic growth, or PTG).

In a similar spirit to these studies, we examine whether civilian war experiences, in particular WW2, alter policies of corporate managers. The most intuitive conjecture on the effect of war violence is related to "risk-aversion" of corporate managers. As shown in previous studies in the corporate finance literature, negative shocks could make corporate managers more risk-averse. In the labor economics literature, Kim and Lee (2014) analyzing the effect of the Korean War on risk attitudes of individuals admit that those who experienced the war during their childhood (4-8 years old) are more likely to be risk averse. Based on such findings, we can assume a negative relationship between severity of war experience and managerial risk attitude.

Conjecture 1: Corporate managers who experienced severe war trauma are more likely to show risk-averse behaviors.

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[1] The Chinese Great Famine was, in terms of excess death rates, the greatest famine in history (Grada 2007). It is estimated that 36 million, of a 1959 population of 665 million people, may have died of starvation or hunger-induced illnesses, although there are reports that these statistics were under-reported by the central government (Yang 2013).

However, some empirical studies report that the effect of being exposed to war violence on economic/financial outcomes is not limited to its impact on risk-aversion. The economics literature also shows that the war violence experiences also affect altruism of the war victims. According to Bauer et al. (2016), while those who experienced war violence show prosocial behaviors among "in-group" communities, the effect of war violence experiences on "out-group" communities is attenuated or unclear. Corporate managers also have many opportunities to contact in-group and out-group communities through their financing and investment decisions. In the corporate finance context, we expect that.

Conjecture 2: Corporate managers who are exposed to severe war violence show more (less) cooperative and altruistic behaviors in trades/deals with in-group (out-group) communities.

In the following section, we lay out the empirical design of the paper and explain the data sources and variables.

3. Data and Empirical Design

To examine the above conjectures, we focus on corporate managers in Japan and explore potential relationships between exposure to war violence and corporate activities. Our procedures are as follows. *First*, we use demographic data of corporate boards describing their name, date, and place of birth in a sample of firms listed in the first section of TSE from 2003 to 2019 (as previous studies focus on S&P 1500).

Second, we collect a database on civilian fatalities during WW2. Then, we merge the two databases to gauge the likeliness of corporate managers to be exposed to war violence during a particular period, for example during early childhood (2 to 6 years old), late childhood (7 to 11years old), and adolescence (12 to 16 years old) as measured at the end of 1944.

Third, using civilian fatality ratios in their birthplaces and constructing a ranked measure of the severity corporate managers experienced according to the prefecture-level fatality ratio, we examine the relation between early-life war violence exposure and corporate financing and investment decisions.

The reason we focus on the Japanese experience in WW2 is that it was the last battlefront of WW2 and its most traumatic. It is well documented that large cities in Japan experienced massive air raids by US air force during the WW2. And some of the children who experienced these traumatic bombing attack at the time later attained senior positions (such as president/CEO) in the corporate sector after 2000s. Please see Figure 1 below to shed more light on this point.
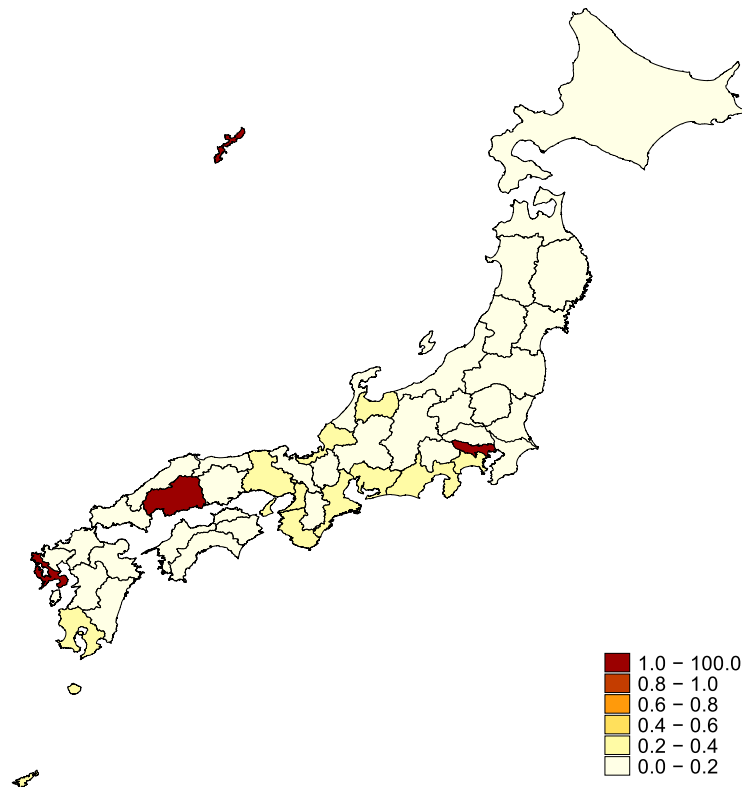
Figure 1: WW2 civilian fatalities in Japan per capita

