Divine Catalysts: Religious Beliefs and Financial Investments*

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December 8, 2024

Abstract

We study whether religious beliefs foster financial investments using a unique trading session on Diwali in India—a festival associated with wealth and prosperity. Leveraging brokerage data and differences in religion, we show that treated individuals change their behavior on the day, participating more and buying substantially larger amounts, which increases aggregate retail buy order imbalance. Consistent with beliefs associated with Diwali, they buy new stocks rather than increasing existing holdings, with a reduced likelihood of selling these stocks. These patterns are absent around events lacking associated beliefs about prosperity. Our findings highlight a novel mechanism of religious messaging facilitating investments.

Keywords: Investment behavior, household finance, retail trading activity, religion.

JEL Classification: G11, G50, Z12.

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1 Introduction

Four out of five people worldwide identify with a religious group (Pew Research, 2012). A growing body of evidence suggests that religion can impact economic behaviors and outcomes (see Guiso et al., 2003; McCleary and Barro, 2006; Iyer, 2016; Montero and Yang, 2022).[1] Particularly, extant research has documented the role played by pro-social preferences and morality in linking religious beliefs to economic outcomes (Benjamin et al., 2016; Bursztyn et al., 2019; Karlan et al., 2021).[2] Despite these advances, there remains a gap in our understanding on how religious beliefs impact economic decision-making in domains where financial incentives dominate. In this paper, we address this gap by examining how religious beliefs influence investment behavior in the context of financial markets in India.

To establish the role of religious beliefs, we leverage *recurring* religious festivals that vary in the beliefs associated with messages they convey. Specifically, we focus on a unique trading session organized by stock exchanges during a festival that holds religious significance for some groups but not others. We exploit these differences across religion and investigate whether the *same* individual responds differently to the religious beliefs associated with messages conveyed by the festival and assess whether these responses have a measurable impact on their stock market participation and investment behavior.

We focus on Diwali, known as the "Festival of Lights," a festival celebrated by over a billion people worldwide, which holds religious and cultural significance in Hindu tradition as a time of new beginnings and long-term wealth.[3] For Hindus, Diwali marks the beginning of the accounting year and is considered an auspicious time for financial investments, symbolizing an invocation for divine blessings for wealth accumulation and prosperity in the year ahead. In line with this belief, stock

[1] Additional works include Barro and McCleary (2003), Gruber and Hungerman (2008), Clingingsmith et al. (2009), Campante and Yanagizawa-Drott (2015), Fruehwirth et al. (2019), Bryan et al. (2021).

[2] Prior work has focused almost exclusively on the Abrahamic faiths. On Christianity, see Barro and McCleary (2003), Benjamin et al. (2016), Caicedo (2019), Espín-Sánchez et al. (2023); on Judaism, see Pascali (2016),Johnson and Koyama (2017), Jha and Shayo (2019); on Islam, see Campante and Yanagizawa-Drott (2015), Bazzi et al. (2020), Demiroglu et al. (2021), Mehmood et al. (2023); and on Confucianism, see Kung and Ma (2014) and Chen et al. (2022). A nascent literature has recently begun examining the economic implications of traditional African religions (Le Rossignol et al., 2022; Butinda et al., 2023).

[3] Diwali is one of the largest and most significant religious observances globally (Washington Post; NPR). According to a Pew Research Center Survey, seven in ten Asian Americans celebrate Diwali, and the festival is also marked by a reception at the White House.

exchanges across India organize a special trading session, "Muhurat trading" (hereafter, "event"), to facilitate this cultural practice, which predominantly attracts retail investors who view it as a symbolic start to a financially prosperous year. Given its strong emphasis on economic well-being, Diwali offers an ideal setting to examine whether specific religious beliefs influence financial decision-making in equity markets, a setting involving significant monetary stakes.

Our empirical analysis leverages data from a major national brokerage firm, tracking all new account openings and clients' stock transactions from 2012 to 2019. Unlike previous studies that rely primarily on geographic variation in religious group concentrations, our dataset confers a unique advantage —the ability to infer an individual's religion. We exploit the fact that last names in India are strong indicators of both religion and caste, and that marriages in India are overwhelmingly intra-religious (Iyer, 2002; Banerjee et al., 2013; D'Acunto et al., 2024). To the best of our knowledge, we are the first to be able to infer religious identity of individual investors, allowing us to track their stock market participation and investment decisions over time. Specifically, we compare changes in financial investments for individuals likely influenced by the event ("treated" group) with those of unaffected individuals from other religions ("control" group) who are unlikely to be influenced by the same religious messaging. This *within*-individual analysis allows us to isolate the impact of specific religious beliefs on individuals' financial decision-making, holding constant other fixed characteristics and demographics that might affect investment decisions.[4]

We start by examining brokerage account openings around Diwali. Across multiple events, we consistently observe that treated individuals (Hindus) are significantly more likely to open brokerage accounts in the month of Diwali compared to other times of the year. In contrast, we do not find a comparable increase in brokerage account openings among control individuals (other religious groups) during this period. Although the effect size is modest, the estimate suggests a doubling in the rate of new account openings relative to the daily average. This finding provides suggestive evidence on the extensive margin, that Diwali fosters treated individuals to open brokerage accounts.

We then investigate whether treated individuals open accounts with the specific intention of trading on the event day. To do so, we estimate the probability of trading for the first time on the event

[4]These include for example financial literacy and education (Bernheim and Garrett, 2003; Van Rooij et al., 2011; Cole et al., 2014), cognitive ability (Grinblatt et al., 2011), as well as political ideology (Kaustia and Torstila, 2011; Kaustia et al., 2016; Meeuwis et al., 2022; Ke, 2024).

day, conditional on not having traded prior to that day. We find that the (hazard) likelihood of treated investors' accounts trading for the first time on Diwali is significantly higher than for other investors. Our estimates suggest that treated investors are 65% more likely to make their first trade on Diwali compared to individuals in the control group. Moreover, other investors' accounts show no significant increase in first-time trading on Diwali, with the coefficient estimates being close to zero and statistically insignificant. Taken together, these findings suggest an increase in brokerage account openings among Hindu investors around Diwali, with many making their first trade precisely on the Muhurat trading day.

Next, we investigate trading patterns on the event day, focusing on investors' trading decisions on the event day relative to other days. Our empirical approach leverages the *recurring* nature of the event over several years, allowing us to examine within-investor changes in trading patterns on Diwali, and to assess the relevance and persistence of the associated cultural messaging. Moreover, the presence of a control group of non-Hindu investors on the event day mitigates two key concerns. First, this group is unlikely to be affected by the religious messages specific to Diwali, allowing for a clearer comparison. Second, it addresses the possibility that trading activity might simply be driven by other factors, such as liquidity, resulting from the market being open on a holiday, given that the trading session is accessible to all investors regardless of religious identity. To further account for unobserved, time-varying local factors, we use high-dimensional geography $\times$ day fixed effects.

We find that treated investors are significantly more active in the stock market on the event day compared to investors from other religious groups. They are approximately 1 percentage point more likely to trade on Diwali—a 12% increase relative to the sample mean—compared to other days and relative to control individuals from the same region. Furthermore, treated investors trade 17% higher amounts. These findings suggest a positive relationship between religious beliefs associated with Diwali and trading activity among treated investors, highlighting the impact of event-specific beliefs shaping individual's investment decisions, complementing recent work by Butinda et al. (2023) and Hjort (2021).

To further understand the nature of this increased activity, we investigate whether Diwali's emphasis on new beginnings and long-term wealth influences buying versus selling differently. We find that the participation effect observed among treated investors is primarily driven by buying behavior,

with our estimates implying an 18% increase in the likelihood of buying and no significant change in their likelihood of selling. When examining transaction amounts, we again observe substantial effects on buying but not on selling. Put differently, treated investors are more inclined to buy rather than sell on Diwali and do so in significantly larger amounts compared to other days relative to control individuals.

Importantly, this buying activity is concentrated in new stocks rather than increasing positions in existing holdings. Treated individuals are 0.7 percentage points —17% relative to the sample mean more likely to exclusively buy new stocks that are not currently in their portfolios on the event day, while their likelihood of simply purchasing additional shares of their existing holdings remains unchanged. This pattern further suggests that beliefs associated with Diwali's messaging around new beginnings encourages treated investors to change their portfolios by initiating new purchases.

An important question is whether the heightened buying behavior among treated investors on the event day leads to a measurable broader effect in the aggregate stock market. To test this, we use comprehensive stock trading data from the National Stock Exchange (NSE). Following Barber et al. (2008); Barber and Odean (2008), we construct a measure of retail buy-sell imbalance and find that the increased buying documented in the brokerage data translates into a pronounced retail buy-side imbalance in the market on the event day. To establish the cultural relevance of Diwali in driving the imbalance, we compare these results to retail buy-sell imbalance in the market around secular and other religious events, including other Hindu-related festivals, public holidays and earnings announcements. Consistently across the events, no comparable imbalance emerges, mitigating concerns regarding the role of general "sentiment" impacting aggregate market activity among retail investors (Da et al., 2015; Edmans et al., 2007; Baker and Wurgler, 2007) and highlighting the unique influence of Diwali's cultural messaging.

Finally, we investigate whether treated individuals retain the stocks they purchase on Diwali for a longer period or sell them shortly after the event, in comparison to control individuals. While the beliefs associated with Diwali emphasize prosperity and long-term wealth—potentially encouraging holding onto stocks—the increased trading activity on the event day might also induce a short-term trading "frenzy." We, therefore, assess whether the event fosters more persistent stock holding among treated individuals or leads to short-term selling. To do so, we estimate regression models of selling

likelihood on a dummy variable indicating whether the stock was purchased on Diwali, incorporating individual, stock $\times$ day, and time-owned fixed effects. Our analysis also controls for factors known to influence selling behavior, in particular whether the stock is trading at a paper gain relative to its purchase price (Ben-David and Hirshleifer, 2012). We find that treated investors are less likely to sell stocks purchased on Diwali, while control individuals, if anything, are more likely to sell those purchased on the event day. These results suggest that Diwali's association with long-term prosperity tends to influence treated investors' holding horizons, fostering long-term investments.

Admittedly, there could be potential explanations beyond religious beliefs for our findings. A primary explanation might be that treated investors experience a temporary rise in disposable income around Diwali due to cultural traditions of gift-giving and bonuses, potentially increasing both participation and investment horizons.[5] Using data from individuals' checking and savings accounts, we find no changes in gross and net wealth around the event. Moreover, we find a small increase in ATM withdrawal prior to Diwali but no meaningful differences in credit card transactions. A caveat to these analyses is that we do not observe off-account physical cash and gold holdings, which are often exchanged around Diwali.

Therefore, to further rule out wealth effects and other broad explanations, we examine trading patterns around other religious events of similar significance that lack associated beliefs about long-term wealth and prosperity. This approach allows us to hold constant religiosity for (i) treated, and (ii) control religious groups, separately. Our estimates show that treated individuals are less likely to trade on other significant religious days, in terms of either buying or selling activity. Similarly, control group investors show significantly lower trading activity around their respective religious events, with reductions in both buys and sells. Therefore, the distinct trading patterns on stock market participation and buying behavior on Diwali, suggests that the key channel uniquely influencing trading decisions among investors is religious beliefs associated with specific messaging of the event.

Related Literature. Our first contribution is to document that religious beliefs impact economic outcomes for households in domains where monetary incentives dominate. In doing so, it complements research on non-monetary incentives (Frey, 1997; Akerlof and Kranton, 2000; Bénabou and Tirole,

[5] See for instance Briggs et al. (2021); Andersen and Nielsen (2011) on the effect of wealth on stock market participation.

2003; Gneezy, 2005; Bénabou and Tirole, 2006). Prior work has shown that priming religiosity can affect economic choices, including repaying debt, making contributions to public goods, and risk aversion (Iyer, 2002, 2016, 2018; Benjamin et al., 2016; Bursztyn et al., 2019; Fruehwirth et al., 2019; Sinding Bentzen, 2019). Papers have documented an increase in religiosity around both positive and negative shocks, such as unemployment and divorce (Clark, 2005), declining social mobility (Binzel and Carvalho, 2017), rainfall variability (Ager and Ciccone, 2018; Espín-Sánchez et al., 2023), and income shocks (Dehejia et al., 2007; Buser, 2015). At the same time, there is a body of evidence from laboratory experiments (Dal Bó and Dal Bó, 2014) and in the field exploring various types of normative appeals and their impact on a wide range of behaviors (Pruckner and Sausgruber, 2013; Berger et al., 2016; Hallsworth et al., 2017; Ito et al., 2018; Floyd et al., 2022).[6]

Second, our findings also connect directly to work that studies individuals' trading behavior and performance (Barber and Odean, 2000, 2008; Grinblatt and Keloharju, 2000; Kaniel et al., 2008; Odean, 1998a; Seru et al., 2010).[7] One strand of this extensive literature identifies various behavioral biases that shape retail investor activity (e.g., Daniel et al., 1998; Odean, 1998b; Ben-David et al., 2013; Da et al., 2021; Shefrin and Statman, 2000; Barberis and Huang, 2008). Specifically relevant to our framework, Anagol et al. (2021), Balasubramaniam et al. (2023), and Fisman et al. (2023) focus on India, examining the behavior of individual investors in this cultural and economic setting. Our contribution is to highlight a novel mechanism shaping individual trading activity, showing that it can be directly influenced by spiritual messaging and cultural symbolism associated with specific events.

