Tear Down This Wall Street: The Effect of Anti-market Ideology on Financial Decisions

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Abstract

I manipulate exposure to anti-market ideology in a controlled environment. Subjects exposed to anti-market ideology invest less often and less money in risky financial opportunities than controls. Female, older, and college-educated subjects drive the results. Risk aversion does not change with the manipulation. Instead, treated subjects have a more negative view of the financial sector, and they react to positive news but not to negative news regarding investment payoffs in subsequent investment choices. These results are consistent with context-dependent beliefs (Bordalo, Gennaioli, and Shleifer (2015)). Anti-market ideology might make bad payoffs more representative of financial investments, so that treated subjects do not react after experiencing bad payoffs. Contrary to behavioral biases, anti-market ideology makes more sophisticated agents deviate from neoclassical decision-making.

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1 Introduction

The 2008 collapse of Lehman Brothers and the financial crisis had a strong influence not only on economic outcomes, but also on ideology (Zingales (2015)). Anti-capitalist movements gained global support following the lead of the US-born *Occupy Wall Street* movement. Existing anti-capitalist schools of thought, such as the *Degrowth* school of thought, spread widely because of the disillusionsment with the financial system. Politics revived the anti-market discourse in the United States and Europe, where anti-capitalist parties received large representation in national parliaments.\(^1\) Anti-market ideology has also appeared recently in the official teachings of influential religious leaders (Bartholomew (2012); Francis (2013); Francis (2015)).\(^2\)

Whereas researchers have studied the financial crisis and the Great Recession extensively, we know nothing about the effects of anti-market ideology on economic outcomes, even though anti-market ideology has existed since before the start of modern capitalism.\(^3\) Anti-market ideology could be a mere cultural by-product of economic shocks, with no effect on economic decision-making. But recent theoretical results suggest the context in which agents make decisions shapes their beliefs about the future states they will face, as in the model of *diagnostic expectations* by Bordalo, Gennaioli, and Shleifer (2015). A rising empirical literature in Cultural Finance also shows the stereotypes induced by the context decision makers face shape their financial decisions.\(^4\) Anti-market ideology might affect financial decision-making, by increasing the representativeness of bad payoffs.

In this paper, I aim to provide a causal test for whether anti-market ideology affects the investment behavior of individuals, and to study the properties of such effect. Running

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\(^1\)The coalition *Syriza* won the 2015 Greek general elections, the Italian *Movimento 5 Stelle* is the second-largest party in the country, and the far-left Spanish coalition *Podemos* has recently gained control of the largest Spanish cities, Madrid and Barcelona.

\(^2\)For instance, in Chapter 6-I-203, Francis (2015) writes: "Since the market tends to promote extreme consumerism in an effort to sell its products, people can easily get caught up in a whirlwind of needless buying and spending. Compulsive consumerism is one example of how the techno-economic paradigm affects individuals."

\(^3\)For instance, the notion of *chrematistics* introduced by Aristotle (320BC) can be interpreted as a negative portrait of capitalism, and it was the philosophical basis for the subsequent moral condemnation of usury in Christianity and Islam.

causal tests in the field would be hard, because the waves of anti-market ideology coincide with major economic shocks that affect financial decision-making through wealth, risk aversion, and other channels (e.g., Guiso et al. (2013)). Therefore, I randomly manipulated the salience of anti-market ideology in a controlled environment, and I compare the investment decisions of treated and control subjects. This setup allows me to test for an effect of anti-market ideology on decision-making when keeping constant other potential confounding factors. Economic research has employed priming techniques to address questions for which detecting exogenous variation in the field is hard (Benjamin et al. (2010); Benjamin et al. (2013b); Cohn et al. (2015); Coffman (forthcoming); Bursztyn et al. (2014); D’Acunto (2015)).

To make anti-market ideology salient, treated subjects read a text on the advantages and disadvantages of investing in stocks, whose wording builds on the anti-capitalist language of the Occupy Wall Street movement as studied in Sociology (see Schulz (2015)). Control subjects read a text whose content is the same, but whose wording is ideologically neutral. Crucially, once asked after the experiment, neither treated nor control subjects thought they were exposed to ideologically biased texts.

I find subjects exposed to anti-market ideology are less likely to invest in risky opportunities framed as investments in stocks, and they invest lower amounts conditional on investing. Subjects exposed to anti-market ideology are 10 percentage points less likely to invest in opportunities whose average take-up rate is 70%. They invest $8 less of their $100 virtual endowment than control subjects, who invest $35 on average. The effects are similar across opportunities with varying levels of risk and net present value, including negative net present value.

The negative effects of anti-market ideology on financial decisions hold for the average subject in the experiment, but they vary greatly across demographics. Women, more educated subjects, and older subjects primarily drive the effects. More educated subjects

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5DellaVigna et al. (2015) successfully use a natural experiment that allows testing for the effect of nationalistic ideology on the beliefs of a population in the field.  
6The two texts are in the Online Appendix.  
7All the decisions in the experiment are incentive-compatible, as described below.
are usually more sophisticated, and older subjects have more experience with financial
decision-making than younger subjects. Therefore, contrary to most commonly studied
behavioral biases (e.g., Benjamin, Brown, and Shapiro (2013a), Choi et al. (2014), Barone,
D’Acunto, and Narciso (2015)), anti-market ideology makes more sophisticated agents
deviate from neoclassical decision-making.8

I then move on to test for the channels that might mediate the negative effect of anti-
market ideology on financial decision-making. I note that on one hand, primed subjects
might become more risk averse, and hence exposing them to the anti-capitalist discourse
typical of the Occupy Wall Street movement might remind them of the hurdles and wealth
losses they faced during the recent financial crisis (e.g., Guiso, Sapienza, and Zingales
(2013)). On the other hand, primed subjects might become more suspicious and trust
the stock market and financial investments less. This distrust in finance might let them
think they will be more likely to experience bad payoffs if they invest, irrespective of the
objective probabilities they face. They would thus shy away from investing.

I find risk aversion does not mediate the effect. I elicited subjects’ risk aversion using
two sets of lottery choices à la Holt and Laury (2002). Risk aversion is unrelated to
the exogenous anti-market-ideology prime, even within the demographic groups that
reacted to the ideology prime in their financial decisions. Priming does not even induce
a negative state of mind in subjects, which would increase their risk aversion and lower
their willingness to invest.9

Instead, primed subjects are more likely than control subjects to pick negative words from
the same list of positive and negative words that might describe the stock market and
investment banks. The anti-market ideology prime thus makes subjects more suspicious
and less trustworthy of finance. Primed subjects did not realize they were exposed to
an ideological bias once I asked them explicitly after the experiment. Suspicion toward

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8The tests in the paper cannot explain why the reaction to anti-market ideology differs across
demographics. A possible explanation is subjects only understand the meaning of anti-market cues,
and hence react to them, if they have enough education and experience.

9Negative mood and states of mind affect risk aversion and investment decisions. Research in the field
and the laboratory include Hirshleifer and Shumway (2003), Kamstra, Kramer, and Levi (2003), Kuhnen
finance might come to mind after negative stereotypes related to the financial sector are made salient.

I hypothesize that anti-market ideology might shape subjects’ beliefs about the quality of the payoffs they will face if they invest (Bordalo, Gennaioli, and Shleifer (2015)). If treated subjects thought bad payoffs were more representative for financial investments than good payoffs, they would invest less than controls, consistent with the baseline results in the experiment.

A unique prediction of the diagnostic-expectations framework of Bordalo, Gennaioli, and Shleifer (2015) applied to this experiment is that controls should react to both good and bad news regarding payoffs. Treated subjects, instead, should not react to bad news, because they expected bad payoffs to begin with. I test this asymmetric prediction by looking at within-individual subsequent investment decisions, after telling subjects the realized payoff in their previous investment choice. Controls exposed to the bad payoff after the previous choice invest less in the subsequent choice. Subjects primed with anti-market ideology, instead, do not react after experiencing the bad payoff. Subjects in both experimental conditions react to good payoffs.

The welfare implications of these results depend on the quality of the investment opportunities subjects face. I propose two sound opportunities (NPV>0) and a money-burning opportunity (NPV<0). Subjects invested in the latter opportunity even if risk-neutral agents would not invest, consistent with D’Acunto (2015). Anti-market ideology makes investors worse off when they face a positive NPV opportunity, such as investing in an index fund. At the same time, anti-market ideology might make investors better off by reducing the likelihood they invest in negative NPV opportunities, such as excessive trading (e.g., Barber and Odean (2000)).