Our empirical design is econometrically advantageous since most studies in this literature have difficulties in excluding cohort effects. However, some cities in Japan did not experience air raid bombings during WW2. This condition allows us to exploit within-cohort variation in treatment intensity and exclude any cohort effects.

We now go into more detail regarding the analysis of financial statements, and the various alternative forms our main hypotheses cab take.

H1a: If exposure to war violence leads managers to risk-averse behaviors, we expect that managers are more likely to have lower debt ratios, higher level of cash, and refrain from investment.

H2a: If exposure to war violence leads managers to be more in-group cooperative and out-group uncooperative, we expect that managers show reluctance to rely on external funds, particularly equity (higher debt ratios), and are more (less) active in internal (external) investment such as capital expenditure (M&As).

Further, following Shyam-Sunder and Myers (1999), we focus on how managers fill firm financing gaps (financing deficits) through borrowing from banks, corporate bonds, or external equity. In other words, we form two alternative hypotheses as below:

H1b: If exposure to war violence leads managers to be more risk-averse, we expect that managers are less likely to rely on debt issuing such as bank lending and corporate bond issuance to fill financing deficits.

H2b: If exposure to war violence leads managers to be more locally cooperative and out-group uncooperative, we expect that managers are more likely to refrain from equity issuance which is accompanied by additional contacts with external investors.

The financial data for our project is derived from the following sources. Financial data: WRDS (COMPUSTAT) & Nikkei NEEDS (cash flow statement); Market data: Nikkei Portfolio Master; M&A: RECOF M&A database; Data on managers' characteristics: Toyo Keizai executives database (Shiki-ho 2002-2018); Data on WW2 civilian fatalities (prefecture level): statistics released by the Headquarters for Economic Stabilization in 1949. The data were collected by Jun Hirota in 1994; and, Data on populations in 1944 (prefecture level): Statistics Bureau of Japan. In addition, we collect names of Presidents/CEOs from Toyo Keizai executives database, which includes some CEO biographical information. We also use birthplace and date of birth information and match them with prefectural- and year-level data of war death tolls.

Using these datasets, we construct a sample by trimming firms satisfying at least one of the following conditions: 1) Firms belonging to the financial section (mainly, banks, insurance

companies, and brokerage firms; 2) Sample period before FY2002 (because of data limitation on managers' characteristics); 3) Firms which are not listed in the first section of TSE (limiting to larger firms such as S&P 1,500 firms previous studies focus on), and, 4) Firms led by managers with missing data on birthplaces or birth years and managers born in foreign countries.

In terms of main variables, we construct a "Childhood war-experienced" variable which is defined based on the fatality rate per capita (FR) in each prefecture. Thus, we construct the following rank-based variable for managers born during the following "Age range".

$$WW2\ intensity\ rank$$
$$= 1 * (0 < FR =< 0.05\%) + 2 * (0.05\% < FR =< 0.10\%) + 3$$
$$* (0.10\% < FR =< 0.15\%) + 4 * (0.15\% < FR =< 0.20\%) + 5$$
$$* (0.20\% < FR =< 0.25\%) + 6 * (0.25\% < FR =< 0.30\%) + 7$$
$$* (0.30\% < FR =< 0.35\%) + 8 * (0.35\% < FR)$$

Table 1 reports statistics for the main sample based on prefecture. We report results setting the age range as 7=< age at the end of 1944 =< 16. As robustness checks and the examination of age effects, we also provide results using other age ranges. And, we control for the evacuation effect during the WW2. We regard those who are 7-11 at the end of 1944 in Tokyo, Hyogo, Aichi, Osaka, and Fukuoka) are in the lowest rank.