Finally, our study also contributes to the finance literature that examines the role of social factors as determinants of investor behavior in financial markets (see Hirshleifer, 2020; Akçay and Hirshleifer, 2021). One strand of research explores how social interactions and peer effects shape household financial decision-making (Hong et al., 2004; Ivković and Weisbenner, 2007; Brown et al., 2008; Kaustia and Knüpfer, 2012; Cannon et al., 2024; Gelman et al., 2024; Müller et al., 2024). In particular, several studies have used geographic variation in religious group concentrations as proxies for gambling preferences and risk aversion (e.g., Kumar, 2009; Hilary and Hui, 2009; Kumar et al., 2011).[8] Unlike

[6] Recent work has also examined the impact of ethnic division on resource allocation (Jha, 2013; Hjort, 2014; Iyer and Shrivastava, 2018; Fisman et al., 2020; Shayo, 2020; Bhalotra et al., 2023; Bharti and Roy, 2023).

[7] An extant literature in household finance also examines stock market participation more broadly (Haliassos and Bertaut, 1995; Campbell, 2006; Guiso and Sodini, 2012; Ke, 2018, 2024; Gomes et al., 2021).

[8] Renneboog and Spaenjers (2012) highlight that Catholic households tend to be more risk-averse and participate less in

these studies analyzing religion as a proxy for broad social and cultural factor, our paper isolates the impact of a specific religious event and associated beliefs on individual investor behavior over time. By capturing within-individual changes in behavior, our study sheds light on how specific religious cues can shape investment decisions, thus providing a more precise understanding of the mechanisms through which religion influences financial decision-making.

2 Institutional Details

Our empirical analysis focuses on Diwali, a festival of cultural and religious significance in India, to examine the effects of religious beliefs on stock market behavior. In this section, we detail the institutional and cultural background of Diwali and its associated Muhurat trading session, emphasizing the festival's themes of prosperity and good fortune.

2.1 Religions in India

India is known for its significant religious diversity. According to the Population Census of 2011, approximately 79.8% of Indians identify as Hindu, making it the most prominent religious group in the country. Islam is the second-largest religion, with around 14.2% of the population, followed by Christianity at 2.3% and Sikhism at 1.7%. Other religious groups, including Buddhism, Jainism, and smaller indigenous faiths, together make up roughly 2% of the population.

Religion is also an important part of daily life in India, across religions. In Online Appendix Table IAA1, we study their importance using World Value Survey. According to Wave 7 of the World Values Survey (2017-2022), 64% of individuals reported that religion is a "very important" part of their lives, while over 62% attend religious services at least once a month, highlighting the collective importance of religious engagement.

the stock market.

2.2 Cultural Significance and Symbolism of Diwali

Religious festival are prominent features of social life in India with Diwali being one of largest and most significant religious observance among Hindus.[9] Diwali marks the beginning of the New Year for many communities in India. Also known as the "Festival of Lights," it is one of the most celebrated Hindu festivals, symbolizing the triumph of light over darkness and good over evil. Observed by millions of individuals across India, Diwali typically spans five days, with the third day marking its peak. Families celebrate by illuminating homes with oil lamps, exchanging sweets, and setting off fireworks. The festival carries themes of new beginnings, prosperity, and spiritual renewal, as it commemorates the return of Lord Rama to his kingdom after exile, as described in Hindu epic lore. Diwali traditions focus on invoking blessings for wealth and fortune, making it a significant cultural moment linked to optimism and aspirations for prosperity in the year ahead.

2.3 Muhurat Trading

Tradition. Since its inception in 1992, the National Stock Exchange has organized a special trading session known as "Muhurat Trading" to mark an auspicious start to the new financial year.[10] Muhurat trading takes place on the third day of Diwali, considered the most auspicious of the five days of the festival.[11] This tradition, deeply rooted in cultural and spiritual beliefs, invites investors to participate in the financial markets on a day that symbolizes prosperity and long-term economic well being. By merging financial transactions with religious customs, Muhurat Trading reinforces the hope for a prosperous year ahead.

Muhurat trading is considered as an auspicious way to start the new year, believed to bring wealth and prosperity. Rituals such as *Lakshmi Puja* and *Chopda Puja*, invoking blessings for success and abundance, are performed by stock brokers. Following this, the trading session primarily sees participation from retail investors, symbolizing a blend of spiritual tradition and financial optimism. These rituals,

[9] Often, they mark changes of season, occupations, the movements of stars and planets, or opportunities for expressing gratitude.

[10] The term "Muhurat" signifies an opportune moment to start new projects or make financial decisions, and this special trading session for equities, which lasts about one hour in the evening, marks the beginning of the traditional Hindu accounting year known as Samvat.

[11] The dates of Hindu festivals, including Diwali, are determined by the lunar calendar and therefore vary from year to year. Table 1 lists the dates and timings of trading sessions at the National Stock Exchange.

including placing a coin on account books to symbolize wealth, are a way to welcome prosperity, and traders and shopkeepers keep lights burning throughout the night in hopes that goddess of wealth will bring fortune in the year ahead.

Muhurat trading is advertised widely by both stock exchanges and individual banks and brokers in India. Alongside informational details on the date and timing of the trading session, the vast majority of advertising related to Muhurat trading heavily features religious messaging and imagery, highlighting the auspicious nature of the day and the trading session, alongside wealth and prosperity.[12] Da et al. (2011) propose that Google Search Volume Index (SVI) data serves as a direct measure of retail investor attention. Accordingly, we plot the online search interest for the term "Muhurat Trading" in India from 2012 to 2019 (our sample period, cf., Section 3) in Figure IAB4. The data show a pronounced peak in search interest each year precisely during the month of Diwali, indicating that retail interest in Muhurat trading sharply intensifies only around this time, underscoring its unique appeal to retail investors.

Implementation details. Muhurat trading follows a specific structure on Diwali, starting with a 15-minute block deal session where large, pre-arranged trades are executed between two parties at negotiated prices before the market opens to retail investors. This is followed by a 15-minute pre-open session, during which traders enter orders without executing trades, helping to establish the market's opening price. The main event is the normal market session, lasting one hour, where continuous trading occurs, allowing investors to buy and sell stocks just like during regular market hours. Afterward, there is a call auction session of 5 to 10 minutes, focused on trading illiquid securities, with prices determined by overall demand and supply. The day concludes with a 15-minute closing session, during which no new orders are accepted, but traders can square off existing positions at the closing price. Table 1 lists the dates the Muhurat trading sessions occurred in our sample covering 2012 to 2019.

[12] See Section B of the Internet Appendix for more details on the advertising of Muhurat trading and examples of religious messaging in the marketing of the National Stock Exchange and brokers for the trading session, as well as examples of newspaper articles referencing and advertising the event.

3 Data and Summary Statistics

Our empirical analysis relies on two data sources. The first source is a unique proprietary dataset of individual account-level brokerage data provided by a major national brokerage firm in India. The second source is a comprehensive dataset from the NSE, covering the universe of (anonymized) transactions for listed stocks from 2012 to 2019.

3.1 Brokerage Data

Our main data set comes from a leading national brokerage firm in India, providing granular account-level information that allows us to examine retail investor trading in detail. This brokerage firm operates through more than 7,000 branches in all Indian states, giving our analysis a broad and representative view of trading patterns in the country.

Data Overview. The primary component of this data set is a trade file, which contains detailed transaction information, including an anonymized Permanent Account Number (PAN) as a unique identifier for each trader, the last name and address of the account holder, the account opening date, the transaction date, the security name, the amount of shares bought or sold, and the total transaction value. Our sample covers trades from January 2012 through December 2019. Since we observe each account's opening date, we focus on accounts opened from January 2012 onward, allowing us to track the full evolution of each portfolio based on the trade data, totaling 24,112 investors. Like others before us, we focus on direct stockholdings, given the very limited share held by mutual funds in India (Campbell et al., 2014, 2019; Balasubramaniam et al., 2023). Further, our data allows us to measure detailed attributes of the underlying investors such as their age, income, or sector of employment, similar to the literature that studies households' trading behavior.

For our analysis, we focus on transactions involving common stocks listed in the Prowess Database, which is maintained by the Centre for Monitoring Indian Economy (CMIE) and is comparable to the CRSP database in the U.S.[13] We extract data from the latest vintage of Prowess, which is free from

[13]Several prior studies on Indian firms have used this dataset, including Bertrand et al. (2002); Gopalan et al. (2007); Lilienfeld-Toal et al. (2012); Gopalan et al. (2016); Naaraayanan and Nielsen (2021); and Naaraayanan and Wolfenzon (2023).

survivorship bias, as highlighted by Siegel and Choudhury (2012). We manually match stock name strings in the broker dataset to those in the Prowess dataset to extract stock identifiers and merge with stock prices and characteristics. This process allowed us to link over 85% of observations from the brokerage data to the stock characteristics in Prowess, covering more than 88% of the transaction volume within our dataset.

Another prominent feature of the dataset is that it enables us to link individual trading activity from the brokerage account to the individual's savings and checking account, ATM transactions, and credit card transactions within the same bank. This comprehensive view allows us to analyze changes in individuals' net wealth around the event in Section 5.

Construction of Holding Sample. We build a holding sample by following the methodology of Ben-David and Hirshleifer (2012). Specifically, we use the transaction dataset to construct a holding sample at the investor-stock-day level, where each observation represents an individual investor's holding of a particular stock on a given day. Investor-days on which an investor does not trade are included, allowing us to capture both trading and passive holding periods to accurately track portfolio composition over time. Purchases and sales are aggregated on a daily basis for each investor-stock combination. For instance, if an investor purchased a given stock on January 5, 2015, and held it until January 26, 2015, there would be 15 observations (15 business days) for that investor-stock holding duration.

Inferring Investors' Religion. A unique feature of our brokerage dataset is its inclusion of the account holder's last name, which we use to infer the individual's religion, similar to D'Acunto et al. (2024) and Bhagavatula et al. (2019). Specifically, we create a data-driven mapping of last names from our broker dataset into distinct religious groups by leveraging the fact that last names in India are strong indicators of both religion, and that marriages in India, are overwhelmingly intra-religious. We utilize data from a major matrimonial website, which provides the first and last names of nearly six million users. This registry data set includes self-reported demographic information about religion and caste elicited at marriage and includes names and surnames, date of marriage, state of birth, city of residence, height (in centimeters), religion, and caste. Given that the relationship between last

name and religion is not always one-to-one, we employ these data to assign probabilities indicating the likelihood that a particular last name corresponds to each religion within a specific state.

The religion split in our broker sample is largely consistent with the split across religious groups in the general Indian population. Specifically, we compare our sample to the the Population Census 2011, and find that our sample is tilted toward Hindus—90%, while just under 3% are Muslim.[14] Despite a smaller share of other religious groups (7% of the sample), the number of observations is large enough to allow a statistically meaningful analysis. See Online Appendix A for more details.

To the best of our knowledge, we are the first to be able to link religion of individuals to their stock market transactions, allowing us to study how religiosity affects stock market participation and trading behavior at the individual-level.

3.2 National Stock Exchange Data

We also collect comprehensive stock trading data from the NSE, one of the world's largest stock exchanges.[15] This dataset covers the entire universe of trading records from the NSE over the period from 2012 to 2019. It provides detailed information for each transaction, including the trader's anonymized Permanent Account Number (PAN), the transaction date, the security ticker, the total number of shares bought or sold, and the execution price. Additionally, we observe the client type associated with each transaction, such as retail, institutional, overseas corporate bodies, statutory bodies, and unknown. For our analysis, we focus on transactions involving equities listed in the Prowess Database.

We collapse transactions on the NSE by client type, state, stock, and day level to get a dataset of the total quantity and amount of shares bought and sold of each stock on each day by each client type, containing approximately 70 million observations. This dataset contains 2,266 unique stocks that are traded over our sample period. We expand the time series dimension of the dataset to get stock-client type observations at the daily level, and then merge this with stock prices and characteristics from the Prowess dataset to arrive at a panel of stock and client-type observations at a daily frequency. This merge with the Prowess stock prices and characteristics covers almost 70% of the expanded panel in

[14]One potential reason for this imbalance is that Sharia principles condemn earning financial interest and discourage excessive risk-taking, which may deter Muslims from participating in the stock market (Naughton and Naughton, 2000).

[15]NSE is the seventh largest stock exchange in the world by total market capitalization, exceeding $5 trillion, as of May 2024.

the NSE data.

3.3 Summary Statistics

Table 2 provides an overview of summary statistics for our brokerage dataset. Panel A details account-level demographics, indicating an average age of 43 years, with 73% of account holders being male and 90% being Hindu individuals (referred to as "Treated").

Panels B and C present statistics at the account-day level, where Panel B covers the entire sample and Panel C focuses on trading days only. Panel B shows that the average total (stock) portfolio value is around ₹109,000,000 while the median is ₹19,000,000.[16] On average (unconditional), 8% of account-day observations correspond to trading days, with 6% for buy and 3% for sell transactions. The trade-conditioned sample (Panel C) shows an larger likelihood of buy (74%) compared to sell (38%) on active trading days, and an average buy amount larger than the sell amount.

Panels D and E provide account-stock-day level statistics, with Panel D showing unconditional statistics and Panel E focusing on sale-conditioned days. Panel D reveals that the frequency of trades at the account-stock-day level is 3% and that the average holding observation corresponds to a stock held for 138 days. The sale-conditioned sample (Panel E) shows that individuals sell partially or fully 16% of their holdings on these days.

Panel F presents summary statistics in the NSE dataset aggregated at the stock-day level for retail investor trades. It presents the total number of buy and sell transactions in a given stock on a particular day, as well as the corresponding transaction volumes in thousands of rupees. On average, for a particular stock, about 620 buy orders are submitted by retail investors, with an average daily total amount spent of ₹54,151,000, while about 580 sell orders are submitted, with an average total amount spent of ₹54,739,000. We also present trading imbalance measures at the stock-day level, calculated as the ratio of number of transactions $\frac{(buy-sell)}{(buy+sell)}$ submitted by retail investors.

[16] Over our sample window from 2012 to 2019, the average exchange rate is 64 rupees to 1 USD.