The interpretation of the evidence in the paper has caveats. By construction, the analysis

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10 In section 6.B, I discuss the extent to which my setup satisfies the assumption Bordalo, Gennaioli, and Shleifer (2015) need for their results.

11 Although possible, this situation seems unlikely, because excessive traders are disproportionally men and young investors, both of whose demographics did not react significantly to anti-market ideology in the experiment.
isolates reduced-form effects. A drawback is the causal tests do not inform on the expected size of the effects in the field. The experiments change the salience of anti-market ideology to gauge its causal effect on decision-making, but the level of an individual’s agreement with anti-market ideology should affect decisions in the field. Also, the subjects I recruit do not necessarily represent the average individual investor, and the investment decisions that the subjects perform contain no uncertainty. It is reassuring that the more educated and the older subjects drive the effects, because they are more similar to the population of stock market investors in the field compared to younger and less educated individuals.

Tests in a controlled environment also raise concerns about demand effects, that is, subjects might adapt their behavior to what they think the experiment wants to prove. I have two reasons to believe demand effects might be a less relevant concern in this paper. First, treated subjects did not realize they were exposed to a biased text when asked explicitly after the experiment. Second, the predictions of context-dependent beliefs only started to circulate after I ran the experiment. To conform their behavior to please the experimenter, subjects should have had access to preliminary drafts of Bordalo, Gennaioli, and Shleifer (2015), or should have been able to figure out their setup based on earlier work on the salience theory of choice (Gennaioli and Shleifer (2010), Bordalo, Gennaioli, and Shleifer (2012)) and evidence on extrapolative expectations (Gennaioli et al. (2015)), and then should have adapted such predictions to the experimental condition they faced—all during the short time of the experiment. It seems implausible subjects could conform their behavior to please the experimenter even if they wanted to do so.

2 The Controlled Environment

I ran the experiment on an online platform, Amazon Mechanical Turk (mTurk). Kuziemko et al. (forthcoming) were among the first to use mTurk in economics research. On mTurk, Requesters post tasks, and a large pool of Workers can accept to perform them. Requesters are often private companies and Workers are registered users. Workers provide their fiscal address and social security number for tax purposes. Tasks are short, and the average pay is low ($1.39 per hour). Workers based in the United States, whom I exclusively recruited
in this paper, access mTurk mainly to spend their spare time constructively (Paolacci et al. (2010)). The quality of answers is not lower than in human-subjects laboratories, despite the lower pay (Casler et al. (2013)). Frydman and Mormann (2015) find similar results when running the same trial with a laboratory population using high stakes, and with mTurk subjects using low stakes.

Recently, mTurk has gained interest as a means to recruit diversified subjects for artefactual field experiments, in spite of the concern that Workers may not properly complete the tasks. To address the concern, (i) I exploit the rating system of Workers’ ability by previous Requesters, and restrict the subject pool to Workers with at least 95% positive rates on all the tasks accepted in the past, (ii) I track the time they take to complete each task, and (iii) I add implausible options to the lotteries and I verify the subjects do not pick them.\footnote{For instance, I add a choice between $0 for sure and a lottery that pays $0 or a positive amount.}

Advantages over laboratory. mTurk has a set of advantages compared to human-subject laboratories (Horton et al. (2011)), especially for a study that primes ideology:

- Subjects’ demographics are well varied, whereas a sample of college students would mostly include individuals between 18 and 22 years of age with some college education. Substantial demographic heterogeneity exists in the reaction to the anti-market-ideology prime. Recruiting college students in a human-subjects lab would eliminate such heterogeneity, and possibly obscure the main results.

- Subjects come from the whole United States. If subjects came from the same college town, they would live in a peculiar social environment that is likely dissimilar from the one average Americans face, possibly also in terms of ideology and reaction to ideological cues. Moreover, college and MBA students in Economics and Finance are likely to hold substantially different perceptions regarding anti-market ideology than average Americans.

- As an online, double-blind platform, mTurk allows the running of artefactual field experiments in which recruiting is simple (List (2011)). Subjects perform tasks in

\footnote{Mason and Suri (2012) describe mTurk and Workers. Berinsky et al. (2012) replicate laboratory results in political science on mTurk.}
their environment and are not aware they are part of an experiment. This procedure helps me address the concerns of demand effects that the short experimental procedure raises.

- Replicability of results is easy: any Requester accesses the same subject pool. Easy replicability allows for a transparent comparison of results across studies.\textsuperscript{14}
- Workers’ anonymity makes the priming procedure most effective, because subjects can answer questions about trust and personal opinions with no fear of being identified.

3 \hspace{1em} \textbf{Experimental Design and Manipulation Check}

In this section, I describe the experimental design and procedure.

\textbf{Experimental Design.} I recruited 410 subjects on mTurk in August 2015. I excluded one subject whose entries were not meaningful numbers or words, which reduced the full sample size to 409 subjects. The description of the task proposed the reading of a text and answering related questions to earn $.50, plus a chance to earn a bonus by investing in simple risky opportunities and choosing lotteries.\textsuperscript{15} Subjects knew all the details about the computation of their bonus in the investment tasks and the lottery-choice tasks. Considering all the tasks and possible outcomes, the bonus could range from $0 to $0.28. The payments were in line with the average hourly pay of Workers on mTurk, to avoid any undue influence on Workers choosing between the current study and other tasks available on mTurk.

I did not disclose the nature and objectives of the study to ensure (i) subjects did not select into the experiment based on their ideology, (ii) subjects were not primed with anti-market ideology before the experiment, and (iii) the results could be replicated on mTurk in subsequent sessions and by other researchers. The subject pool was restricted to users with a US tax identification number, and with more than 95% of lifetime tasks.

\textsuperscript{14}On September 26, 2012, Daniel Kahnemann proposed a protocol for improving the credibility of research on priming, which is easy to implement on mTurk.
\textsuperscript{15}Although mTurk allows Requesters to not pay Workers who do not perform the tasks appropriately, every subject received the $.50 show-up fee.
approved in the past.

The design consisted of two experimental arms: a control group and a primed group. The control group read an ideologically-neutral text on the advantages and the disadvantages of investing in stocks. The primed group read a text with the same content, but filled with anti-capitalist language. Figure 6 and Figure 7 in the Appendix report the two texts.

The control text was a shortened version of the description of the advantages and disadvantages of investing in stocks from an online forum for retail investors. The text was taken from an internet forum so as to be similar to the texts that subjects, who were internet users, would often read.

The prime text aimed to prime anti-market ideology in subjects. To construct the prime text, I started from the control text, and I substituted the ideology-neutral words in the control text with words and concepts that are typical of anti-capitalist discourse, as described in the sociology and linguistics literature (e.g., see Schulz (2015)). Specifically, "Wall Street” replaced ”stock market,” ”capitalistic economy” replaced ”modern economy,” ”private interest groups” replaced ”private citizens,” ”big corporations” replaced ”large companies,” ”neoliberal approach” replaced ”free disposal of ownership rights,” and ”investment banks like Goldman Sachs” replaced ”specialized investment banks.” Because previous literature has not tested these texts, I provide a manipulation check as described below.

Procedure. The experimental procedure was as follows. In the first stage, subjects answered four background questions including their country of residence, gender, age bracket (18-22, 23-35, 36-45, 46-60, 60+), and education bracket (high school or lower, some college, college degree or higher). Then subjects were randomly assigned to one of the two experimental arms, and read the text associated with their experimental condition. Subjects had to complete each task in the experiment in full before proceeding, but they could leave the experiment at any time. No one left the experiment before completing it in full. After reading the text, subjects were asked three questions, which I exploited for the manipulation check, as described below.
In the second stage, subjects made decisions regarding simple risky financial investment opportunities a la Gneezy and Potters (1997). I explicitly framed the opportunities as investments in a company’s stock. I gave each subject a virtual endowment of $100 at the beginning of each of three periods. Each period, subjects faced an opportunity and decided whether to invest their per-period endowment, and if so, how much. The first opportunity, which I label low-risk opportunity, succeeded with probability 1/2 and paid off 3 times the invested amount in case of success. The second opportunity, which I label negative net-present-value (NPV) opportunity, succeeded with probability 1/3 and paid off 2.5 times the invested amount. The third opportunity, which I label high-risk opportunity, succeeded with probability 1/6 and paid off 8 times the invested amount. I presented the three opportunities to the subjects in random order.