Table 1: Main statistics by prefecture

#	prefecture	civilian fatality	population in 1944	fatality ratio	WW2 non-evac CEOs	WW2 evac CEOs	Non-WW2 CEOs	Total	% of WW2 CEOs
1	Okinawa	94,000	590,000	15.932%	0	0	6	6	0.000%
2	Hiroshima	86,141	1,963,000	4.388%	18	0	81	99	18.182%
3	Nagasaki	26,238	1,491,000	1.760%	8	0	41	49	16.327%
4	Tokyo	97,301	7,271,000	1.338%	32	87	673	705	16.879%
5	Hyogo	11,246	3,224,000	0.349%	17	18	206	223	15.695%
6	Aichi	11,324	3,280,000	0.345%	7	14	165	172	12.209%

7	Shizuoka	6,472	2,028,000	0.319%	15	0	78	93	16.129%
8	Mie	3,600	1,209,000	0.298%	6	0	62	68	8.824%
9	Fukui	1,758	622,000	0.283%	4	0	37	41	9.756%
10	Kanagawa	6,637	2,474,000	0.268%	5	16	191	196	10.714%
11	Toyama	2,174	820,000	0.265%	9	0	41	50	18.000%
12	Osaka	11,089	4,413,000	0.251%	16	28	265	281	14.801%
13	Other prefectures	35,776	43,680,000	0.082%	222	16	1,386	1,608	14.982%
	Total	393,756	73,065,000	0.539%	359	179	3,232	3,591	9.997%

In the entire sample, 14.70% of firms are led by managers given birth during 1928-1937. The cohort effects of birth year and birthplace are included in fixed effects. Table 2 presents the descriptive statistics for main financial variables.

Table 2: Descriptive statistics of financial variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Book leverage	20,104	0.4230	0.1879	0.0000	2.0875
Cash & cash equivalent/current total assets	20,104	0.1647	0.1169	0.0005	0.8830
Capital expenditure/lagged total assets	19,561	0.0382	0.0338	0.0000	0.4801
ROA (EBITDA/lagged total assets)	20,085	0.0926	0.0616	-0.4501	1.0524
Net debt issues/lagged total asset	20,107	0.0023	0.0472	-0.5342	1.3021
Net equity issues/lagged total asset	20,107	-0.0004	0.0329	-0.4719	1.3367
WW2 intensity rank at 7-16	20,107	0.4467	1.4829	0.0000	8.0000
WW2 intensity rank at 12-16	20,107	0.2244	1.1874	0.0000	8.0000
WW2 intensity rank at 7-11	20,107	0.2222	0.9428	0.0000	8.0000
WW2 intensity rank at 2-6	20,107	0.9375	2.2761	0.0000	8.0000
%(WW2 intensity rank at 12-16>0)	20,107	0.0458	0.2090	0.0000	1.0000
%(WW2 intensity rank at 7-11>0)	20,107	0.1012	0.3016	0.0000	1.0000
%(WW2 intensity rank at 2-6>0)	20,107	0.1838	0.3873	0.0000	1.0000
Total asset (million Yen)	20,107	451,701	1,647,281	0	51,900,000
Tobin's Q	20,104	1.1667	0.6838	0.2558	19.1927

Tangibles-(total) asset ratio	20,104	0.4557	0.1982	0.0113	1.0000
Financing deficit/lagged total assets	19,561	0.0059	0.0597	-0.9152	1.5729
Increase in tangibles-(total) asset ratio	20,090	-0.0027	0.0351	-0.4553	0.4474
Increase in Tobin's Q	20,104	0.0052	0.3610	-7.7526	7.1000
Increase in sales	19,562	0.0348	0.1825	-2.7406	4.7283
Increase in ROA	19,969	-0.0003	0.0371	-0.6104	1.1807