3.4 Additional Data

Census Data. We rely on the 2011 census of India, which contains individual-level data on religious demographics, to exploit geographic variation in ex-ante religious shares. In particular, the census offers granular district-level data on religious shares.

World Values Survey. We make use of Wave 7 of the World Values Survey, a survey measuring cross-country values and beliefs of individuals. Wave 7 covers over 60 countries and territories, asking questions collected over 2017 to 2022. We make use of questions relating to religiosity in India.

4 Main Empirical Results

In this section, we analyze the stock market participation and trading behavior of individuals. The objective of our empirical analysis is to determine whether individuals exposed to the religious messaging of the Diwali festival (referred to as the "Treated" group) participate more in financial markets and corresponding changes in trading behavior around the Muhurat trading day compared to individuals who are not exposed to this messaging (the "Control" group). We define the treated group as individuals inferred to be Hindu based on their last names, while the control group comprises individuals inferred as belonging to other religions. Additionally, we study whether these observed behaviors scale up to a broader market impact by analyzing aggregated data from the NSE.

4.1 Stock Market Participation

Brokerage Account Opening. We begin our analysis by studying decisions of individuals to open a brokerage account. To do so, we aggregate the number of accounts opened by individuals in our brokerage dataset across treated and non-treated groups and region. Specifically, we estimate:

$$naccounts_{imst} = \exp\left\{\beta_0 + \beta_1 Event_t + \beta_2 (Treated_i \times Event_t) + \gamma_{ims} + \varepsilon_{imst}\right\}, \tag{1}$$

where $naccounts_{ismt}$ is the number of brokerage accounts opened by individuals of treated group i on date t in state s and month-of-year m. Given the count nature of our dependent variable, we estimate

a Poisson specification and control for treated $\times$ state $\times$ month-of-year fixed effects, allowing us to rule out concerns about differences in region-specific seasonality in account opening across treated and control groups. We cluster standard errors at the state-level (Bertrand, Duflo, and Mullainathan, 2004; Roberts and Whited, 2013; Abadie, Athey, Imbens, and Wooldridge, 2017).

Figure 1 presents the estimated coefficients β_1 and β_2, labeled as "Event" and "Event $\times$ Treated", respectively. Note that the base effect on "Treated" is subsumed by the fixed effects, and hence not displayed. The figure shows that individuals in the control group are not significantly more likely to opening an account in the month of Diwali, with β_1 close to zero and statistically insignificant. The coefficient β_2, is positive and statistically different from zero, indicating that number of accounts opened are larger for individuals from the treated group relative to control group, controlling for seasonality and trends across groups. The coefficient estimate suggests that treated group opens 1.14 ($e^{0.133}$) accounts more in the month of Diwali compared to control group. Relative to the average of 1.43 new accounts opening on a daily basis, the estimate suggests a doubling in account opening. While the effect size is modest, this finding supports the hypothesis that treated individuals tend to open accounts with the intention of trading on Diwali. We formally test this in the subsequent section.

Likelihood to Trade for the First Time on Diwali. To assess whether treated individuals open their accounts with the intention of trading specifically on Muhurat trading day, we examine the likelihood of first-time trading occurring on Diwali. For each individual, we record the account opening date and the first observed trade date. We construct an individual-day dataset including the days between these two events. Using a hazard model, we estimate the probability of trading for the first time on Diwali, conditional on not having traded prior to that day.

The hazard model we estimate takes the form:

$$h_i(t) = h_0(t) \exp\left\{\beta_0 + \beta_1 Event_t + \beta_2 Treated_i + \beta_3 Event_t \times Treated_i + \epsilon_{i,t}\right\}, \tag{2}$$

where observations occur at the account (i) and date (t) levels. The variable $h_i(t)$ represents individual i's probability of trading on day t, conditional on not having traded before. $h_0(t)$ is the baseline hazard. The variable $Event_t$ is a dummy equal to 1 if day t corresponds to the Diwali' Muhurat trading day,

and $Treated_i$ is a dummy indicating whether individual i is inferred to be Hindu.

With this structure, the hazard ratio, $exp(\beta_1)$, measures the ratio of the probability of trading for the first time on Diwali versus the probability of trading for the first time on another day. Our main coefficient of interest in equation (2) is β_3, the coefficient on the interaction term. This coefficient measures the difference in the (log) hazard ratio between treated and control individuals for trading on Diwali. More specifically, e^{β_3} represents the relative change in the hazard (or likelihood) of trading for the first time on Diwali for treated individuals compared to control individuals. Standard errors are clustered at the day level.[17]

Figure 2 presents the estimated coefficients β_1, β_2 and β_3, labeled as "Event," "Treated" and "Event $\times$ Treated" respectively. The results show that control individuals are not significantly more likely to trade for the first time on Diwali, with β_1 close to zero and statistically insignificant. The coefficient β_2, while small in magnitude, is significantly negative, indicating that treated individuals are 7% less likely to trade for the first time on any given day than controls (the hazard ratio is equal to 0.93 = $e^{-0.07}$). However, our main coefficient of interest β_3 is positive and statistically significant, with a magnitude of approximately 0.5. This indicates that the hazard (or likelihood) of treated individuals trading for the first time on Diwali is 1.65 (= $e^{0.5}$) higher than for control individuals. This implies that treated individuals are 65% more likely to trade for the first time on Diwali compared to controls. This finding supports the hypothesis that treated individuals tend to open accounts with the intention of trading on Diwali.

4.2 Trading around the Event

Next, we examine changes in the trading among treated and control individuals around Diwali. To do so, we estimate panel regressions at the individual-day level. Our regression specification is as follows:

$$Y_{i,t} = \beta Event_t \times Treated_i + \gamma_i + \delta_t + \epsilon_{i,t}, \tag{3}$$

[17]The hazard model does not allow to cluster standard errors across multiple dimensions. We cluster by day because we observe that first-time trading concentrates on specific days such as Diwali.

where the observations are at the account (i) and date (t) levels. The variable $Event_t$ is a dummy equal to 1 if day t corresponds to the Muhurat trading day, and $Treated_i$ is a dummy indicating whether individual i is inferred to be Hindu. γ_i and δ_t are individual and date fixed effects respectively. Standard errors are double clustered at the individual and day levels.

The dependent variable $Y_{i,t}$ is either a dummy variable indicating whether the individual trades, buys or sells on day t, or a continuous variable defined as the inverse hyperbolic sine (arcsinh) of the amount spent on trading, buying or selling on day t.[18] Importantly, for both types of dependent variable we include non-trading days in our sample.

To study the dynamics of trading behaviors around Diwali, we estimate the following specification:

$$Y_{i,t} = \sum_{k=-5}^{5} \beta_k \{Day(k)_t \times Treated_i\} + \alpha_i + \delta_t + \epsilon_{i,t}, \tag{4}$$

where $Day(k)_t$ are dummy variables equal to one if day t correspond to k days before/after the Diwali Muhurat trading day (with $k \in \{-5, -4, ..., 0, ..., 4, 5\}$). Standard errors are double clustered at the individual and day levels. The coefficients β_k in equation (4) capture the differential effect for treated individuals on the outcome variable $Y_{i,t}$ on day k before/after Diwali relative to the baseline period outside the [-5, +5] window, compared to control individuals.

Likelihood to Trade. Panel A of Table 3 presents estimation results of regression (3), when the dependent variable is a variable equal to 100 if the individual trades on that day, 0 otherwise. Column (1) includes only religion fixed effects. All remaining Columns include individual fixed effects. Column (3) further include date fixed effects. In Columns (4) and (5), we include state $\times$ date fixed effects and district $\times$ date respectively, where state and district refers to the individual's registered address in India.[19] These specifications enable us to rule out the possibility that the effects we capture are solely driven by unobserved local factors.

The coefficient on $Event\ Day$, which can be estimated in specifications without date fixed effects

[18] We use the arcsinh transform to account for zeros, i.e., days when individuals do not trade.

[19] A district also known as revenue district is an administrative division of an Indian state or territory. A PIN code, or Postal Index Number, is a six-digit code used by India Post to uniquely identify and facilitate the sorting of mail in different geographic regions across India. Each PIN code corresponds to a specific area, ensuring efficient mail distribution within districts, cities, towns, and even specific neighborhoods.

(Columns (1) to (2)) is negative but statistically insignificant. This suggests a decrease in trading probability for control individuals on Diwali compared to other days, although standard errors are large and comparable in magnitude to the coefficient itself.

The coefficient on the interaction term $Event\ Day \times Treated$ is positive and statistically significant across all specifications, indicating that treated individuals are significantly more likely to trade on Muhurat trading day compared to controls. The coefficient ranges from 0.886 to 1.060. Column (5) suggests that treated investors are approximately 0.95 percentage point (p.p.) more likely trade on Diwali (12% relative to the dependent variable's sample mean) compared to other days, relative to control individuals in the same district. Overall, these results suggest a strong, positive relationship between the Diwali event and trading activity among treated individuals.

Amount Traded. Panel B of Table 3 presents the estimation results of regression (3), when the dependent variable is the inverse hyperbolic sine (arcsinh) of the amount traded. The results are consistent with the previous findings on trading likelihood. As in previous results, the coefficient on $Event\ Day$ is negative and either insignificant (Column (1)) or weakly significant (Column (2)), suggesting that, if anything, control individuals tend to trade smaller amounts on Diwali. The large standard errors reflect considerable variation in these estimates.

The coefficient on the interaction term $Event\ Day \times Treated$ is positive and statistically significant across all specifications, with coefficients ranging from 0.167 to 0.195. Column (5) indicates that, on Diwali, treated individuals trade about 17% more compared to other days, relative to control individuals in the same district. These results confirm that Diwali fosters increased trading activity and volumes among treated individuals.

Panel A of Figure 3 presents the estimated coefficients β_k in (4) when the dependent variable is the arcsinh of the amount traded, showing the dynamics of changes in trading activity around Diwali. The coefficient on the interaction term $Event\ Day \times Treated$ is positive and statistically significant, indicating a clear spike in trading activity on Diwali for treated individuals relative to controls. In the days leading up to Diwali (Day -5 to Day -1), there is no significant difference in the evolution of traded amounts, as the coefficients are close to zero and statistically insignificant. Similarly, post-Diwali (Day +1 to Day +5), the evolution of traded amounts exhibit does not exhibit

significant differences between treated and control. These results suggest that the increase in trading is concentrated specifically on the Muhurat trading day, reinforcing the role of Diwali for stock market participation among treated individuals.

Likelihood to Buy and Sell. Panel A of Table 4 presents the estimation results of regression (3), when the dependent variable is equal to 100 if the individual buys (Columns (1)-(3)) or sells (Columns (4)-(6)) on that day, and 0 otherwise. All columns include individual fixed effects. Columns (1) and (3) include date fixed effects, Columns (2) and (5) further include state $\times$ date fixed effects, and Columns (3) and (6) include district $\times$ date fixed effects.

The coefficient on $Event\ Day \times Treated$ is positive and statistically significant in Columns (1), (2) and (3), indicating that treated individuals are significantly more likely to buy stocks on Diwali compared to control individuals. The coefficient ranges from 1.05 to 1.13, suggesting an increase in buying activity of about 18% relative to the dependent variable's sample mean (6.22). By contrast, the coefficient on $Event\ Day \times Treated$ in the sell specifications (Columns (4), (5) and (6)) is not statistically significant. This implies that treated individuals are not significantly more likely to sell stocks on Diwali compared to controls.

Overall, these results suggest that the baseline effect is concentrated on buying behavior rather than selling. In Section 4.3, we show that this pattern leads to an aggregate market imbalance in favor of buy orders among retail investors, confirming that the Muhurat trading day drives a substantial increase in buying activity while selling behavior remains mainly unaffected.

Amount Spent on Buy and Sell Trades. Panel B of Table 4 presents the results of regressions where the dependent variable is the arcsinh of the amount spent on buy and sell trades. All columns include individual fixed effects. Columns (1) and (3) include date fixed effects, Columns (2) and (5) further include state $\times$ date fixed effects, and Columns (3) and (6) include district $\times$ date fixed effects.

Consistent with the results presented in Panel A of Table 4 and discussed above, the coefficient on $Event\ Day \times Treated$ is positive and statistically significant in the buy specifications (Columns (1), (2) and (3)), indicating that treated individuals spend significantly more on buy trades on Diwali relative to other days, compared to control individuals. The coefficients range from 0.19 to 0.20,

suggesting an increase of about 20% in the amount spent on buying relative to other days. In contrast, the coefficient on $Event\ Day \times Treated$ in the sell specifications (Columns (4), (5) and (6)) is small and not statistically significant, suggesting no meaningful difference in changes in the amount spent on sell trades between treated and control individuals on Diwali.[20]

Panel B of Figure 3 presents the estimated coefficients β_k in (4), when the dependent variable is the arcsinh of the amount spent on buy trades (green) and sell trades (orange). The coefficient on the interaction term $Event\ Day \times Treated$ is positive and statistically significant for buy trades, indicating a clear spike in buying activity for treated individuals on Diwali. In contrast, the coefficient for sell trades is close to zero and not statistically significant, confirming no notable change in selling behavior, consistent with the results in Table 4.

In the days leading up to Diwali (Day -5 to Day -1), there is no significant change in the evolution of buying or selling activity between treated and controls, as the coefficients are close to zero and statistically insignificant. Similarly, post-Diwali (Day +1 to Day +5), the evolution of both buying and selling activities are not different. Although we observe a small negative coefficient on Day +4 for buying and a positive coefficient on Day +5 for selling, the magnitude is smaller compared to the event day.

Analyzing Buying behavior: New vs. Existing Holdings. Given Diwali's emphasis on new beginnings, we further study the buying behavior of treated investors on the event day, with a focus on whether they are more inclined to purchase new stocks (holdings not already in their portfolios) or to add additional shares to their existing holdings.