Subjects could not invest less than zero, that is, pay to avoid a choice. They also could not invest more than their per-period virtual endowment of $100. A random-number generator calibrated to the objective probabilities determined the lotteries’ outcomes. Subjects received feedback about the outcomes immediately after their choices. The aim was to verify the experience of success in investments would not eliminate a possible negative effect of anti-market ideology on the willingness to invest, or on the amounts invested across opportunities.

Subjects made their investment choices in an incentive-compatible framework, because they received a scaled amount of the budget they had at the end of the three investment choices.

In the third stage of the experiment, I elicited subjects’ risk tolerance. Subjects faced two screens of lottery choices (Holt and Laury (2002)). Each choice included a degenerate lottery paying a positive outcome for sure (certainty equivalent), and a lottery paying a positive outcome with probability 1/2, and 0 otherwise. Importantly, the lottery choices were not framed as financial or investment opportunities, but as lottery choices. I did not consider the answers of 16 subjects, because they switched more than once in the lottery-choice task. The excluded subjects represent 4% of the overall sample. The elicitation of subjects’ risk aversion was also incentive compatible, because they knew one
line at random in each screen would be picked, and their pay would be a scaled amount of the certainty equivalent, or of the results of the lottery, based on their choice.

In the last stage of the experiment, I elicited subjects’ trust toward a series of institutions, which include the stock market, investment banks, commercial banks, family and friends, IT companies, and the Supreme Court. I presented the institutions to subjects in random order. Finally, at the end of the experiment, I explicitly asked subjects (i) if they thought the texts they read were ideologically biased, and (ii) if they thought the texts were biased against the stock market and investment banks. To test directly for possible demand effects, I also asked subjects their opinions about why they had to perform the set of tasks in the experiment after reading the text. The vast majority of subjects in both experimental conditions thought the aim was to test for the effect of information about the pros and cons of investing on subsequent decisions. No one in the primed condition referred to any ideological bias or manipulation in the information they received, consistent with the fact that subjects in the primed condition reported the text they read was not ideologically biased.

**Manipulation Check.** The manipulation check needs to verify that (i) subjects exposed to the prime condition had a more negative view of the stock market and of investment banks, which are involved in financial investments, and that (ii) they interpreted the advantages and disadvantages of investments in a similar way as subjects in the control condition. Otherwise, subjects across conditions might have inferred different information about the stock market from the text. For instance, primed subjects could have been more likely than the control group to infer stocks are too risky, and therefore would invest less.

I used three questions to construct the manipulation test, and I report the results in Figure 1. After subjects read the texts, I showed them a list of 10 words, 5 of which were negative and 5 of which were positive. The 10 words were as follows: useful, greedy, empowering, immoral, manipulative, trustworthy, beneficial, oppressive, costly, responsible. Subjects had to pick 3 words from the set of 10, which they thought best

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16Note the 10 words did not appear in any of the two texts subjects read, and hence subjects could not simply select the words based on having read them in the manipulation task.
described the stock market. In a second question, subjects saw the same 10 words, and picked the 3 words they thought best described investment banks.

Panel A of Figure 1 plots the number of negative words subjects associated with the stock market and with investment banks across experimental conditions. Out of 3 words they could choose, subjects in the control condition associated on average 1.5 negative words with the stock market, whereas subjects in the primed condition chose on average 1.8 words. A two-sided t-test for whether these means are equal rejects the null at the 1% level of significance (p=0.004). Both groups associated on average more negative words with investment banks than with the stock market – 1.9 negative words for the control group and 2.2 words for the primed group. A two-sided t-test for whether these means are equal rejects the null at the 5% level of significance (p=0.020). Hence, subjects in the anti-market-ideology condition associated more negative words with the stock market and with investment banks than subjects in the ideology-neutral condition.

In a third question, subjects faced an ordered multiple choice of seven elements, asking whether they thought the advantages or the disadvantages of investing in stocks prevail. The first choice said the advantages of investing were much more relevant, the seventh choice said the disadvantages were much more relevant, and the middle choice (fourth choice) said the advantages and the disadvantages of investing balanced each other. This question allows me to test whether subjects have a different perception of the informational content of the texts. For instance, subjects exposed to anti-market ideology might have inferred investing in stocks has more disadvantages than controls subjects. Moreover, the treated text might have appeared more concrete than the neutral text, because it named well-known institutions (Wall Street, Goldman Sachs). Subjects in the treated condition might have paid more attention to the content of the concrete text, and hence obtained different information about stock market investment than control subjects.

I find subjects across experimental conditions had a similar perception of the informational content of the texts. They perceived the advantages and disadvantages of investing in the stock market similarly. In Panel B of Figure 1, on the y axis, I plot the average choice for whether the stock market has more advantages than disadvantages, where 1 means the
advantages prevail substantially, 7 means the disadvantages prevail substantially, and 4 means the advantages and disadvantages balance each other. I cannot reject the null that the average choices are equal across the two groups at any plausible level of significance (p=0.250), and if anything, the point estimate for the prevalence of disadvantages is higher for subjects in the control condition than for those in the primed condition.

In Panel B, I also report the averages for an end-of-experiment question that asked subjects about the ideological bias in the texts they read. In this question, 7 means the text was ideologically biased against the stock market and investment banks, and 1 means the text was ideologically biased in favor of the stock market and investment banks, whereas 4 means the text was unbiased. Subjects in the primed condition did not think the anti-market-ideology text was biased against the stock market and investment banks (p=0.864), even if such text included cues that made them have a less favorable view of the stock market and investment banks than controls. Therefore, subjects did not seem to react consciously to the cues in the experimental manipulation.

4 Effect of Anti-market Ideology on Financial Decisions

In this section, I describe the effects of the anti-market ideology prime on financial decision-making. First, I describe the distributions of investment choices across groups non-parametrically. Second, I run a multivariate analysis in a linear-regression framework, which allows me to control for subjects’ demographic characteristics.

Sample characteristics. Table 1 describes the demographic characteristics of subjects across experimental conditions, as well as the variables I elicited in the experiment. The control condition contains 205 subjects, and the primed condition contains 204 subjects. Fifty-one percent of the subjects in each condition are men. The demographic characteristics I elicited – age bracket and education bracket – do not vary significantly across conditions. The average likelihood of investing across three opportunities ranges from 71% to 88% for control subjects, and from 61% to 85% for treated subjects. The average amount invested ranges from 28 to 48 for control subjects, and from 19 to 42 for treated subjects. The assessment of disadvantages and advantages of investing in stocks,
as well as subjects’ trust towards a set of formal and informal institutions, which I elicited after the experimental manipulation, do not vary across conditions. The trust toward family and friends is an exception, because it is higher for subjects in the primed condition.

**Non-parametric Analysis.** I first consider subjects’ decision to invest in the risky opportunities. Subjects faced a low-risk, a negative-NPV, and a high-risk opportunity. Panel A of Figure 3 plots the *extensive margin* of investment, that is, the binary decision of whether to invest or not. Across both experimental groups, the vast majority of subjects wanted to invest in the low-risk opportunity – 88% of those in the control group and 85% of those in the anti-market-ideology group. The average for the primed group is lower, but I cannot reject the null that the two averages are equal at plausible levels of significance (p=0.372). To the contrary, I detect significantly different decisions for the other opportunities. Seventy-five percent of control subjects and 66% of primed subjects accepted the negative-NPV opportunity. I reject that the averages are equal at the 5% level of significance (p=0.028). Similarly, 71% of the control subjects accepted the high-risk opportunity, whereas 60% of primed subjects accepted it, and the difference is significant at the 5% level of significance (p=0.026).

I move on to the *intensive margin* of investment, that is, the decision of how much money to invest in the financial opportunities out of the per-period virtual budget of $100. Figure 2 plots the distribution of the raw data across experimental groups. In Panel A, I show the distribution of invested amounts in the low-risk opportunity for subjects in the control and primed conditions. In Panel B, I report the distribution for the negative-NPV opportunity, and in Panel C, for the high-risk opportunity. Across all opportunities, evident spikes occur at salient values ($0, $50, and $100), but the spike at $0 increases, and those at $50 and $100 drop, as we move away from the low-risk opportunity. Comparing the choices across experimental groups within each opportunity, the distributions tend to move towards lower values in the anti-market-ideology condition compared to the ideologically-neutral condition in all three Panels. This difference in the overall distributions suggests subjects in the anti-market-ideology condition invested less money than subjects in the control condition across all three opportunities. Figure 8,
Figure 9, and Figure 10 of the Appendix plot the distribution of the raw data across experimental groups, and by demographics: across genders, across education groups, and across age groups.