4. Empirical Findings

In this section, we implement the empirical strategy to test our hypotheses. In the regressions that follow, the dependent variables are the following: Book leverage = (current liability + long-term debt)/book asset; Cash holding = (Cash & cash equivalents + short-term investment)/book asset; Capital expenditure; Number of M&As (deal amount > 0.5b); Indicator of M&As (deal amount > 0.5b).

$$Dependent\ variable_{i,t} = \beta_0 + \beta_1 WW2\ intensity\ rank_{i,t-1} + X'_{i,t-1}B_2 + \sum FE + \epsilon_{i,t}$$

Xi,t-1 is a matrix of control variables (following Bernile et al., 2017), which consist of lagged natural logarithm of asset size, Tobin's Q, tangibles-(total) asset ratio, book leverage, and ROA. FEs include firm, time, birth-year, birthplace, and managers' alma mater fixed effects.

Table 3: Impact of WW2 intensity on financial variables

Dep. Vars.	book leverage	cash-to-asset ratio	capital expenditure	M&A deals	I(M&A in a particular year)
Estimation methods	OLS	OLS	OLS	Poisson	Logit
WW2 intensity rank	0.0039	-0.0019	0.0007	-0.1022	-0.1030
	(2.35)	(-2.14)	(2.26)	(-2.63)	(-1.96)
Ln(book assets)	0.0627	-0.0188	-0.0069	-0.2195	-0.3202
	(8.40)	(-4.29)	(-4.21)	(-2.07)	(-2.30)
market-to-book	0.0219	0.0055	0.0030	0.0238	-0.0416
	(6.54)	(1.68)	(2.51)	(0.32)	(-0.43)
fixed assets/book assets	0.0511	-0.3656	0.0054	0.6055	0.8075
	(1.52)	(-19.34)	(0.69)	(1.47)	(1.37)
I(dividend>0)	-0.0516	0.0007	0.0049	0.7757	0.9492
	(-8.93)	(0.26)	(4.07)	(4.40)	(4.16)
ROA	-0.5215	0.0848	0.0996	2.2321	3.3971

	(-13.51)	(3.56)	(8.37)	(2.93)	(3.43)
sales growth	0.0610	-0.0445	0.0032	0.0262	-0.2285
	(9.78)	(-8.57)	(1.85)	(0.17)	(-1.02)
insider ownership ratio	-0.0182	-0.0251	0.0081	0.2846	0.4860
	(-0.80)	(-1.94)	(1.72)	(0.64)	(0.84)
R^2 (within)	0.2314	0.2386	0.077	n.a.	n.a.
obs.	19,329	19,329	19,331	10,884	10,798
# of firms	1,689	1,689	1,689	826	817
Fixed effects	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place
SE clustering	firm	firm	firm	no	No

Therefore, firms led by managers who experienced war at the age of 7-16yr are more likely to have higher debt-to-asset ratio and less cash-to-asset ratios. At the same time, they show intense capital expenditure. However, they are more reluctant to invest in M&A deals. These results are robust even after we control managerial characteristics and behavioral biases.

In the following table, we control for managerial attributes and rerun the analysis.

Table 4: Impact of WW2 intensity on financial variables – controlling for attributes

Dep. Vars.	book leverage	cash-to-asset ratio	capital expenditure	M&A deals	I(M&A in a particular year)
Estimation methods	OLS	OLS	OLS	Poisson	Logit
WW2 intensity rank	0.0032	-0.0017	0.0005	-0.1079	-0.1159
	(2.11)	(-1.81)	(1.56)	(-2.51)	(-1.96)
Tenure	0.0001	-0.0002	0.0000	0.0048	0.0080
	(0.32)	(-0.91)	(-0.57)	(-0.45)	(0.75)
Female	-0.0279	0.0992	-0.0098	-0.3760	-0.3053
	(-1.41)	(2.77)	(-1.35)	(-0.45)	(-0.23)
R^2 (within)	0.2641	0.2712	0.0925	n.a.	n.a.
obs.	19,329	19,329	19,331	10,884	10,798
# of firms	1,689	1,689	1,689	826	817

Contorls	firm	firm	firm	firm	Firm
Fixed effects	firm, year, birth year, birth place, school	firm, year, birth year, birth place, school	firm, year, birth year, birth place, school	firm, year, birth year, birth place, school	firm, year, birth year, birth place, school
SE clustering	firm	firm	firm	no	No

While we find consistent tendencies among external investment (M&As) with risk-averse behaviors, we cannot find consistent results among financing activities. Corporate managers who experienced war violence are more likely to be risk-seeking. From the locally cooperative view, reluctance of equity issuance and external investment is consistent with H2. In other words, H2 can explain empirical results we obtained thoroughly.