Panel A of Table 5 presents the estimation results of regression (3), when the dependent variable is equal to 100 if the individual buys only new stocks (Columns (1)-(3)), only existing holdings (Columns (4)-(6)), or both (Columns (7)-(9)) on that day, and 0 otherwise. All columns include individual fixed effects. Columns (1), (4) and (7) include date fixed effects, Columns (2), (5) and (8) further include state $\times$ date fixed effects, and Columns (3), (6) and (9) include district $\times$ date fixed effects. The estimates indicate that treated individuals are significantly more likely to exclusively purchase

[20] In Internet Appendix Table IAC4 we show that these results remain qualitatively similar when we include only observations with non-zero trading in our sample.

new stocks on the event day compared to other days relative to controls, with coefficients for the interaction term *Event Day* $\times$ *Treated* being positive and statistically significant across Columns (1) to (3) for new holdings. These coefficients range from 0.67 to 0.78, representing approximately 17% of the dependent variable's sample mean. Conversely, the coefficients for existing holdings in Columns (4) to (6) are smaller in magnitude and statistically insignificant, indicating no significant change in the likelihood of simply purchasing additional shares of stocks already held. For individuals buying both new and existing holdings, the interaction term is also positive and significant, although the effect size is smaller than for purely new holdings, suggesting a predominant focus on acquiring new stocks.

Panel B of Table 5 examines the (arcsinh) amount spent on buying trades, reinforcing the findings in Panel A. The interaction term *Event Day* $\times$ *Treated* is again positive and statistically significant across Columns (1) to (3) for new holdings, with coefficients ranging from 0.11 to 0.13, indicating that treated individuals also tend to spend more on new stock purchases on the event day. For existing holdings, the coefficients in Columns (4) to (6) are again small and statistically insignificant, showing no significant change in the amount invested in previously held stocks. For buy trades involving both new and existing holdings, the coefficients are positive and significant but smaller than for new holdings alone, suggesting that the increased spending by treated investors on the event day is primarily directed toward new acquisitions rather than augmenting existing positions.

Overall, the results suggest that the increased buying behavior by treated investors on the event day is primarily concentrated on acquiring new stocks rather than expanding existing holdings. This pattern aligns with the hypothesis that Diwali's cultural emphasis on new beginnings and prosperity influences treated investors to augment their portfolios with new assets rather than simply reinforcing prior investments.

In the next section, we examine whether the observed buying behavior among treated individuals during Muhurat trading translates into a measurable aggregate effect at the broader market level.

4.3 Aggregate Retail Activity

To complement our individual-level empirical analysis, we study retail imbalance at the stock level around a series of important event dates. In particular, we compare the average retail trading activity at the stock level around the five days preceding and following (i) Diwali Muhurat trading, (ii) other national Hindu religious events excluding Diwali, (iii) non-Hindu religious events, (iv) national holidays, and (v) stock announcement dates. Online Appendix Table IAB3 presents the list of other religious events and their cultural significance. Figure 4 plots the average of retail imbalance, which is computed on the universe of retail trades made on the NSE as $\frac{(buy-sell)}{buy+sell}$ at the stock level, where *buy* and *sell* are the number of buy and sell trades, respectively. This measure is a commonly used proxy for retail imbalance (see Barber et al., 2008; Barber and Odean, 2008).

Panel A of Figure 4 indicates significant retail buy order imbalance on the day of Diwali, during the Muhurat trading hours, with no observable pre-trend or post-trend on the days after. Meanwhile, Panels B-E of the figure indicate that the magnitude of the Muhurat trading effect on retail trading activity is significantly higher and not comparable to trading activity around other Hindu religious events, other non-Hindu religious events, trading in the days leading up to and following national holidays, as well as trading on potentially informative days when stock announcements occur. These results, together with those presented in Section 4.2, suggest that the observed effects in the aggregate are unlikely to be driven by sentiment (Da et al., 2015; Edmans et al., 2007; Baker and Wurgler, 2007) but rather by religious beliefs of treated individuals.

4.4 Likelihood to Sell Stocks Purchased on the Event

It remains an open question whether treated individuals sell the stocks they purchase on Diwali shortly after or retain them for a longer period. While the cultural message of Diwali emphasizes prosperity and long-term wealth, which could encourage holding onto stocks, the increased market activity on the Muhurat trading day might also indicate a short-term trading "frenzy." In this section, we aim to empirically assess whether the religious context of Diwali promotes more persistent stock holding among treated individuals or leads to short-term selling behavior.

First, it is noteworthy that stocks purchased on Diwali are held for a longer duration in our sample:

an average of 203 days compared to 137 days for stocks purchased on other days. To rigorously test whether treated individuals tend to retain stocks bought on Diwali for an extended period, we use our holding sample at the investor-stock-day level (see Section 3 for construction details). This allows us to analyze differences in holding behavior across treated and control groups.

We estimate the following regression:

$$\begin{aligned} 100 \times Sell_{i,j,t} = \beta_1 \{Purchased\ on\ Event\}_{i,j,t} + \beta_2 Treated_i \times \{Purchased\ on\ Event\}_{i,j,t} \\ + \gamma X_{i,j,t} + \gamma_i + \delta_{j,t} + \epsilon_{i,j,t}, \end{aligned} \tag{5}$$

where i, j, and t denote individual, stock, and day, respectively. The dependent variable $Sell_{i,j,t}$ indicates whether individual i sells stock j on day t, fully or partially, conditional on it being in their portfolio the previous day. The variable $Purchased\ on\ Event$ is a dummy equal to 1 if some shares of the stock were purchased on Muhurat trading day. If the stock is sold off and repurchased later, it is considered a new position and the dummy is reset to zero. The dummy $Treated_i$ indicates whether the individual is inferred to be Hindu based on their last name.

The time-varying controls ($X_{i,j,t}$) include several variables known to influence selling behavior, following Ben-David and Hirshleifer (2012). First, we include fixed effects for the number of days the stock has been held into the account to capture the time structure of selling likelihood. Then we interact these fixed effects with a dummy indicating whether the stock is trading at a paper gain relative to its weighted-average purchase price ("Gain"). We also include the return since purchase if the asset is in paper loss (gain) and zero otherwise, as well as their interactions with the squared root of the number days the stock has been held.

Individual fixed effects (γ_i) account for individual-specific characteristics, while stock $\times$ day fixed effects ($\delta_{j,t}$) absorb time-varying factors at the stock level that might affect selling behaviors. Standard errors are double-clustered at the individual and day levels.

Table 6 presents the regression results. In Panel A, our sample comprises all observations, i.e., including investor-days on which no trades occur, while in Panel B it consists only of days when the individual sells at least one stock. All columns include individual fixed effects and stock $\times$ date fixed effects. Columns (2) adds time-owned fixed effects, while Columns (3) and (4) include time-owned

$\times$ gain fixed effects. Additional control variables are included in Column (4).

In Panel A, the coefficient on *Purchased on Event* is positive, ranging from 0.16 to 0.22, and is either not statistically significant or only marginally significant. This suggests that control individuals who purchased stocks on Diwali are weakly more likely to sell these stocks later. The effect size represents roughly 20% of the sample mean (0.91) of the dependent variable. The coefficient on *Treated* $\times$ *Purchased on Event* is negative, statistically significant at the 10% level, and ranges from -0.23 to -0.21, suggesting that, if anything, treated individuals are more likely to hold onto stocks they bought on Diwali.

In Panel B, where the sample is restricted to sell days, the coefficients on *Purchased on Event* are larger, ranging from 2.01 to 2.27, and are statistically significant at the 5% or 1% levels. This indicates that control individuals are much more likely to sell a stock they purchased on Diwali when they sell on a given day. These coefficients represent about 20% of the dependent variable mean (11.35) in this sample.

The coefficient on *Treated* $\times$ *Purchased on Event* is consistently negative and statistically significant, with values ranging from -1.9 to -2.1. This confirms that treated individuals are less likely to sell the stocks they purchased on Diwali, relative to control individuals.

Overall, these results show that, if anything, treated individuals are less likely to sell the stocks they purchase on Diwali, reinforcing the notion that Diwali encourages long-term stock retention rather than short-term trading.

5 Alternative Explanations

So far, we have established that individuals from treated group are significantly more active in the stock market on Muhurat trading day relative to other days, compared to investors from other religions. These investors are also more likely to buy rather than sell, resulting in aggregate retail imbalance in the market on the day of the event. Notably, treated investors are less likely to sell the stocks purchased on Diwali, suggesting that the cultural association with long-term prosperity influences their selling decisions and thus their investment horizon. However, there may be potential alternative explanations for these findings, which we consider in this section.

5.1 Wealth Effects

A primary alternative explanation for our results is that individuals in the treated group may experience a temporary increase in wealth around the event, which could influence their stock market participation and investment decisions. Specifically, Diwali is often associated with gifts and bonuses and perhaps such a change in liquidity or disposable wealth might lead them to be more willing to participate in the stock market. Additionally, with greater perceived or actual wealth, they may be more inclined to hold onto investments for the long term, driven by a sense of abundance or optimism about future returns.[21]

Since our data links individual activity within the bank across their savings and checking accounts, and credit cards, we examine changes in net wealth of individuals around the events. Across the different accounts, we estimate:

$$Y_{i,t} = \sum_{k=-5}^{5} \beta_k \left\{ Treated_i \times Day(k)_t \right\} + \alpha_i + \gamma_t + \epsilon_{i,t}, \tag{6}$$

where i and t denote the individual and date, and $Day(k)_t$ is a dummy equal to one if date t corresponds to k days before/after Diwali's Muhurat trading day. α_i and γ_t denote individual and date fixed effects respectively. Standard errors are clustered at the investor and day levels. We consider various dependent variables described below.

Online Appendix Figure IAC5 plots the coefficients (β_k) and their corresponding 95% confidence intervals on each day around the event. In Panel A, the dependent variable is the arcsinh of the individual's checking account balance. We see that prior to the event, the average checking account balances are slightly higher while after the event they become close to zero, with both sets of coefficients statistically indistinguishable from zero. In Panel B, the dependent variable is the arcsinh of the difference between credit and debit amounts, further breaking down the amounts received or transferred (net credit-debit). We again see that there is no change in the amount of cash received or transferred to other accounts.

[21] Note that such argument(s) apply to religious festivals in general and should result in similar patterns of stock market participation around religious events of similar cultural significance, unless the behavior is influenced by the messaging conveyed by the specific event. In the subsequent subsection, we formally test for changes in investment decisions around other religious events driving our results.

Next, in Online Appendix Figure IAC6, we examine ATM transactions. In Panel A, the dependent variable is a dummy equal to one if we observe an ATM withdrawal on the individual's account on that day. It shows that the likelihood to withdraw money from ATM jumps by 0.5% the day before Diwali for treated individuals. Moreover, in Panel B, where the dependent variable is the arcsinh of the withdrawn amount, we find that the amount withdrawn jumps by about 0.5%, which is substantially smaller than the 30% in the amount traded. In terms of economic magnitude, conditional on withdrawing, the median withdrawn amount is ₹3,500 with the average being ₹7,141. In contrast, conditional on trading, the median trading amount is ₹5,700 with the average being ₹21,000 (cf. Table 2).

Lastly, in Online Appendix Figure IAC7, we examine credit card transactions. Approximately 1.2% of individual-days observations correspond to day with credit card transaction. Conditional on a day with transaction, the median daily amount is ₹1,231 with the average being ₹50,007. In Panel A, the dependent variable is a dummy variable equal to one if we observe a credit card transaction on the individual's account on that day. In Panel B, the dependent variable is the arcsinh of the transaction amount. Across both panels, we do not see a change in credit card transaction activities.

An important caveat of this analysis is that we do not have data on individuals' physical off-account cash and commodity holdings. It is common for people to purchase gold, silver, and other metals around this time, as it is considered auspicious and are associated with prosperity and good fortune. At the same time, investors may perceive holding large quantities of gold (a traditional store of value) as having a higher opportunity cost, or have different return expectations on gold, compared to stocks. Consequently, they may reallocate their wealth into equities during Diwali, driven by the perception of better returns in stocks over gold. This shift, in theory, could increase stock market participation.

Unfortunately, while our tests assuage general concerns regarding wealth effects driving our results, the data do not allow us to test these specific explanations. Therefore, in the subsequent section, we perform additional tests to rule out these and other such broader alternative explanations for our main findings.

5.2 Trading around Other Religious Events

As a reminder, our baseline tests show a differential propensity in stock market investments among treated and control groups, around Diwali. Therefore, if the increased activity of the treated group on Muhurat trading day is indeed driven by Diwali's specific religious messaging, we should not observe similar patterns on (i) other religious events of similar significance that lack this specific messaging, and (ii) religious events of similar significance among control religious groups.

We follow Iyer (2018) to generate a list of religious events for the treated and control groups. They conducted a survey of 568 religious organizations in India and classify their largest religious gatherings which are festivals. These gatherings range from fewer than 1,000 to more than 500,000 devotees. We then hand-collect information on these events (Online Appendix Table IAB3 presents the list of events and their cultural significance) and estimate the following regression specification:

$$Y_{i,t} = \beta\, Treated_i \times \{Other\ Hindu\ Event\}_t + \kappa\, Affected\, Control_i \times \{Non-Hindu\ Event\}_t + \gamma_i + \delta_t + \epsilon_{i,t}, \tag{7}$$

where the observations are at the account (i) and date (t) levels. The variable $\{Other\ Hindu\ Event\}_t$ is a dummy equal to 1 if day t corresponds to other Hindu religious events of similar cultural significance (excluding Diwali) and $\{Non-Hindu\ Event\}_t$ is a dummy equal to 1 if day t corresponds to non-Hindu religious events of similar cultural significance. $Treated_i$ is a dummy indicating whether individual i is inferred to be Hindu while $Affected\ Control_i$ is a dummy variable equal to one if individual i is affected by the non-Hindu religious event according to her inferred religion. γ_i and δ_t are individual and date fixed effects respectively. Standard errors are double-clustered at the individual and day levels.