Panel B of Figure 3 plots the average invested amount across financial opportunities and across experimental conditions. Across all three opportunities, subjects in the primed condition invested less money, on average, than those in the control condition. In the low-risk opportunity, control subjects invested on average $48, and primed subjects, $42. A test for whether these averages are equal has a p-value of 0.050. In the negative-NPV opportunity, the control group invested $31 and the primed group invested $24 (p= 0.009). In the high-risk opportunity, the groups invested $28 and $19, respectively (p=0.002). The averages in Figure 3 include the subjects that do not invest ($0). In the parametric analysis described below, I report separately the results when including and excluding these subjects.

Before controlling for any subject-level characteristics, the raw data suggest subjects in the anti-market-ideology condition were less likely to invest, and invested less money than subjects in the control condition.

**Parametric Analysis.** Recruiting subjects on mTurk gives me a varied pool of subjects in terms of demographic characteristics. I therefore exploit the varied demographic characteristics of the recruited subjects to test for the effect of anti-market ideology on investment decisions in a multivariate setting.

I first analyze the likelihood of investing in each opportunity by estimating the following linear probability model\(^\text{17}\):

\[
\text{Invest}_{i,n} = \alpha + \beta \times \text{AntiMarketIdeology}_i + X'_i \times \delta + \eta_a + \eta_e + \eta_g + \epsilon_{iae},
\]

\(^\text{17}\)Results are similar if I compute the marginal effects after estimating a probit specification. See Table 7 in the Appendix.
specifications in the paper keep constant subjects’ age group ($\eta_a$), education group ($\eta_e$), gender ($\eta_g$), as well as a set of attitudes and beliefs elicited throughout the experiment. These attitudes and beliefs ($X$) include (i) a dummy for whether subjects thought the disadvantages of investing in stocks are more relevant than the advantages, (ii) subjects’ elicited trust in the stock market on a scale from 1 to 7, (iii) subjects’ elicited trust in investment banks on a scale from 1 to 7, and (iv) subjects’ elicited trust in family and friends on a scale from 1 to 7. The results throughout the paper are similar if I change the set of observables at the subject level.

Columns (1)-(3) of Table 2 report the results for estimating equation (2). In column (1), being exposed to the anti-market-ideology prime reduces the willingness to invest in the low-risk opportunity by 4.4 percentage points, but this effect is not statistically different from zero at any plausible level of significance. In columns (2)-(3), the anti-market-ideology prime reduces the willingness to invest in both the negative-NPV and the high-risk opportunities by 10 percentage points, which is about 13% and 14% of the respective averages in the control group. These estimated effects are different from zero at the 5% level of significance.

I then report the results for a linear regression of the amounts invested in each opportunity on the primed experimental condition and the observables at the subject level, as in equation (2)\(^{18}\):

$$
\text{AmountInvested}_{i,n} = \alpha + \beta \times \text{AntiMarketIdeology}_i + X_i' \times \delta + \eta_a + \eta_e + \eta_g + \epsilon_i. \quad (2)
$$

Columns (4)-(6) of Table 2 include all subjects, whereas in columns (7)-(9), I exclude subjects that did not invest any money. The last specification only looks at the intensive margin of investment. The anti-market-ideology prime reduces the amount subjects invested in the low-risk opportunity by $6.4, which is about 13% of the average investment by the control group ($48.1), or one-fifth of a standard deviation of the investments by the control group. The effect decreases to $5.1 among those who invested (9% of the

\(^{18}\)Unreported results are similar if I estimate tobit specifications that allow for the possibility that subjects wanted to invest less than zero (pay to avoid a choice), or more than $100. See Table 7 in the Appendix.
I also detect a negative effect of anti-market ideology when I look at the amounts invested in the other opportunities, and the size of the effects is larger. Columns (5) and (8) show the prime reduces the amount invested in the negative-NPV opportunity by $7.8 and $6.1, that is, 25% and 15% of the control-group average investments. These effects are about one-fourth of a standard deviation of the average investment by the control group. Columns (6) and (9) report the results for the high-risk financial opportunity, when including and excluding those who decide not to invest. The negative effects of anti-market ideology are $9.1 and $8.9, that is, 33% and 23% of the control-group average investment. These effects fall between one-fourth and one-third of a standard deviation of the average investment by the control group.

Overall, the anti-market-ideology prime reduces the willingness to invest and the amount invested in risky financial opportunities, both in the raw data, and after keeping constant subjects’ demographic characteristics and other observables.

5 Who Reacts to Anti-market Ideology? Heterogeneous Effects

The results so far are the average effects in the population. But the crucial advantage of mTurk compared to college-student laboratories is the large variation in the demographic characteristics of subjects. This variation allows me to ask whether demographic groups react differently to the salience of anti-market ideology. Indeed, I find the effects of anti-market ideology vary dramatically across demographics.

Effect across genders. First, I find women reacted significantly more to the anti-market-ideology cues than men, even after controlling for other demographic characteristics. Table 3 reports the results when estimating the average effects separately by gender. I only report the coefficient attached to the anti-market-ideology condition, but all regressions include the full set of controls in Table 2, except gender. In columns (1)-(3) of Table 3, I find the prime has insignificant effects on men’s willingness to invest, and
the sign of the estimated coefficients varies across opportunities. Instead, the prime has a negative and significant effect on women’s willingness to invest, which ranges between 11 and 25 percentage points. The effect is economically and statistically significant across all opportunities.

I detect a similar qualitative pattern when I look at the amount invested by gender. Women react significantly to the prime, whereas men do not. This result holds across all three opportunities, and when including (columns (4)-(6)) and excluding (columns (7)-(9)) those who invest no money. For the case of the amount invested, the estimated coefficients for the male subsample are negative and not negligible in size. One reason for detecting no statistical significance could be that my test does not have enough power to reject the null hypothesis that the coefficient is zero. Even in this case, the magnitude of the effect of the ideology prime on men would be substantially lower than the magnitude of the effect on women.

**Effect across education groups.** I move on to test for the effects of anti-market ideology by education groups. In Table 4, I split the sample between subjects without any college education, and subjects with some college education or higher levels of education. I report only the coefficient attached to the anti-market-ideology condition, but each regression includes the full set of controls in Table 2, except subjects’ education level. The more educated subjects reacted more to the anti-market ideology primes, whereas the effects are close to zero economically and statistically for less educated subjects.

In columns (1)-(3) of Table 4, I look at the decision to invest any money across opportunities. I do not detect effects of different sizes across education groups when looking at the low-risk opportunity, but I find a higher negative effect of anti-market ideology on more educated subjects’ decision to invest in the negative-NPV and the high-risk opportunities. These effects amount to 13.2 and 13.0 percentage points, which both are about 17% of the average control group’s decision to invest in each opportunity. The effect I estimate for less educated subjects is not negligible in size, but it is not statistically different from zero.
For the amount invested across opportunities, I find more educated subjects were the only ones that reacted negatively to the anti-market ideology prime. In columns (4)-(9), I show anti-market ideology reduces the amounts they invested in all opportunities, whereas it does not affect the less educated subjects’ invested amounts either economically or statistically.

**Effect across age groups.** In Table 5, I test whether the effect of anti-market ideology on investment decisions varies across age groups, after controlling for all other observables at the subject level. I find older subjects reacted more to the anti-market-ideology primes, even if the differences across age groups are less stark than across genders and across education groups.

In columns (1)-(3) of Table 5, I find the size of the effects for older subjects are larger than the size for younger subjects, but I detect no statistical significance of the effects. In columns (4)-(9), I look at the amounts invested across age groups. When all subjects enter the samples, older subjects invest between $11.7 and $17.0 less when exposed to the prime, compared to older subjects in the control group. Instead, younger subjects exposed to the prime invest only slightly less than younger subjects in the control group – between $2.0 and $5.9 dollars less – and none of these differences is statistically different from zero. In columns (7)-(9), I find older subjects in the primed group invest significantly less than those in the control group, whereas younger subjects in the primed group invest only slightly less than those in the control group.