In addition, Previous studies suggest that managerial behavioral biases, particularly overconfidence, could affect corporate activities. Including managerial optimism/pessimism measures, we conduct the same analysis. As we cannot obtain data on stock options as Malmendier and Tate (2005), we employ decilized managerial EPS forecast errors (by fiscal year) to measure managerial overconfidence/optimism. See Lin et al. (2005) about relevance of the measure to use as a proxy for overconfidence.

Table 5: Impact of behavioural biases

Dep. Vars.	book leverage	cash-to-asset ratio	capital expenditure	# of M&A deals	I(M&A in a particular year)
Estimation methods	OLS	OLS	OLS	Poisson	Logit
WW2 intensity rank	0.0038	-0.0020	0.0008	-0.1120	-0.1102
	(2.29)	(-2.18)	(2.37)	(-2.69)	(-2.07)
Overconfidence/optimism	-0.0002	-0.0016	0.0005	0.0255	0.0388
	(-0.82)	(-10.11)	(7.52)	(3.23)	(3.57)
R^2 (within)	0.237	0.2499	0.081	n.a.	n.a.
obs.	19,329	19,329	19,331	10,884	10,798
# of firms	1,689	1,689	1,689	826	817
Contorls	firm, manager	firm, manager	firm, manager	firm, manager	firm, manager
Fixed effects	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place
SE clustering	firm	firm	firm	no	No

Further, the tendency we found in the main results is more salient among those who experienced war at school ages. Those who experienced war show less altruistic behaviors in

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out-group (foreign) investment. Those who experienced war are more likely to refrain from equity issuance where information asymmetry between corporate managers and investors are severe and altruistic behaviors are tough. Their corporate policy has a positive impact on economic outcomes. However, while the impact on market value is significantly positive, the impact on ROA is not so significant. This indicates that market participants welcome corporate managers with severer war experiences, even if they do not contribute to improvement in profitability.

We also conduct a range of robustness tests which control for alternative measures of WW2 experience intensity. For example, when we employ an indicator which takes one when fatality rate of a manager's birthplace is more than 0.25%, we obtain similar results to our main results.[2] Overall, our extended analyses lend support to the hypothesis that war experience causes corporate managers to be more locally-cooperative.[3]

Thus far, we show that corporate managers show locally-altruistic behaviors. Focusing on the bright side of the tendency, higher debt and less cash ratio enables firms to operate efficiently. Furthermore, their locally-bias investment tendencies enable them to dodge reckless investment and realize more promising economic outcomes. On the other hand, local altruism could lead corporate managers to be more behavioral biased and results in negative economic outcomes. To examine these opposing hypotheses, we investigate the impact of war experience severity on corporate performance and value.

To measure corporate performance and value, we employ ROA and Tobin's Q. We regress the two measures on the variables we used in previous analyses. We include lagged dependent variables to control the effect contributing to previous management characteristics. The results are presented in Table 7. As can be seen the table, the coefficients of WW2 intensity rank show positive values, among which the effect on the market value is statistically significant. The results indicate that the tendency is welcomed by stock market participants.

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[2] We report the robustness tests in Table 6. Panel B of Table 6 presents results when we divide severe WW2 experienced corporate managers into two sub-groups, those who lived in the top 4 fatality rate prefectures and those who lived in the following eight prefectures.

[3] We also conduct extended analyses by constructing ranked war intensity variables according to experience ages and dividing M&A samples into domestic and foreign M&As. These results show that corporate mangers with intense war experiences show more locally-altruistic behaviors. Furthermore, in the extended analysis similar to Shyam-Sunder and Myers (1999) and Frank and Goyal (2003), we find that corporate managers with intense war experiences are more likely to refrain from issuing equity, which is also consistent with being locally-altruistic.