As before, the dependent variables $Y_{i,t}$ are either a dummy variable equal to 1 if the individual trades, buys or sells on day t, or a continuous variable defined as the inverse hyperbolic sine (arcsinh) of the amount spent on trading, buying or selling on day t. Importantly, for both types of dependent variable we include non-trading days in our sample.

Table 7 presents the results from this exercise. Compared to our baseline results, in Columns (1), (3), and (5), if anything, we see that individuals from the treated groups are less likely trade—buy

or sell, on other days of similar religious significance.[22] In the second set of tests, in Columns (2), (4), and (6), we identify religious events of similar significance for the control religious group. The benefit of this empirical specification is that it allows us to contrast the effects for individuals across religious groups, holding fixed the religious significance of the events to them. Our estimates suggest, in contrast to our baseline findings that individuals from treated group are significantly more active in the stock market on Muhurat trading day, that individuals in the control group are less likely to trade—buy or sell, on their respective religious event days.

Note that these tests help assuage additional concerns that investors in the treated group might be influenced by peers within their community, which could lead to increased market activity. If other investors in their social circles are actively trading, they might feel compelled to trade as well. In contrast our results suggest that on these "neutral" days of similar religious significance but absent the specific messages, we do not find evidence that treated group exhibits significantly more active trading than the control group.

Taken together, our results are most consistent with the explanation that the effects on stock market investments that we document in our baseline likely stem from religious messaging associated with Diwali.

Conclusion

Our study provides novel evidence on how religious beliefs can foster stock market participation, particularly when those beliefs are associated with specific messages of prosperity and fortune. In the context of Muhurat trading in India, an auspicious session held during the Diwali festival, we find that individuals from religiously aligned groups are significantly more likely to engage in stock market activity and increase stock purchases on this day, relative to other individuals, leading to a significant aggregate retail buy order imbalance. Further, these individuals are less inclined to sell their Diwali-purchased stocks post-event, suggesting that the motivation for participation extends beyond short-term speculation.

[22]Note that we exclude Diwali itself from the set of events in the analyses. Furthermore, for events where the day of the event coincides with the closing of the stock market, we redefine the day of the event as the first day after the event the stock markets are open.

Importantly, these patterns are unique to Diwali and do not appear around other religious or secular events that lack such specific messaging. This absence of similar behavior on other days rules out alternative explanations, including effects driven purely by increased wealth, peer influence, or general religiosity. Our findings highlight a novel mechanism through which religious messaging can promote stock market engagement in a non-speculative way, adding to our understanding of how cultural and religious factors shape economic behavior.

Our findings are relevant in the context of the recent rise in faith-based and ethical investments. Most recently, the Vatican in January 2023 issued the *Mensuram Bonam* ("A Good Measure"), a guide for Catholic investors outlining faith-based criteria to be taken into consideration to ensure investments promote the common good. Our results on religious beliefs fostering non-speculative stock market participation and investments, suggests that policymakers and financial institutions could leverage culturally resonant messages to encourage broader financial inclusion. For example, religiously principled investment options, such as Sharia-compliant funds or other faith-based financial products, could be expanded and promoted in ways that align with the values of different groups, potentially enhancing participation without encouraging excessive risk-taking.

Figures

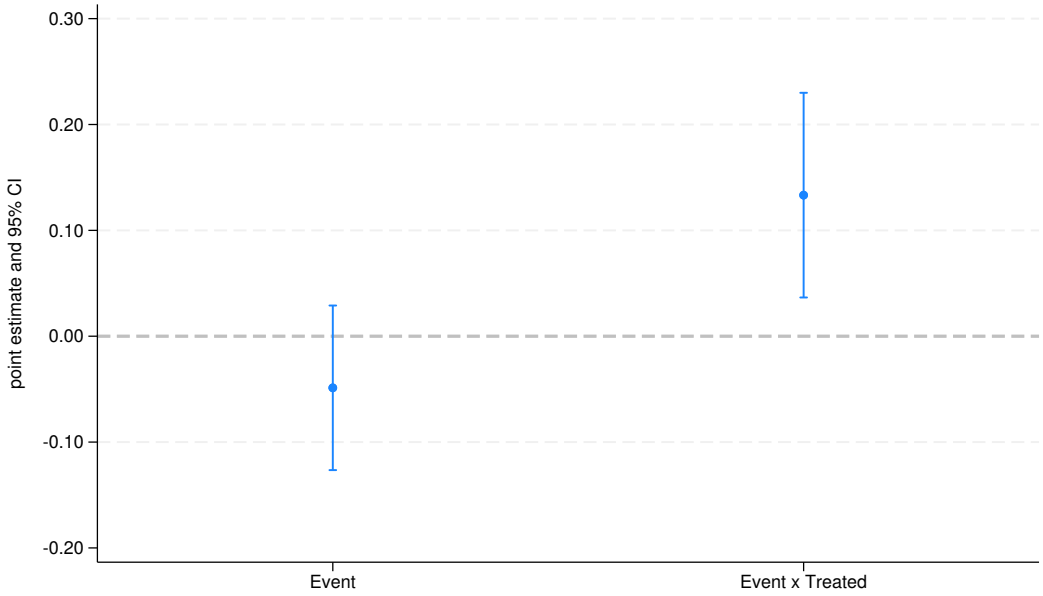


Figure 1: New brokerage account openings around Diwali events. This figure plots the estimates β_1 ("Event") and β_2 ("Event $\times$ Treated") of a $naccounts_{imst} = \exp\{\beta_0 + \beta_1 Event_t + \beta_2(Treated_i \times Event_t) + \gamma_{ims} + \varepsilon_{imst}\}$, where $naccounts_{ismt}$ is the number of brokerage accounts opened by individuals of treated group i on date t in state s and month-of-year m. Given the count nature of our dependent variable, we estimate a Poisson specification and control for treated $\times$ state $\times$ month-of-year fixed effects, allowing us to rule out concerns about differences in region-specific seasonality in account opening across treated and control groups.

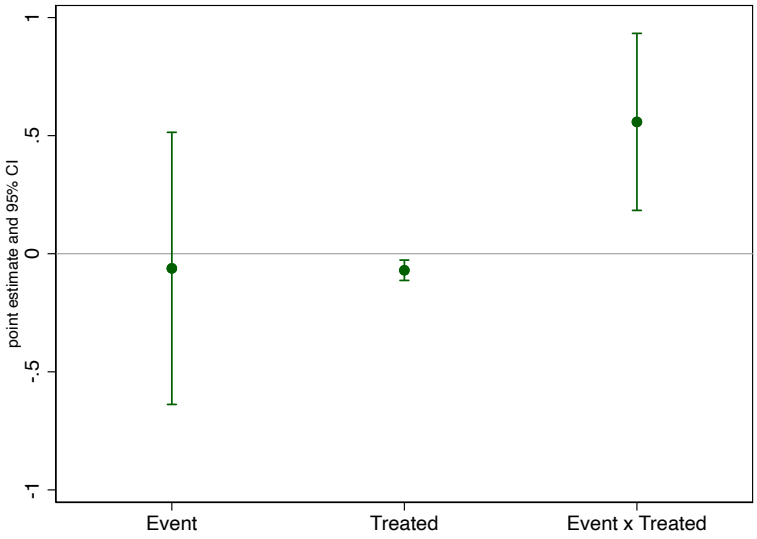
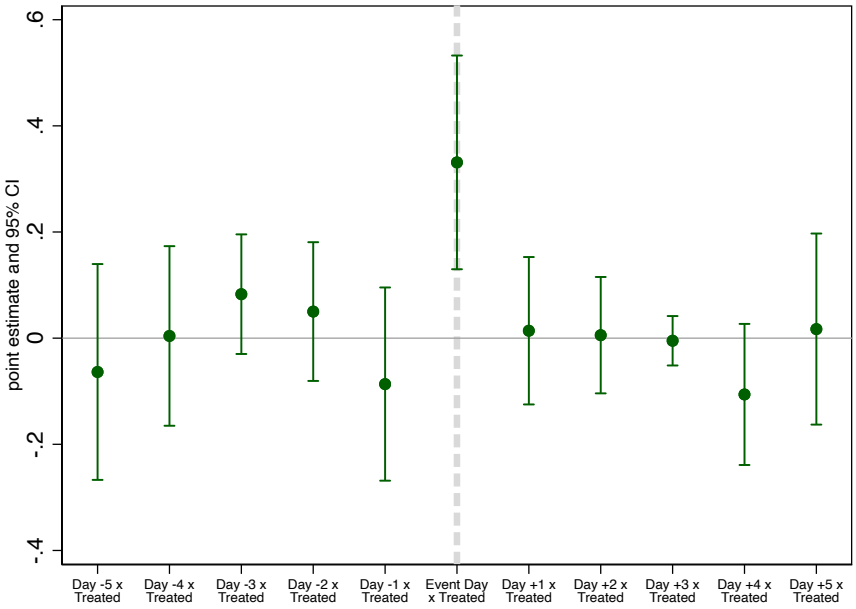


Figure 2: Likelihood to trade for the first time on Diwali event. This figure plots the estimates β_1 ("Event"), β_2 ("Treated") and β_3 ("Event $\times$ Treated") of a Cox hazard model of the form $h_i(t) = h_0(t) \exp\{\beta_0 + \beta_1 Event_t + \beta_2 Treated_i + \beta_3\{Event_t \times Treated_i\} + \epsilon_{i,t}\}$, where observations are at the account (i) and date (t) level, between the account opening date and the first trade date. For every account-day, $h_i(t)$ is investor i's probability of trading for the first time on day t conditional on not having traded prior to day t, and $h_0(t)$ is the baseline hazard. $Event$ is a dummy equal to 1 if the day corresponds to the Diwali's Muhurat trading day, and $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. Horizontal bars correspond to 95% confidence intervals. Standard errors are clustered at the day level.

Panel A: Total amount traded



Panel B: Amount spent on buy and sell trades

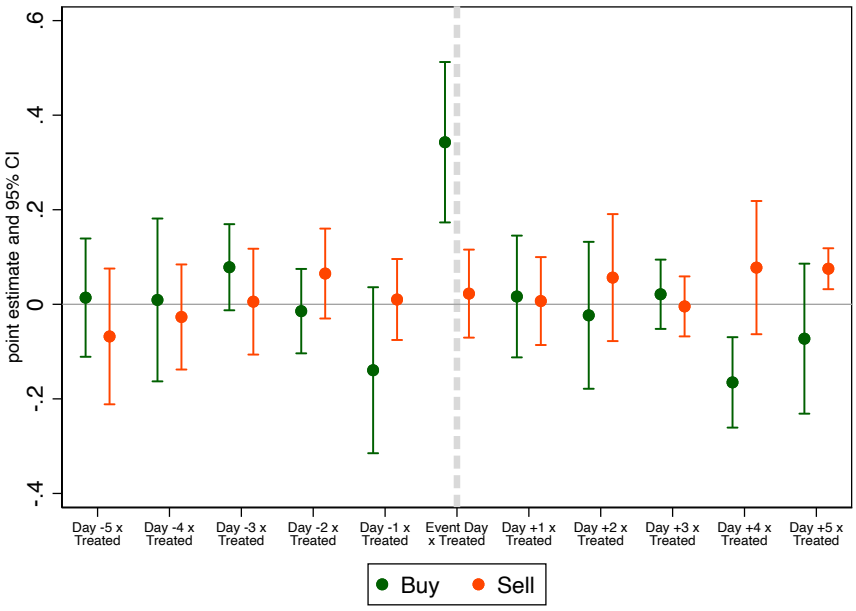


Figure 3: Dynamics of the traded amount around Diwali events. This figure plots the coefficients β_k on each day in equation: $Y_{i,t} = \sum_{k=-5}^{5} \beta_k \{Treated_i \times Day(k)_t\} + \alpha_i + \gamma_t + \epsilon_{i,t}$, where i and t denote the individual and date, and $Day(k)_t$ is a dummy equal to one if date t corresponds to k days before/after a Diwali day. $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. α_i and γ_t denote individual and date fixed effects respectively. The dependent variable is the arcsinh of the amount traded in Panel A, and the arcsinh of the amount spent on buy and sell trades in panel B. Horizontal bars correspond to 95% confidence intervals. Standard errors are double-clustered at the investor and day levels.