Overall, I conclude that substantial heterogeneity exists in the reaction to the salience of anti-market ideology across demographic groups. In particular, women, more educated subjects, and older subjects appear to drive the baseline negative effect of anti-market ideology on investment decisions I document in Table 2.

\[Note\ I\ cannot\ reject\ the\ null\ that\ the\ coefficient\ in\ column\ (8)\ is\ zero\ for\ the\ older-subjects\ group,\ which\ corresponds\ to\ the\ amount\ invested\ in\ the\ negative-NPV\ opportunity.\]
6 Which Channels Drive the Effects?

The analysis so far has not discussed the economic mechanisms that might mediate the negative effect of anti-market ideology on financial decisions. In this section, I propose direct tests for two possible channels, namely, risk aversion and context-dependent beliefs.

A Risk Aversion

First, I consider risk aversion. The salience of anti-market ideology might increase the risk aversion of subjects, and hence decrease their willingness to invest and the amount they want to invest. To the best of my knowledge, no field or laboratory evidence that anti-market ideology affects risk attitudes exists. The prime might also induce a negative state of mind, which would increase subjects’ risk aversion, and hence affect their financial decisions. For instance, the prime might remind subjects of the personal hurdles they faced during the financial crisis, when the discourse of the Occupy Wall Street movement obtained substantial media coverage.\(^{20}\)

I find the salience of anti-market ideology did not affect subjects’ risk aversion. I elicited subjects’ risk aversion using two sets of Holt & Laury choices between certainty equivalents and lotteries. In each set, the measure of risk aversion I construct is the number of certainty-equivalent choices the subject selected. In Figure 4, I plot the distributions of the numbers of certain choices subjects selected across experimental conditions for both sets of choices. Comparing the distributions, noting any stark differences across experimental conditions is difficult. To assess whether the differences are statistically different from zero, I regress each measure of risk aversion on the anti-market-ideology prime indicator, and on the subjects’ demographics characteristics included in Table 2. In untabulated results, I find the coefficients associated with the anti-market-ideology prime condition have opposite signs for the two measures of risk aversion. They are statistically indistinguishable from zero. These results are similar in regressions that do not include

\(^{20}\)The higher sensitivity of older subjects to the anti-market cues helps address this alternative explanation, because an emerging literature on experience effects shows that younger individuals are more sensitive to recently experienced shocks than older individuals (e.g., Malmendier and Nagel (2015)). If reminding the recently experienced financial crisis drove my results, we would therefore expect younger subjects to be more sensitive to the anti-market-ideology cues than older subjects.
demographic controls, where the estimated coefficients are -0.106 (s.e. 0.335) and 0.171 (0.313), as well as in regressions with demographic controls, with coefficients -0.096 (s.e. 0.336) and 0.173 (s.e. 0.315). Risk aversion can hardly explain the different attitudes of treated and control subjects towards investing.

B Negative Stereotypes and Context-dependent Beliefs

A second potential channel is context-dependent beliefs. Anti-market ideology might make subjects expect lower payoffs than what the objective probabilities suggest if they make a financial investment. This channel is plausible in this setup, because subjects in the anti-market ideology condition were more likely to pick negative words to describe the stock market and investment banks than control subjects from the same list of words. Such negative words can be interpreted as more negative types that constitute treated subjects’ stereotype about the financial sector (Bordalo, Coffman, Gennaioli, and Shleifer (2014)). Following Bordalo, Gennaioli, and Shleifer (2015), expectations regarding future states might be interpreted as stereotypes regarding the states that will follow an investment decision. Diagnostic expectations would make subjects overweigh the likelihood of representative future states, and hence overreact to news that affect the set of representative states.

Experimental manipulation and context-dependent beliefs. As in Bordalo, Gennaioli, and Shleifer (2015), I call \( E_{t-1}(\omega_{t+1}) \) the subject’s expectation about state \( \omega_{t+1} \), say, the overall income she will get from the experiment, based on her information at time \( t - 1 \). Suppose the realization of a state can take three values: \( l < m < h \). The random manipulation of the context subjects face might be setting their stereotypes regarding the payoffs of financial investments. For subjects in the anti-market ideology condition, bad payoffs are more representative of financial investments than for subjects in the control condition. Control subjects would equally expect good or bad payoffs, and hence good or bad states:

\[
E_{t-1}(\omega_{t+1}|treated) = l < m = E_{t-1}(\omega_{t+1}|control). \quad (3)
\]

It follows from this framework that treated subjects are less likely to invest on average,
and they invest less money than control subjects, because the reference comparison group for payoffs includes a worse payoff for treated subjects than for control subjects. The baseline results from the experiment are in line with this prediction.

**Predicted reactions to news by treated and control subjects.** The framework also has a unique, asymmetric prediction regarding the reaction of treated and control subjects to the same news. In Bordalo, Gennaioli, and Shleifer (2015), individuals start with a stereotype regarding possible future states of the world. As subsequent states of the world realize, individuals react to news regarding future states of the world that do not conform with their stereotype.\(^{21}\)

Subjects in the anti-market-ideology condition should not react to bad news about the payoffs they face when making decisions regarding subsequent investments. This prediction stems from the fact that primed subjects are more likely to expect bad payoffs to begin with. Facing bad payoffs is consistent with the stereotype they had. Bad news do not change the type of future states that are representative for treated subjects. Instead, subjects in the control condition should react to news about bad payoffs by reducing their investment in subsequent opportunities.

Suppose bad news arises at time \(t\), that is, \(\omega_t = l\). For treated subjects, \(E_t(\omega_{t+1}|treated) = l = E_{t-1}(\omega_{t+1}|treated)\). They will not react to the news at time \(t\). Instead, for control subjects, \(E_t(\omega_{t+1}|control) < m = E_{t-1}(\omega_{t+1}|control)\), because \(E_t(\omega_{t+1}|control)\) will be some combination of \(m\) and \(l\). Hence, control subjects will react by investing less as their expectations about future payoffs decrease. Facing bad news makes bad future states more representative for control subjects, whose ex-ante representative comparison group included both good and bad future states.

In Figure 5, I plot the predicted distributions of amounts invested in the third opportunity based on the outcome in the second opportunity for control subjects (Panel A) and treated subjects (Panel B). Note these predicted distributions are mere examples, and should not be interpreted quantitatively. To construct the figures, I first sample randomly from a left-skewed beta distribution that approximates well the true distribution of

\(^{21}\)This reaction adds to the reaction to news individuals would display even absent a stereotype, and hence might represent an overreaction compared to the case of rational expectations.
invested amounts in the second investment for control and treated subjects (dotted, black lines). In Panel A, the distribution has coefficients $\alpha = 1$ and $\beta = 1.8$. In Panel B, it has coefficients $\alpha = 1$ and $\beta = 4.5$. Suppose subjects experience the bad payoff in the second investment. In Panel A, control subjects will want to invest less in the third investment. If the extensive margin is not affected, the distribution of invested amounts in the third investment will squeeze toward the y-axis, and hence will display larger left skewness than the distribution of invested amounts in the second investment (solid, black line). In Panel B, treated subjects will be unaffected by the bad news, and hence the distribution of invested amounts in the third investment will be the same as in the second investment (solid, black line).

Now suppose good news arrives at time $t$; that is, $\omega_t = h$. In the framework described above, both sets of subjects should react to good payoffs by increasing their investment in subsequent opportunities. For treated subjects, $E_t(\omega_{t+1}|treated) > l = E_{t-1}(\omega_{t+1}|treated)$, because $E_t(\omega_{t+1}|treated)$ will be a combination of $l$ and $h$. For control subjects, $E_t(\omega_{t+1}|control) > m = E_{t-1}(\omega_{t+1}|control)$, because $E_t(\omega_{t+1}|control)$ will be a combination of $m$ and $h$.

Going back to Figure 5, in Panel A, control subjects will want to invest more in the third investment than they did in the second investment. If the extensive margin is not affected, the distribution of the amounts invested in the third opportunity will display lower skewness than the distribution of the amounts invested in the second opportunity (dashed, red line). In Panel B, we have the same prediction for treated subjects, and hence the distribution of the amounts invested in the third opportunity will display lower skewness than the distribution of the amounts invested in the second opportunity (dashed, red line).