Table 6: Robustness test

Dep. Vars.	book leverage	cash-to-asset ratio	capital expenditure	# of M&A deals	I(M&A in a particular year)
Estimation methods	OLS	OLS	OLS	Poisson	Logit
Panel A: WW2 intensity dummy					
WW2 intensity dummy	0.0227	-0.0145	0.0047	-0.4418	-0.4380
	(2.40)	(-2.74)	(2.56)	(-1.96)	(-1.43)
R^2 (within)	0.231	0.239	0.077	n.a.	n.a.
obs.	19,329	19,329	19,331	10,884	10,798
# of firms	1,689	1,689	1,689	826	817
Contorls	firm, manager	firm, manager	firm, manager	firm, manager	firm, manager
Fixed effects	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place
SE clustering	firm	firm	firm	no	No
Panel B: WW2 intensity mid and high intensity					
Top 4 fatality prefec	0.0216	-0.0096	0.0067	-0.3120	-0.4091
	(2.05)	(-1.50)	(3.04)	(-1.27)	(-1.16)
Top 5-12 fatality ratio prefec	0.0241	-0.207	0.0020	-0.7446	-0.4880
	(1.81)	(-2.88)	(0.89)	(-2.22)	(-1.14)
R^2 (within)	0.231	0.239	0.077	n.a.	n.a.
obs.	19,329	19,329	19,331	10,884	10,798
# of firms	1,689	1,689	1,689	826	817
Contorls	firm, manager	firm, manager	firm, manager	firm, manager	firm, manager
Fixed effects	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place	firm, year, birth year, birth place
SE clustering	firm	firm	firm	no	No

Table 7: Economic impact

Dep. Vars.	ROA	market-to-book
WW2 intensity rank	0.0007	0.0061
	(1.48)	(2.12)
overconfidence/optimism	-0.0053	-0.0189
	(-47.87)	(-21.05)
Ln(book assets)	-0.0158	-0.0482
	(-7.90)	(-2.17)
lagged market-to-book	0.0195	0.5926
	(10.94)	(18.02)
fixed assets/book assets	0.0076	-0.1350
	(0.97)	(-1.72)
Leverage	0.0105	0.0085
	(1.52)	(0.11)
cash ratio	-0.0126	0.1607

	(-1.60)	(1.63)
I(dividend>0)	0.0021	-0.0287
	(1.59)	(-2.58)
lagged ROA	0.5111	0.1078
	(25.24)	(0.65)
sales growth	-0.0099	-0.0148
	(-3.06)	(-0.79)
insider ownership ratio	0.0117	-0.0647
	(2.29)	(-1.15)
Tenure	0.0000	0.0012
	(0.57)	(1.67)
Female	0.0153	0.1428
	(1.16)	(0.61)
R^2 (within)	0.5423	0.4319
obs.	19,129	19,129
# of firms	1,687	1,687
Fixed effects	firm, year, birth year, birth place	firm, year, birth year, birth place
SE clustering	firm	Firm

5. Conclusions

Our study makes important contributions to the literature on early-life experience and corporate activities. While previous studies focused more on early-life experiences (Malmendier and Nagel, 2011; Bernile et al., 2017; Feng and Johansson, 2018), our study examines the effect of war experiences on altruistic behaviors of corporate managers. In addition, as far as we know, examination of war experience of corporate activities is unexplored in previous studies. The effect of WW2 experiences on financial risk-taking at the individual level among European countries is examined in Bellucci et al. (2020).

We suggest hypothesis that exposure to war violence in childhood leads corporate managers to be more 1) risk-averse or 2) locally altruistic. In financing activities, corporate managers with severer exposure to war violence are more likely to rely on debt and have less cash. In investment activities, the corporate managers tend to be conservative. Extended analyses confirm that the tendency could be driven by managerial traits of being locally altruistic. In the economic significance tests, we find that the tendency is welcomed by stock market participants.

Focusing on severe exposure to war violence during childhood, we examine whether the experiences affect corporate activities. While previous studies are keen on the effect of adverse

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experiences on risk perceptions, this study reveal an unexplored and unnoticed (in the finance literature) tendency of corporate managers being locally altruistic.

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