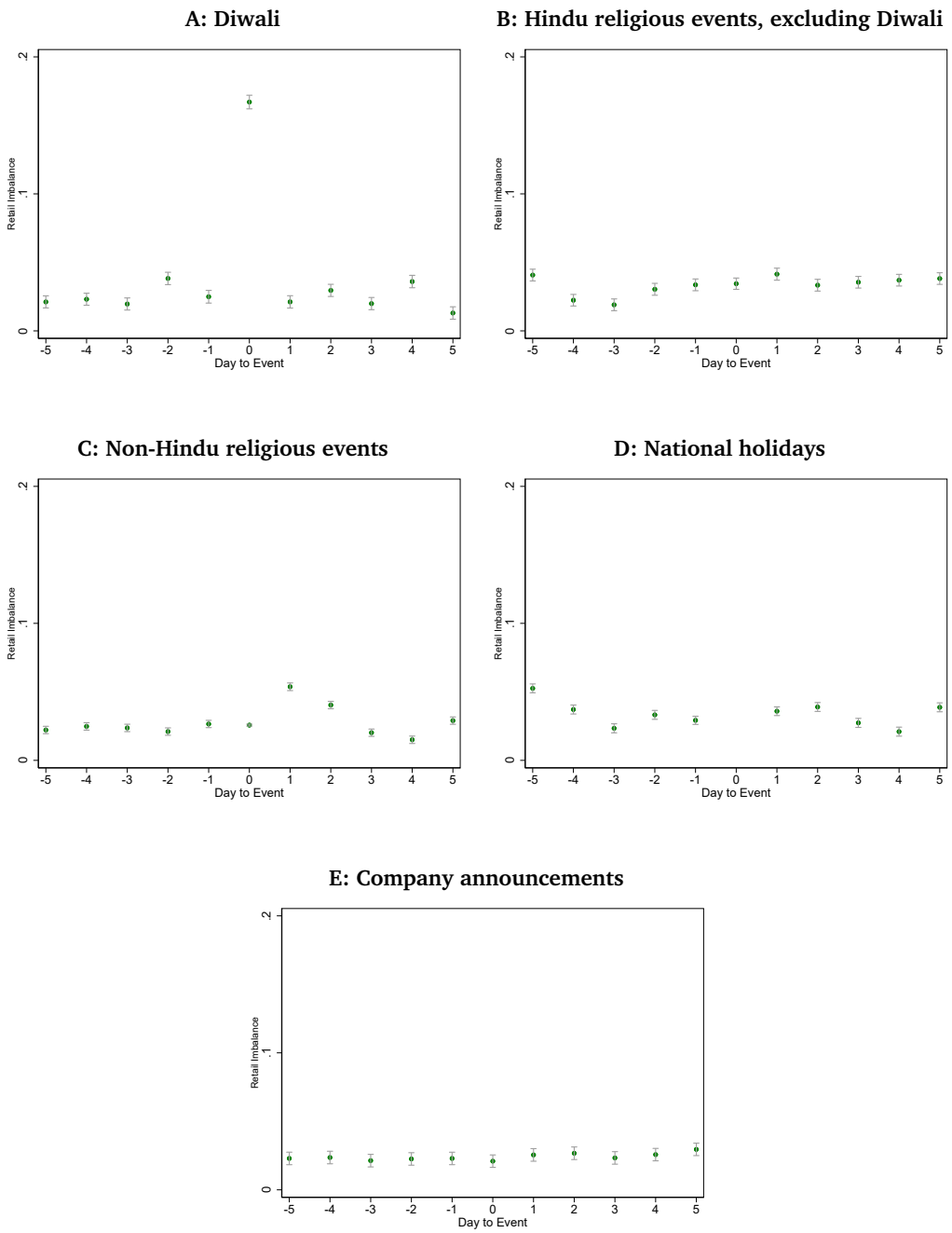


Figure 4: Aggregate retail imbalance around events. This figure plots the retail imbalance mean with 95% confidence intervals around the 5 days before and after a particular event for stocks trading on the National Stock Exchange (NSE). Retail imbalance is computed as $\frac{(buy+sell)}{buy-sell}$, where *buy* and *sell* are the number of buy and sell trades, respectively. The event date refers to Diwali, Hindu national religious events excluding Diwali, non-Hindu religious events, national holidays and firm announcement dates in Panels A-E, respectively.

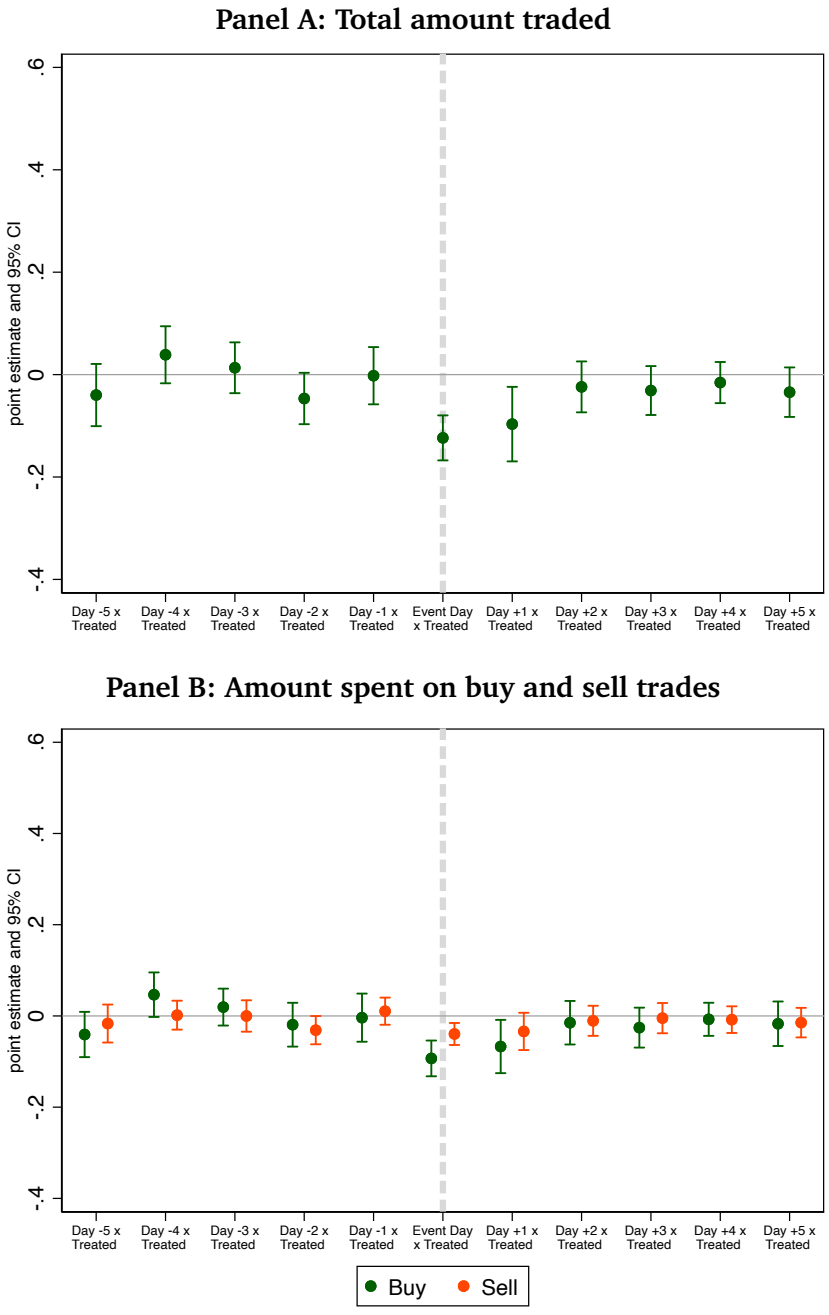


Figure 5: Dynamics of the traded amount around other religious events. This figure plots the coefficients β_k on each day in equation: $Y_{i,t} = \sum_{k=-5}^{5} \beta_k \{Affected_i \times Day(k)_t\} + \alpha_i + \gamma_t + \epsilon_{i,t}$, where i and t denote the individual and date, and $Day(k)_t$ is a dummy equal to one if date t corresponds to k days before/after a religious event day (which is not Diwali). $Affected_i$ is a dummy variable equal to one if individual i is affected by the religious event according to her inferred religion. α_i and γ_t denote individual and date fixed effects respectively. The dependent variable is the arcsinh of the amount traded in Panel A, and the arcsinh of the amount spent on buy and sell trades in panel B. Horizontal bars correspond to 95% confidence intervals. Standard errors are clustered at the investor and day levels.

Tables

Table 1: List of Muhurat trading dates and timings

This table lists the dates and timings of Muhurat trading session on account of Diwali covered in our sample. All trades executed in the trading session result in settlement obligations. They are available at Circulars.

Year	Date	Timings
2012	November 13, 2012	15:30 to 17:20
2013	November 3, 2013	18:00 to 19:50
2014	October 23, 2014	18:15 to 19:50
2015	November 11, 2015	17:30 to 19:05
2016	October 30, 2016	18:15 to 19:50
2017	October 19, 2017	18:15 to 19:50
2018	November 7, 2018	17:00 to 18:50
2019	October 27, 2019	17:45 to 19:40

Table 2: Broker and National Stock Exchange (NSE) Dataset Summary Statistics This table lists the account level (Panel A), account-day level (Panels B and C), and account-stock-day level (Panels D and E) summary statistics from our broker dataset. In addition, Panel F presents summary statistics of daily transactions aggregated at the stock-day level, on the National Stock Exchange over our sample period covering 2012 to 2019 for all retail trades. In Panel A, Age refers to age of the account holder as of June 2021, and income refers to the numeric midpoint in the income range given by the data provider. Panel C restricts the account-day sample to observations on days when individuals trade at least one stock. Panel E restricts the account-stock-day sample to observations on days when individuals sell at least one stock.

Variable	Obs	Mean	Sd	5%	25%	50%	75%	95%
Panel A: Account level								
Age	24,112	42.77	13.75	27.00	32.00	38.00	51.00	70.00
Male	24,112	0.73	0.44	0.00	0.00	1.00	1.00	1.00
Income (₹100,000s)	24112	8.12	10.84	3.00	3.00	3.00	7.00	23.00
Treated	24,112	0.90	0.30	0.00	1.00	1.00	1.00	1.00
Panel B: Account-Day level (unconditional sample)								
Total Portfolio Value (₹1000s)	6129409	108703.79	421710.50	138.52	4,252.52	18,966.10	71,594.26	431501.53
Trade	6129409	0.08	0.28	0.00	0.00	0.00	0.00	1.00
Buy	6129409	0.06	0.24	0.00	0.00	0.00	0.00	1.00
Sell	6129409	0.03	0.18	0.00	0.00	0.00	0.00	0.00
Amount Traded (₹1000s)	6129409	1,781.44	23,926.32	0.00	0.00	0.00	0.00	3,972.00
Amount Buy Trades (₹1000s)	6129409	1,029.04	15,511.92	0.00	0.00	0.00	0.00	1,184.98
Amount Sell Trades (₹1000s)	6129409	752.41	15,396.19	0.00	0.00	0.00	0.00	0.00
Panel C: Account-Day level (trade-conditioned sample)								
Total Portfolio Value (₹1000s)	515,151	231037.24	671474.69	400.51	13,736.50	55,052.65	189020.86	962204.38
Buy	515,151	0.74	0.44	0.00	0.00	1.00	1.00	1.00
Sell	515,151	0.38	0.49	0.00	0.00	0.00	1.00	1.00
Amount Traded (₹1000s)	515,151	21,196.12	79,999.30	192.77	1,986.00	5,722.99	16,209.96	78,565.57
Amount Buy Trades (₹1000s)	515,151	12,243.76	52,207.80	0.00	0.00	2,350.10	8,769.65	48,384.00
Amount Sell Trades (₹1000s)	515,151	8,952.37	52,411.78	0.00	0.00	0.00	4,185.50	37,485.75
Panel D: Account-Stock-Day level (unconditional sample)								
Trade	31875258	0.03	0.17	0.00	0.00	0.00	0.00	0.00
Sell	31875258	0.02	0.14	0.00	0.00	0.00	0.00	0.00

Continued next page

Summary statistics (continued)

Variable	Obs	Mean	Sd	5%	25%	50%	75%	95%
Buy	31875258	0.01	0.10	0.00	0.00	0.00	0.00	0.00
Amount Traded (₹1000s)	31875258	342.56	7,457.99	0.00	0.00	0.00	0.00	0.00
Amount Buy (₹1000s)	31875258	197.88	5,416.66	0.00	0.00	0.00	0.00	0.00
Amount Sell (₹1000s)	31875258	144.68	5,132.13	0.00	0.00	0.00	0.00	0.00
Time Owned (Days)	31875258	137.67	149.83	5.00	31.00	86.00	192.00	452.00
Panel E: Account-Stock-Day level (sale-conditioned sample)								
Trade	2,567,350	0.16	0.37	0.00	0.00	0.00	0.00	1.00
Sell	2,567,350	0.05	0.22	0.00	0.00	0.00	0.00	1.00
Buy	2,567,350	0.11	0.32	0.00	0.00	0.00	0.00	1.00
Amount Traded (₹1000s)	2,567,350	2,441.65	20,333.53	0.00	0.00	0.00	0.00	9,611.33
Amount Buy (₹1000s)	2,567,350	645.31	9,577.35	0.00	0.00	0.00	0.00	48.26
Amount Sell (₹1000s)	2,567,350	1,796.33	18,001.26	0.00	0.00	0.00	0.00	6,262.52
Time Owned (Days)	2,567,350	99.17	129.52	2.00	15.00	49.00	132.00	366.00
Panel F: Stock-Day level (NSE retail trades sample)								
Buy	2,816,089	619.06	2,129.21	3.00	23.00	86.00	371.00	2,913.00
Sell	2,816,089	584.49	2,067.89	3.00	22.00	78.00	333.00	2,781.00
Amount Buy (₹1000s)	2,816,089	54,150.56	263,175.37	8.42	312.07	2,619.61	17,243.68	244,377.64
Amount Sell (₹1000s)	2,816,089	54,738.50	267,882.73	8.94	321.60	2,712.23	17,473.94	247,097.69
Retail imbalance	2,816,089	0.03	0.25	-0.36	-0.11	0.02	0.17	0.42

Table 3: Trading behavior on Diwali day

Regressions are estimated at the individual-day level. In Panel A, the dependent variable is a variable equal to 100 if the individual trades on that day, 0 otherwise. In Panel B, the dependent variable is the arcsinh of the amount traded by the individual on that day. $Event$ is a dummy equal to 1 if the day corresponds to the Diwali's Muhurat trading day, and $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. Standard errors (in parentheses) are double-clustered at the individual and day level. ***, ** and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Likelihood to trade

	Trade × 100				
	(1)	(2)	(3)	(4)	(5)
Event Day × Treated	1.060***	0.887**	0.885**	0.988***	0.946***
	(0.345)	(0.388)	(0.393)	(0.332)	(0.345)
Event Day	-1.098	-1.342			
	(1.313)	(0.965)			
Religion FE	Yes	No	No	No	No
Individual FE	No	Yes	Yes	Yes	Yes
Date FE	No	No	Yes	No	No
State × Date FE	No	No	No	Yes	No
District × Date FE	No	No	No	No	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.00	0.12	0.13	0.13	0.17