I can test for these predictions, because subjects to perform three investment decisions subsequently. After each decision, I told subjects whether their investment succeeded or failed, and hence subjects learned whether they faced a bad or a good payoff before making the following investment decision. I track the reactions of control and treated subjects across subsequent investment decisions, based on whether they faced a bad or a
good payoff in the previous investment.

Before describing the results, it is important to discuss the extent to which the framework of Bordalo, Gennaioli, and Shleifer (2015) applies to my experimental setup. Their crucial assumptions are the process subjects face is not a deterministic path, and the outcomes are serially correlated across states. Otherwise, their formulation of expectations degenerates into rational expectations. These conditions are plausible in the experiment if we assume subjects care about the overall income they will get at the end of the experiment. The income process is determined stochastically based on subjects’ subsequent decisions in each investment opportunity, so that the amount of income after each decision depends on the amount of income after the previous choice.

**Results.** I show graphical evidence in Figure 5, which plots the actual distributions of amounts invested across opportunities for control subjects (Panel C) and treated subjects (Panel D). The realized distributions track the predicted qualitative changes in distributions described above. In Panel C, control subjects invested less in the third investment if they experienced bad news (solid, black line) compared to the amounts they invested in the second investment (dotted, black line). Control subjects invested more in the third investment if they experienced good news (dashed, red line). In Panel D, the distribution of treated subjects’ amounts invested in the third opportunity conditional on bad news tracks very closely the distribution of amounts invested in the second opportunity. Instead, treated subjects invested more in the third investment if they experienced good news (dashed, red line).

To assess whether the distributions are statistically different from one other, I perform a set of non-parametric two-sample Kolmogorov-Smirnov tests for whether the corresponding distributions of amounts invested in subsequent opportunities are equal. These non-parametric tests are more appropriate than tests on specific parameters of the distributions, such as the means or the medians, because the amounts invested are truncated at $0 and $100. The distributions are not allowed to freely translate to the left or to the right, and hence their shapes should change if the predictions about subjects’ reactions go through, as we see in Figure 5.
For each test, I look at the corresponding samples of amounts invested by the same subjects in the third and the second opportunities, based on the quality of the payoff that was salient to the subjects before they decide on the third opportunity. I also look at both the full sample, and the samples split by experimental condition. I summarize the results for these tests in Table 6. Column (1) of Table 6 reports the predictions based on the framework of Bordalo, Gennaioli, and Shleifer (2015), as discussed above. Column (2) reports the estimated statistic, and column (3) reports the p-value. The p-value gives the probability the two CDFs would be as far apart as in the data if the two samples were sampled randomly from the same population. I follow the conventional levels to interpret the statistical significance of the differences across the distributions.

In Panel A of Table 6, I focus on the subsample of subjects that are exposed to the best payoff after the second investment; that is, they gain. For all groups of subjects – all subjects, subjects in the treated condition, and subjects in the control condition – the distributions of amounts invested in the two opportunities should be different, because both treated and control subjects should react to the good news by investing more in the subsequent opportunity. I do find the null of equal distributions is rejected in the full sample as well as within the experimental conditions.

In Panel B of Table 6, I look at the subsample of subjects that are exposed to the worst payoff after the second investment; that is, they fail. As discussed above, the predictions for the two experimental conditions are the opposite in this subsample. Treated subjects should not react to the bad news given by the worst payoff, because they expected low payoffs to begin with. Consistently, I can only reject the null above the 89% level of significance. Control subjects, instead, should react to the bad news by investing less in the third investment opportunity. The test statistic, which captures the largest difference across the two distributions is substantially higher than for the subjects in the treated group (0.143 > 0.097), but I fail to reject the null of equal distributions at conventional levels of significance.

Overall, the unique predictions from the context-dependent-beliefs framework of Bordalo, Gennaioli, and Shleifer (2015) are supported graphically, and all but one of them go
through in non-parametric tests that allow assessment of the statistical significance of the differences across distributions.

7 Conclusions

To the best of my knowledge, this paper is the first to test for the effect of anti-market ideology on economic outcomes. The recent waves of anti-market ideology after the 2008 collapse of Lehman Brothers make understanding the causal effect of ideology on financial decision-making especially important.

I manipulated exposure to anti-market ideology in a controlled environment. Exposure to anti-market ideology reduces subjects’ willingness to invest in risky opportunities, as well as the amount of money subjects invest in the opportunities. Because I recruited a varied pool of subjects, I can test for the reaction to anti-market ideology across demographic groups. Women, more educated subjects, and older subjects drive the effects, even after controlling for other demographic characteristics.

Risk aversion does not mediate the effects, whereas the results are consistent with context-dependent beliefs (Bordalo, Gennaioli, and Shleifer (2015)). Anti-market-ideology increases the number of negative words subjects associate with the stock market and investment banks. The prime might have set the context in which subjects made decisions, by manipulating the representativeness of the worst payoff in financial investments. I propose unique predictions from the framework in Bordalo, Gennaioli, and Shleifer (2015) as adapted to my experiment, and I find evidence in support of these predictions. Because the framework was not available before I ran the experiment in this paper, the possibility that demand effects explain these results is quite remote.

The results in this paper open a set of relevant questions for future research in Economics and Finance. Does anti-market ideology affect the decisions of economic agents in domains different from financial investments? What are the channels through which ideology affects economic outcomes? Behavioral biases are commonly more prevalent among less sophisticated agents. But more sophisticated agents deviate from neoclassical decision-
making because of anti-market ideology.
References

Aristotle. Oikonomika. 320BC.


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Panel A of Figure 1 reports the average number of negative words subjects associate with the stock market and investment banks across experimental conditions, after the manipulations. For each institution, subjects face 10 words, half of which are negative, and half positive. Subjects have to pick 3 words they associate with the stock market and with investment banks out of the 10-word pool.

Panel B of Figure 1 reports the average score on a scale from 1 to 7 for whether subjects thought the text they read in the manipulation stage emphasized the disadvantages of the stock market more than its advantages (left in each condition), and the average score for whether they thought the text was biased against the stock market and investment banks (7), or in favor of them (1). The first question was asked after the manipulations. The second question was asked after the experiment.
Panels A, B, and C of Figure 2 plot the distribution of subjects based on the amount of money they invested across three opportunities, and across experimental conditions. Subjects were provided with a virtual endowment of $100 before making each investment choice. They were paid a scaled amount of the amount of money they had at the end of the experiment.
Figure 3: Average Willingness to Invest and Amount Invested by Experimental Condition

A. Average Willingness to Invest by Experimental Condition

Panel A of Figure 3 plots the average willingness to invest (extensive margin of investment) across three risky opportunities and across experimental conditions. Pane B of Figure 3 plots the average amount of money invested (intensive margin of investment) in each opportunity across experimental conditions. Subjects that invested nothing are included.
Figure 4: **Anti-market Ideology and Risk Aversion**

A. Number of certain choices in first set of 15 Holt & Laury choices

Panel A of Figure 1 plots the distribution of the number of certain choices subjects made in the first set of 15 Holt & Laury choices between a certainty equivalent and a lottery, by experimental condition. Panel B of Figure 4 plots the distribution of the number of certain choices subjects made in the second set of 15 Holt & Laury choices between a certainty equivalent and a lottery, by experimental condition. All the choices were elicited in an incentive-compatible fashion, because the subjects knew they would be paid one of the choices at random for each set of choices.
Panels A and B of Figure 5 plot the predicted densities of the amounts invested by subjects after knowing the realized payoff of the previous investment. The dotted, black lines are obtained by sampling randomly from beta distributions that mimick the true distributions of the amounts invested in the previous opportunity. In Panel A, the distribution has coefficients $\alpha = 1$ and $\beta = 1.8$. In Panel B, it has coefficients $\alpha = 1$ and $\beta = 4.5$. The solid, black and dashed, red distributions are obtained based on the qualitative predictions on the reaction of subjects across conditions to good and bad news after the previous opportunity. Note the distributions provide a qualitative comparison of predicted amounts invested across investments and experimental conditions, and should not be interpreted quantitatively. All predicted densities are smoothed with an Epanechnikov kernel with bandwidth 0.05.