Panel B: Amount traded

	Amount Traded				
	(1)	(2)	(3)	(4)	(5)
Event Day × Treated	0.195***	0.167***	0.167***	0.179***	0.172***
	(0.051)	(0.059)	(0.060)	(0.053)	(0.054)
Event Day	-0.240	-0.278*			
	(0.205)	(0.153)			
Religion FE	Yes	No	No	No	No
Individual FE	No	Yes	Yes	Yes	Yes
Date FE	No	No	Yes	No	No
State × Date FE	No	No	No	Yes	No
District × Date FE	No	No	No	No	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.00	0.12	0.13	0.13	0.16

Table 4: Buying and selling behaviors on Diwali day

Regressions are estimated at the individual-day level. In Panel A, in Columns (1) and (2) (resp. (3) and (4)), the dependent variable is a variable equal to 100 if the individual buys (resp. sells) on that day, 0 otherwise. In Panel B, in Columns (1) and (2) (resp. (3) and (4)), the dependent variable is the arcsinh of the amount spent on buy (resp. sell) trades by the individual on that day. $Event$ is a dummy equal to 1 if the day corresponds to the Diwali's Muhurat trading day, and $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. Standard errors (in parentheses) are double-clustered at the individual and day level. ***, ** and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Likelihood to buy and sell

	Buy × 100			Sell × 100		
	(1)	(2)	(3)	(4)	(5)	(6)
Event Day × Treated	1.054***	1.133***	1.087***	-0.318	-0.143	-0.147
	(0.305)	(0.263)	(0.296)	(0.220)	(0.230)	(0.201)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	No	No	Yes	No	No
State × Date FE	No	Yes	No	No	Yes	No
District × Date FE	No	No	Yes	No	No	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.11	0.11	0.15	0.09	0.09	0.13

Panel B: Amount spent on buy and sell trades

	Amount Buy Trades			Amount Sell Trades		
	(1)	(2)	(3)	(4)	(5)	(6)
Event Day × Treated	0.193***	0.199***	0.193***	-0.043	-0.015	-0.017
	(0.046)	(0.042)	(0.045)	(0.034)	(0.036)	(0.032)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	No	No	Yes	No	No
State × Date FE	No	Yes	No	No	Yes	No
District × Date FE	No	No	Yes	No	No	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.11	0.11	0.14	0.09	0.09	0.13

Table 5: Buying new versus existing holdings

Regressions are estimated at the individual-day level. In Panel A, in Columns (1) to (3) (resp. (4) to (6)), the dependent variable is a variable equal to 100 if the individual buys exclusively new stocks (resp. existing holdings) on that day, 0 otherwise. In Columns (7) to (9), the dependent variable is equal to 100 if the individual buys both new stocks and existing holdings on that day, 0 otherwise. In Panel B, in Columns (1) to (3) (resp. (4) to (6)), the dependent variable is the arcsinh of the amount spent by the individual when buying exclusively new stocks (resp. existing hodlings). In Columns (7) to (9), the dependent variable is the amount spent by the individual when buying both new stocks and existing holdings. $Event$ is a dummy equal to 1 if the day corresponds to the Diwali's Muhurat trading day, and $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. Standard errors (in parentheses) are double-clustered at the individual and day level. ***, ** and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Likelihood to buy

	Buy × 100								
	New Holdings			Existing Holdings			Both New and Existing		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Event Day × Treated	0.779***	0.699***	0.670***	-0.012	0.173	0.138	0.287**	0.261**	0.279**
	(0.151)	(0.189)	(0.210)	(0.299)	(0.211)	(0.197)	(0.126)	(0.123)	(0.136)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	No	No	Yes	No	No	Yes	No	No
State × Date FE	No	Yes	No	No	Yes	No	No	Yes	No
District × Date FE	No	No	Yes	No	No	Yes	No	No	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.04	0.05	0.09	0.10	0.10	0.13	0.04	0.05	0.08

Panel B: Amount spent on buy

	Amount Buy Trades								
	New Holdings			Existing Holdings			Both New and Existing		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Event Day × Treated	0.125***	0.111***	0.106***	0.019	0.042	0.039	0.049**	0.046**	0.048**
	(0.024)	(0.031)	(0.033)	(0.042)	(0.033)	(0.031)	(0.020)	(0.020)	(0.022)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	No	No	Yes	No	No	Yes	No	No
State × Date FE	No	Yes	No	No	Yes	No	No	Yes	No
District × Date FE	No	No	Yes	No	No	Yes	No	No	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.04	0.05	0.09	0.09	0.10	0.13	0.04	0.05	0.08

Table 6: Likelihood to sell stocks purchased on Diwali day

Regressions are estimated at the individual-stock-day level. In both panels, the dependent variable is a variable equal to 100 if the individual sells (fully or partially) the stock on that day. Panel A uses the full sample, i.e., including days when no trading occurs. Panel B restricts the sample to observations where the individual sells on that day. $Purchased\ on\ Event$ is a dummy equal to 1 if some shares of the stock were purchased on Muhurat trading day. If the stock is sold off and repurchased later, it is considered a new position and the dummy is reset to zero. $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. $Time\ Owned$ fixed effects control for the number of days the stock has been held into the account. $Gain$ a dummy indicating whether the stock is trading at a paper gain relative to its weighted-average purchase price. Additional control variables include the return since purchase if the asset is in paper loss (gain) and zero otherwise, as well as their interactions with the squared root of the number days the stock has been held. Standard errors (in parentheses) are double-clustered at the individual and day level. ***, ** and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Unconditional sample

	Sell × 100			
	(1)	(2)	(3)	(4)
Purchased on Event	0.159	0.222*	0.202*	0.209*
	(0.117)	(0.117)	(0.118)	(0.118)
Purchased on Event × Treated	-0.216*	-0.232*	-0.212*	-0.220*
	(0.122)	(0.121)	(0.123)	(0.122)
Control Variables	No	No	No	Yes
Individual FE	Yes	Yes	Yes	Yes
Stock × Date FE	Yes	Yes	Yes	Yes
Time Owned FE	No	Yes	No	No
Gain × Time Owned FE	No	No	Yes	Yes
Observations	31875258	31875258	31875258	31875258
R^2	0.07	0.08	0.08	0.08

Panel B: Sale-conditioned sample

	Sell × 100			
	(1)	(2)	(3)	(4)
Purchased on Event	2.089**	2.273***	2.143**	2.134**
	(0.835)	(0.846)	(0.866)	(0.864)
Purchased on Event × Treated	-2.029**	-2.057**	-1.889**	-1.880**
	(0.900)	(0.910)	(0.932)	(0.931)
Control Variables	No	No	No	Yes
Individual FE	Yes	Yes	Yes	Yes
Stock × Date FE	Yes	Yes	Yes	Yes
Time Owned FE	No	Yes	No	No
Gain × Time Owned FE	No	No	Yes	Yes
Observations	2,567,350	2,567,350	2,567,350	2,567,350
R^2	0.32	0.33	0.33	0.33

Table 7: Likelihood to trade, buy and sell on other religious-event days

Regressions are estimated at the individual-day level. In Panel A, in Columns (1) and (2), the dependent variable is a variable equal to 100 if the individual trades on that day, 0 otherwise; in Columns (3) and (4), it is a variable equal to 100 if the individual buys any stock on that day, 0 otherwise; in Columns (5) and (6), it is a variable equal to 100 if the individual sells any stock on that day, 0 otherwise. In Panel B, in Columns (1) and (2), the dependent variable is the arcsinh of the amount traded by the individual on that day; in Columns (3) and (4), it is the arcsinh of the amount spent on buy trades by the individual on that day; in Columns (5) and (6), it is the arcsinh of the amount spent on sell trades by the individual on that day. $Other\ Hindu\ Religious\ Event$ is a dummy equal to 1 if the day corresponds to an Hindu religious event except Diwali, and $Non\ Hindu\ Religious\ Event$ is a dummy equal to 1 if the day corresponds to religious event for non-Hindu religions. $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. $Affected\ Control$ is a dummy indicating whether the individual is inferred to be of the religion associated with $Non\ Hindu\ Religious\ Event$. Standard errors (in parentheses) are double-clustered at the individual and day level. ***, ** and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Likelihood to trade

	Trade × 100		Buy × 100		Sell × 100	
	(1)	(2)	(3)	(4)	(5)	(6)
Other Hindu Religious Event × Treated	-0.777***	-0.779***	-0.607***	-0.608***	-0.192**	-0.193**
	(0.170)	(0.170)	(0.157)	(0.157)	(0.090)	(0.090)
Non-Hindu Religious Event × Affected Control		-0.534**		-0.407**		-0.199*
		(0.226)		(0.203)		(0.119)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.13	0.13	0.11	0.11	0.09	0.09

Panel B: Amount spent on trades

	Amount Traded		Amount Buy Trades		Amount Sell Trades	
	(1)	(2)	(3)	(4)	(5)	(6)
Other Hindu Religious Event × Treated	-0.126***	-0.126***	-0.097***	-0.097***	-0.032**	-0.032**
	(0.027)	(0.027)	(0.025)	(0.025)	(0.015)	(0.015)
Non-Hindu Religious Event × Affected Control		-0.091**		-0.071**		-0.034*
		(0.037)		(0.032)		(0.020)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409	6,129,409
R^2	0.13	0.13	0.11	0.11	0.09	0.09

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INTERNET APPENDIX
FOR ONLINE PUBLICATION

A Religion in India

Table IAA1: World Values Survey - Religious Life in India This table presents (weighted) tabulations of two questions related to religion asked in Wave 7 of the World Values Survey in India, for which data was collected over 2017 to 2022. Panel A presents tabulations of a question asking survey respondents how important religion is in their lives, while Panel B presents a tabulation of a question asking the frequency with which respondents attend religious service.

	Frequency (1)	Percent (2)
	Panel A: Question 6 - "Important in life: Religion"	
Don't know	12.22	0.72
Very important	1,086.11	64.19
Rather important	363.58	21.49
Not very important	150.75	8.91
Not at all important	79.35	4.69
	Panel B: Question 171 - "How often do you attend religious service?"	
Don't know	11.25	0.66
More than once a week	391.50	23.14
Once a week	410.81	24.28
Once a month	258.20	15.26
Only on special holy days	357.89	21.15
Once a year	43.89	2.59
Less often	152.82	9.03
Never, practically never	65.64	3.88

Inferring Religion from Last Names. We follow Bhagavatula, Bhalla, Goel, and Vissa (2019); D'Acunto, Ghosh, and Rossi (2024) and create a data-driven mapping of last names into distinct cultural groups. To identify religion, we leverage the fact that last names in India are strong indicators of both religion and caste, and that marriages in India are overwhelmingly intra-religious.

We utilize data from three major matrimonial websites, which provide the first and last names of approximately 26,700,000 users, along with their self-reported religions. Given that the relationship between last name and religion is not always one-to-one, we employ these data to assign probabilities indicating the likelihood that a particular last name corresponds to each religion within a specific region. The matrimonial dataset decomposes religion into the following seven categories: Hindu, Jain, Muslin, Sikh, Christian, Buddhist and Parsi.

Our last name to religion mapping strategy proceeds in three steps. First, we for each last name in the matrimonial database, we compute the count of the last name by state and religion, and calculate the probability of religion by last name and religion within state. We then select the most likely religion for each last name and state combination and assign that last name and state combination this most likely religion. If multiple religions are equally likely for a particular last name and state combination, we do not assign a religion. Within this dataset, we can assign a religion for approximately 98% of last name and state combinations. Finally, we match the most likely religion for each last name and state combination with the accounts in the broker dataset.

Among the 27,250 account holders in the broker dataset, we can match around 97% with a last name and state in the matrimonial database with an assigned religion. Given the low sample size of Buddhist and Parsi populations in our broker

dataset, we focus on the following five main religious groups for our analysis: Hindu, Jain, Muslim, Sikh and Christian. Finally, we drop any account holders which we cannot match to a religion, arriving at a database of accounts of 26,353 individuals. The distribution of religion in our final sample of account holders is indicated in Table IAA2.

Table IAA2: Distribution of religion in broker dataset
This table presents the distribution of religion for each account holder in the broker dataset.

Religion	Count	Percent
Hindu	23,729	90.04
Jain	1,149	4.36
Muslim	681	2.58
Sikh	534	2.03
Christian	260	0.99

B Religious Events and Messaging

The Muhurat trading session, organized by the Bombay Stock Exchange and the National Stock Exchange, is advertised widely by both exchanges and individual brokers. The largest newspapers in India, including *The Times of India* and *Hindustan Times*, publish announcements of the date and time of the Muhurat trading session each year.[23] Figure IAB2 also presents examples of newspaper articles over our sample period referencing Muhurat trading, with references to the "auspicious" nature of the event, as well as "wealth and prosperity." The salience of the event and religious messaging are featured prominently in both the announcements and advertising. For example, many articles indicate this is an "auspicious" trading session, and including other religious messaging and imagery to accompany the announcements. Advertisements by the National Stock Exchange also reflects this sentiment, as Figure IAB1 demonstrates. In particular, these advertisements reference the auspicious nature of the trading session in addition to wealth and prosperity, with religious imagery.