Panels C and D of Figure 5 plot the estimated actual densities of the amounts subjects invested in the previous opportunity (dotted, black lines) and the subsequent opportunity, in case of bad news (solid, black lines) and good news (dashed, red lines). Both Panels estimate the kernel density of the amounts invested using an Epanechnikov kernel with bandwidth 10.
Table 1: Summary Statistics

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<td>Min.</td>
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</table>

Table 1 reports the summary statistics at the subject level across experimental conditions. Observed variables include a set of demographic characteristics, the investment decisions across opportunities, and other observables elicited during the experiment.
Table 2: Effect of Anti-market Ideology on Financial Decisions

<table>
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<td>-0.937</td>
<td>0.755</td>
<td>1.410</td>
<td>-0.879</td>
<td>-0.372</td>
</tr>
<tr>
<td>Market</td>
<td>0.014</td>
<td>0.019</td>
<td>0.020</td>
<td>1.305</td>
<td>1.192</td>
<td>1.216</td>
<td>1.301</td>
<td>1.382</td>
<td>1.550</td>
</tr>
<tr>
<td>Trust in Investment</td>
<td>-0.022</td>
<td>0.021</td>
<td>-0.010</td>
<td>-2.192</td>
<td>-0.817</td>
<td>-1.588</td>
<td>-1.242</td>
<td>-2.161</td>
<td>-1.713</td>
</tr>
<tr>
<td>Banks</td>
<td>0.013*</td>
<td>0.018*</td>
<td>0.019</td>
<td>1.219*</td>
<td>1.114</td>
<td>1.135</td>
<td>1.225</td>
<td>1.235</td>
<td>1.419</td>
</tr>
<tr>
<td>Trust in Family and</td>
<td>0.047</td>
<td>0.035</td>
<td>0.016</td>
<td>1.558</td>
<td>2.287</td>
<td>1.577</td>
<td>-0.714</td>
<td>1.674</td>
<td>1.820</td>
</tr>
<tr>
<td>Friends</td>
<td>0.013***</td>
<td>0.018*</td>
<td>0.019</td>
<td>1.226</td>
<td>1.120***</td>
<td>1.417</td>
<td>1.271</td>
<td>1.321</td>
<td>1.549</td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.883</td>
<td>0.756</td>
<td>0.707</td>
<td>48.093</td>
<td>31.385</td>
<td>27.532</td>
<td>54.470</td>
<td>41.510</td>
<td>38.924</td>
</tr>
<tr>
<td>Observations</td>
<td>409</td>
<td>409</td>
<td>409</td>
<td>409</td>
<td>409</td>
<td>409</td>
<td>355</td>
<td>289</td>
<td>268</td>
</tr>
<tr>
<td>R²</td>
<td>0.05</td>
<td>0.04</td>
<td>0.03</td>
<td>0.09</td>
<td>0.05</td>
<td>0.05</td>
<td>0.10</td>
<td>0.06</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Table 2 reports the coefficients for estimating OLS regressions of the outcome indicated on top of each column, on the set of controls listed in the left column. LR refers to the low-risk investment opportunity, NPV<0 refers to the negative net-present-value opportunity, and HR refers to the high-risk opportunity. Mean Control Group is the average of the outcome variable for the excluded category, that is, the subjects in the control condition. Standard errors are in italic. Statistical significance is reported as follows: *10%, **5%, ***1%.
Table 3: Who Reacts to Anti-market Ideology? Gender

<table>
<thead>
<tr>
<th></th>
<th>Decision to Invest</th>
<th>Amount Invested</th>
<th>Amount Invested (if &gt;0)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LR</td>
<td>NPV&lt;0</td>
<td>HR</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-market Ideology</td>
<td>0.016</td>
<td>0.004</td>
<td>-0.026</td>
</tr>
<tr>
<td>Condition</td>
<td>0.046</td>
<td>0.062</td>
<td>0.066</td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.861</td>
<td>0.730</td>
<td>0.678</td>
</tr>
<tr>
<td>Observations</td>
<td>219</td>
<td>219</td>
<td>219</td>
</tr>
<tr>
<td>R²</td>
<td>0.04</td>
<td>0.04</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>0.049**</td>
<td>0.067***</td>
<td>0.068**</td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.911</td>
<td>0.789</td>
<td>0.744</td>
</tr>
<tr>
<td>Observations</td>
<td>190</td>
<td>190</td>
<td>190</td>
</tr>
<tr>
<td>R²</td>
<td>0.11</td>
<td>0.07</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Table 3 reports the coefficients for estimating OLS regressions of the outcome indicated on top of each column, on the anti-market ideology condition and the set of controls in Table 2, except subjects’ gender. LR refers to the low-risk investment opportunity, NPV<0 refers to the negative net-present-value opportunity, and HR refers to the high-risk opportunity. Mean Control Group is the average of the outcome variable for the excluded category, that is, the subjects in the control condition. Standard errors are in italic. Statistical significance is reported as follows: *10%, **5%, ***1%.
Table 4: **Who Reacts to Anti-market Ideology? Education**

<table>
<thead>
<tr>
<th>Decision to Invest</th>
<th>Amount Invested</th>
<th>Amount Invested (if &gt;0)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LR NPV&lt;0 HR</td>
<td>LR NPV&lt;0 HR</td>
</tr>
<tr>
<td>No College Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-market Ideology Condition</td>
<td>-0.046 -0.090 -0.075</td>
<td>-2.504 -4.214 -6.194</td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.054 0.071 0.075</td>
<td>4.561 4.429 4.048</td>
</tr>
<tr>
<td>Observations</td>
<td>187 187 187</td>
<td>39.326 27.584 23.011</td>
</tr>
<tr>
<td>R²</td>
<td>0.09 0.05 0.04</td>
<td>0.09 0.08 0.06</td>
</tr>
<tr>
<td>Some College Education or higher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-market Ideology Condition</td>
<td>-0.052 -0.132 -0.130</td>
<td>-11.034 -12.994 -12.717</td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.043 0.061** 0.063**</td>
<td>4.364** 3.792*** 4.246***</td>
</tr>
<tr>
<td>Observations</td>
<td>222 222 222</td>
<td>54.819 34.302 31.000</td>
</tr>
<tr>
<td>R²</td>
<td>0.08 0.07 0.05</td>
<td>0.12 0.09 0.07</td>
</tr>
</tbody>
</table>

Table 4 reports the coefficients for estimating OLS regressions of the outcome indicated on top of each column, on the anti-market ideology condition and the set of controls in Table 2, except subjects’ education. LR refers to the low-risk investment opportunity, NPV<0 refers to the negative net-present-value opportunity, and HR refers to the high-risk opportunity. Mean Control Group is the average of the outcome variable for the excluded category, that is, the subjects in the control condition. Standard errors are in italic. Statistical significance is reported as follows: *10%, **5%, ***1%.
Table 5: Who Reacts to Anti-market Ideology? Age

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
<th>(8)</th>
<th>(9)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LR</td>
<td>NPV&lt;0</td>
<td>HR</td>
<td>LR</td>
<td>NPV&lt;0</td>
<td>HR</td>
<td>LR</td>
<td>NPV&lt;0</td>
<td>HR</td>
</tr>
<tr>
<td>35 years old or younger</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-market Ideology Condition</td>
<td>-0.037</td>
<td>-0.078</td>
<td>-0.090</td>
<td>-1.950</td>
<td>-5.324</td>
<td>-5.904</td>
<td>-0.517</td>
<td>-4.256</td>
<td>-4.869</td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.878</td>
<td>0.782</td>
<td>0.714</td>
<td>45.932</td>
<td>31.517</td>
<td>26.129</td>
<td>52.341</td>
<td>40.287</td>
<td>36.581</td>
</tr>
<tr>
<td>Observations</td>
<td>295</td>
<td>295</td>
<td>295</td>
<td>295</td>
<td>295</td>
<td>295</td>
<td>254</td>
<td>217</td>
<td>195</td>
</tr>
<tr>
<td>R²</td>
<td>0.06</td>
<td>0.05</td>
<td>0.04</td>
<td>0.09</td>
<td>0.06</td>
<td>0.04</td>
<td>0.09</td>
<td>0.07</td>
<td>0.05</td>
</tr>
<tr>
<td>Above 35 years old</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Control Group</td>
<td>0.897</td>
<td>0.690</td>
<td>0.690</td>
<td>53.569</td>
<td>31.052</td>
<td>31.086</td>
<td>59.750</td>
<td>45.025</td>
<td>45.075</td>
</tr>
<tr>
<td>Observations</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>R²</td>
<td>0.13</td>
<td>0.10</td>
<td>0.08</td>
<td>0.19</td>
<td>0.14</td>
<td>0.15</td>
<td>0.22</td>
<td>0.14</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Table 5 reports the coefficients for estimating OLS regressions of the outcome indicated on top of each column, on the anti-market ideology condition and the set of controls in Table 2, except subjects' age. LR refers to the low-risk investment opportunity, NPV<0 refers to the negative net-present-value opportunity, and HR refers to the high-risk opportunity. Mean Control Group is the average of the outcome variable for the excluded category, that is, the subjects in the control condition. Standard errors are in italic. Statistical significance is reported as follows: *10%, **5%, ***1%. 
Table 6: **Context-dependent Beliefs and Reaction to Salience of Payoffs**

<table>
<thead>
<tr>
<th>Panel A. Good Payoff in previous Investment</th>
<th>Prediction</th>
<th>(2) K-S statistic</th>
<th>(3) p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All subjects</td>
<td>Reject</td>
<td>0.1679</td>
<td>0.001***</td>
</tr>
<tr>
<td>Anti-market Ideology group</td>
<td>Reject</td>
<td>0.1591</td>
<td>0.071*</td>
</tr>
<tr>
<td>Control group</td>
<td>Reject</td>
<td>0.1831</td>
<td>0.017**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B. Bad Payoff in previous Investment</th>
<th>Prediction</th>
<th>(2) K-S statistic</th>
<th>(3) p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All subjects</td>
<td>Unclear</td>
<td>0.1111</td>
<td>0.376</td>
</tr>
<tr>
<td>Anti-market Ideology group</td>
<td>Fail to reject</td>
<td>0.0972</td>
<td>0.886</td>
</tr>
<tr>
<td>Control group</td>
<td>Reject</td>
<td>0.1429</td>
<td>0.545</td>
</tr>
</tbody>
</table>

Table 6 reports the results of Kolmogorov-Smirnov two-sample tests for the equality of distributions. In each Panel, I test whether the distribution of the amounts invested in the third opportunity by the group listed on the left is equal to the distribution of the amounts the same groups invested in the second opportunity. In Panel A, I only look at subjects that were exposed to the good payoff after the second investment opportunity, that is, they gained before deciding on the subsequent investment. In Panel B, I only look at subjects that were exposed to the bad payoff after the second investment opportunity, that is, they failed before deciding on the subsequent investment. Column (1) describes the prediction regarding the result of the tests based on the framework of Bordalo et al. (2015), as discussed in section 6.B of the main paper. Column (2) reports the Kolmogorov-Smirnov statistic for a two-sided test of the equality of the distributions of amounts invested across the second and third investment opportunities. Column (3) reports the estimated p-value associated with the test statistics, that is, the probability the two CDFs would be as far apart as in the data if the two samples were sampled randomly from the same population. Statistical significance is reported as follows: *10%, **5%, ***1%.
Online Appendix
Pros and Cons of Investing in Stocks

In a modern economy, most companies are held by private citizens as opposed to the public sector. This free disposal of ownership rights enables companies to sell their shares in the stock market to finance their activities. Companies, and especially large companies, rely on investment banks to place their shares on the market.

The stock market allows every participant to trade any shares. These shares represent an investment opportunity for households that do not want or have the means to start a business themselves. They can invest in a company, and share the risks of its activities as well as the gains. Often, households rely on experts to obtain a professional management of their investments in exchange for a fee.

Advantages of investing in stocks

Stocks have a number of advantages which make them a desirable investment:

- Stocks have the potential for delivering very large gains.
- The potential loss from stock purchased with cash is limited to the total amount of the initial investment.
- Most stocks are very liquid: they can be bought and sold quickly at their fair price.
- Although past performance is not a guarantee of future performance, stocks have historically offered very high returns in relation to other investments.

Disadvantages of investing in stocks

Stocks have some distinct disadvantages of which individual investors should be aware:

- Stock prices are risky and volatile. Prices can be erratic, rising and declining quickly, often in relation to companies’ policies, which individual investors do not influence.
- Stocks represent ownership of a business, and hence investors are the last to get paid, like all other owners. A company must first pay its employees, suppliers, creditors, maintain its facilities and pay its taxes. Any money left can then be distributed among its owners.
- While investors are part of the group of owners of the company, they do not enjoy all of the rights and privileges that the owners of a private business do.
- Investors in a public company may not have access to all information about the company. This limited information can sometimes worsen the quality of investment decisions.
Pros and Cons of Investing in Wall Street

In a capitalistic economy, most corporations are not controlled by public interest organizations, but by private interest groups. This neoliberal approach to ownership enables corporations to sell their shares in Wall Street to finance their activities. Corporations, and especially big corporations, pay fees to investment banks like Goldman Sachs to place their shares on Wall Street and sell them to investors.

In Wall Street, investors can trade shares of big corporations. These shares are an investment opportunity for individuals that do not want or have money to start a business themselves. These individuals can finance big corporations with their savings, and share the risks of Wall Street CEOs’ activities as well as the gains. Wall Street financial advisors ask investors to pay fees in exchange for the promise of maximizing the gains from investments.

Below is a non-exhaustive list of the pros and cons of investing in stocks.

1. Wall Street stocks: advantages

   - Wall Street stocks have the potential for delivering very large gains.
   - The potential loss from stock purchased with cash is limited to the total amount of the initial investment.
   - Most Wall Street stocks are very liquid: they can be bought and sold quickly at the market price prevailing at each point in time.
   - Although past performance is not a guarantee of future performance, stocks have historically offered very high returns in relation to other investments.

2. Wall Street stocks: disadvantages

   - Stock prices are risky and volatile. Prices can be erratic, rising and declining quickly, often in relation to managerial decisions of the CEOs of big corporations, which individual investors cannot control.
   - Stocks represent ownership of a business, and hence investors are the last to get paid, like all other owners. A corporation must first pay its employees, suppliers, creditors, maintain its facilities and pay its taxes. Any money left can then be distributed among its owners.
   - While investors are owners of small fraction of big corporations, they do not enjoy all of the rights and privileges that the owners of a private business do.
   - Investors in a big corporation may not have access to all information about the corporation. This limited information can sometimes cause wrong financial investment decisions.
Panels A, B, and C of Figure 8 plot the distribution of subjects based on the amount of money they invested across three opportunities and across experimental conditions. Subjects were provided with a virtual endowment of $100 before making each investment choice, and they were paid a scaled amount of the amount of money they had at the end of the experiment.
Panels A, B, and C of Figure 9 plot the distribution of subjects based on the amount of money they invested across three opportunities and across experimental conditions. Subjects were provided with a virtual endowment of $100 before making each investment choice, and they were paid a scaled amount of the amount of money they had at the end of the experiment.
Panels A, B, and C of Figure 10 plot the distribution of subjects based on the amount of money they invested across three opportunities and across experimental conditions. Subjects were provided with a virtual endowment of $100 before making each investment choice, and they were paid a scaled amount of the amount of money they had at the end of the experiment.
|                      | (1) | (2) | (3) |  |  | (6) | (7) | (8) | (9) |
|----------------------|-----|-----|-----|  |  |     |     |     |     |
| Decision to Invest   |     |     |     |  |  |     |     |     |     |
| Amount Invested      |     |     |     |  |  |     |     |     |     |
| Amount Invested (if >0) |     |     |     |  |  |     |     |     |     |
| LR                   | -0.044 | -0.105 | -0.103 |  |  | -8.878 | -11.926 | -15.211 | -6.039 | -6.278 | -10.112 |
| NPV<0                | 0.033   | 0.044** | 0.046** |  |  | 4.375** | 4.329*** | 4.799*** | 3.672 | 3.459* | 4.082** |
| HR                   | 0.05   | 0.05 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |

Table 7 reports the marginal effects computed from estimating probit specifications (columns (1)-(3)) and tobit specifications (columns (4)-(9)), whose outcome is indicated on top of each column. The controls on the right-hand side are those listed in Table 2. LR refers to the low-risk investment opportunity, NPV<0 refers to the negative net-present-value opportunity, and HR refers to the high-risk opportunity. Mean Control Group is the average of the outcome variable for the excluded category, that is, the subjects in the control condition. Standard errors are in parentheses. Statistical significance is reported as follows: *10%, **5%, ***1%.