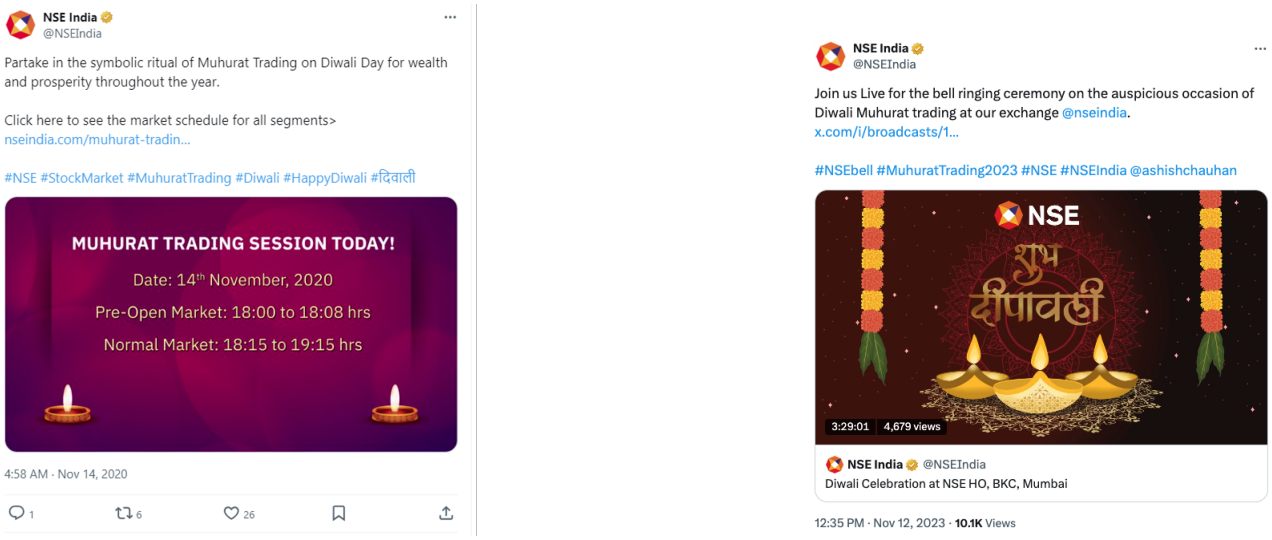


Figure IAB1: National Stock Exchange Muhurat Trading Advertising. This figure presents examples of Muhurat trading advertising on Twitter by the National Stock Exchange. The Tweets are available at https://x.com/NSEIndia/status/1327476084028260352 and https://x.com/NSEIndia/status/1723680845830168685.

[23] See, for example, https://timesofindia.indiatimes.com/business/india-business/muhurat-trading-2019-all-you-need-to-know/articleshow/71775284.cms and https://economictimes.indiatimes.com/markets/stocks/news/nse-bse-to-conduct-60-minute-muhurat-trading-on-diwali/articleshow/49616210.cms?from=mdr.

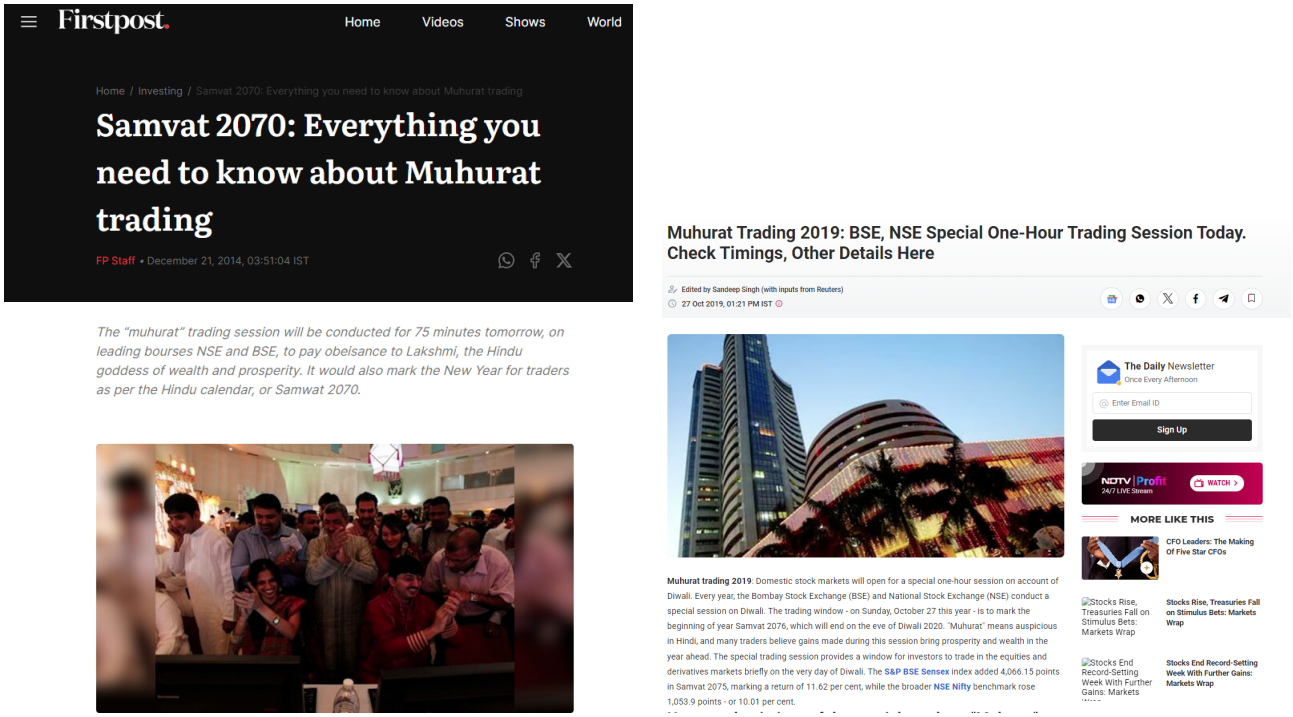


Figure IAB2: Newspaper References to Muhurat Trading. This figure presents examples of newspapers articles announcing Muhurat Trading. These articles are available at https://www.firstpost.com/investing/samvat-2070-everything-you-need-to-know-about-muhurat-trading-1207861.html and https://www.ndtvprofit.com/business/muhurat-trading-timings-2019-diwali-bse-nse-to-conduct-special-muhurat-trading-today-diwali-2019-2123294.

The particular broker for which we have data for also sends emails to clients indicating the date and time of Muhurat trading, while referencing the religious significance of the event. Figure IAB3 is an example of an email sent by the broker to advertise the 2024 Muhurat trading session.

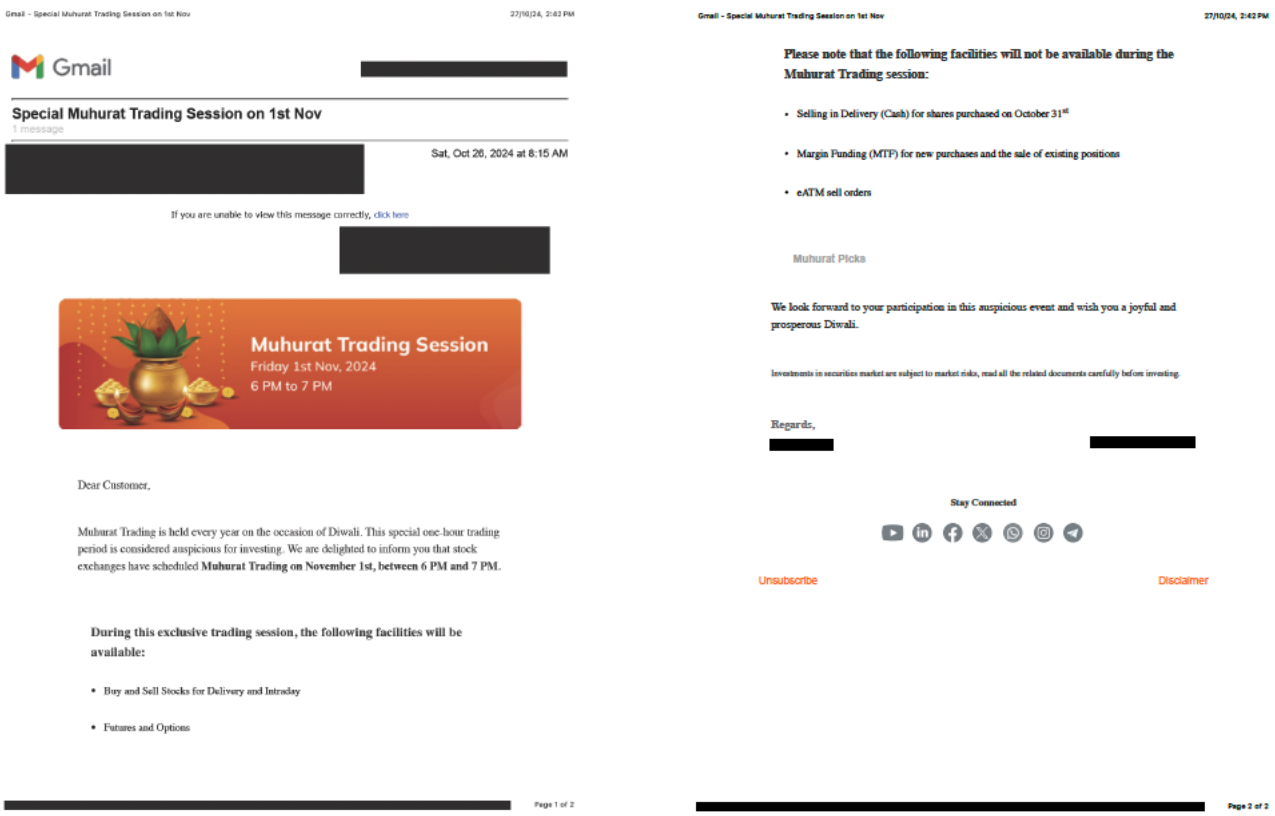


Figure IAB3: Muhurat Trading Announcement Email. This figure presents an example of an email sent out by the broker for which we have individual retail trading data to clients for the 2024 Muhurat trading session.

Interest in the term "Muhurat Trading" in online searches also peaks during the month of Diwali when the special trading session takes place. Figure IAB4 plots the search interest in "Muhurat Trading" over our sample period, with the vertical dashed lines representing the month of Diwali and the trading sessions.

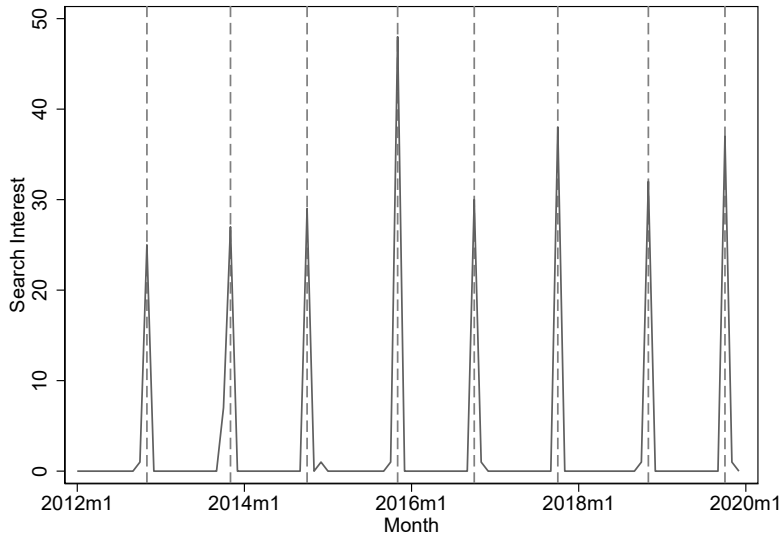


Figure IAB4: Google Trends Search Interest for "Muhurat Trading." This figure plots the time series of Google Trends search interest for the term "Muhurat Trading" from 2012 to 2019 in India nationally. The vertical dashed lines represent the month of the Muhurat trading session each year.

Table IAB3: Festivals, Religion, and Cultural Significance

SI No	Festivals	Religion	Cultural Significance
1	Diwali	Hindu, Jain	Celebrates the victory of light over darkness and good over evil, associated with the return of Lord Rama to Ayodhya.
2	Holi	Hindu	Festival of colors, celebrating the arrival of spring and the triumph of good over evil.
3	Navaratri	Hindu	A nine-day festival honoring the goddess Durga and symbolizing the triumph of good over evil.
4	Onam	Hindu	Harvest festival celebrated in Kerala, marking the return of the legendary King Mahabali.
5	Ganesh Chaturthi	Hindu	Celebration of the birth of Lord Ganesha, the remover of obstacles.
6	Ram Navami	Hindu	Marks the birth of Lord Rama, the seventh avatar of Vishnu.
7	Janmashtami	Hindu	Celebrates the birth of Lord Krishna, the eighth avatar of Vishnu.
8	Dussehra	Hindu	Commemorates the victory of Lord Rama over the demon king Ravana.
9	Mahavir Jayanti	Jain	Celebrates the birth of Lord Mahavira, the 24th Tirthankara in Jainism.
10	Vaisakhi	Sikh	Harvest festival and also marks the Sikh New Year and the formation of the Khalsa.
11	Guru Gobind Singh Sahib	Sikh	Observes the birth anniversary of Guru Gobind Singh, the tenth Sikh Guru.
12	Bandi Chhor Divas	Sikh	Celebrates the release of Guru Hargobind and his followers from imprisonment.
13	Guru Nanak Gurpurab	Sikh	Celebrates the birth of Guru Nanak, the founder of Sikhism.
14	Ramadan	Muslim	Holy month of fasting, prayer, and reflection, culminating in Eid al-Fitr.
15	Eid al-Fitr	Muslim	Festival marking the end of Ramadan, with feasts and celebrations.
16	Muharram	Muslim	Observance of the Islamic New Year and a period of mourning for the martyrdom of Imam Hussain.
17	Christmas	Christian	Celebrates the birth of Jesus Christ.
18	Good Friday	Christian	Observes the crucifixion of Jesus Christ, leading to Easter celebrations.
19	Republic Day	Holiday	Marks the day India became a republic with the adoption of its constitution on January 26.
20	Independence Day	Holiday	Celebrates India's independence from British rule on August 15.
21	Gandhi Jayanti	Holiday	Observes the birth of Mahatma Gandhi, the leader of India's independence movement.

C Additional Figures and Tables

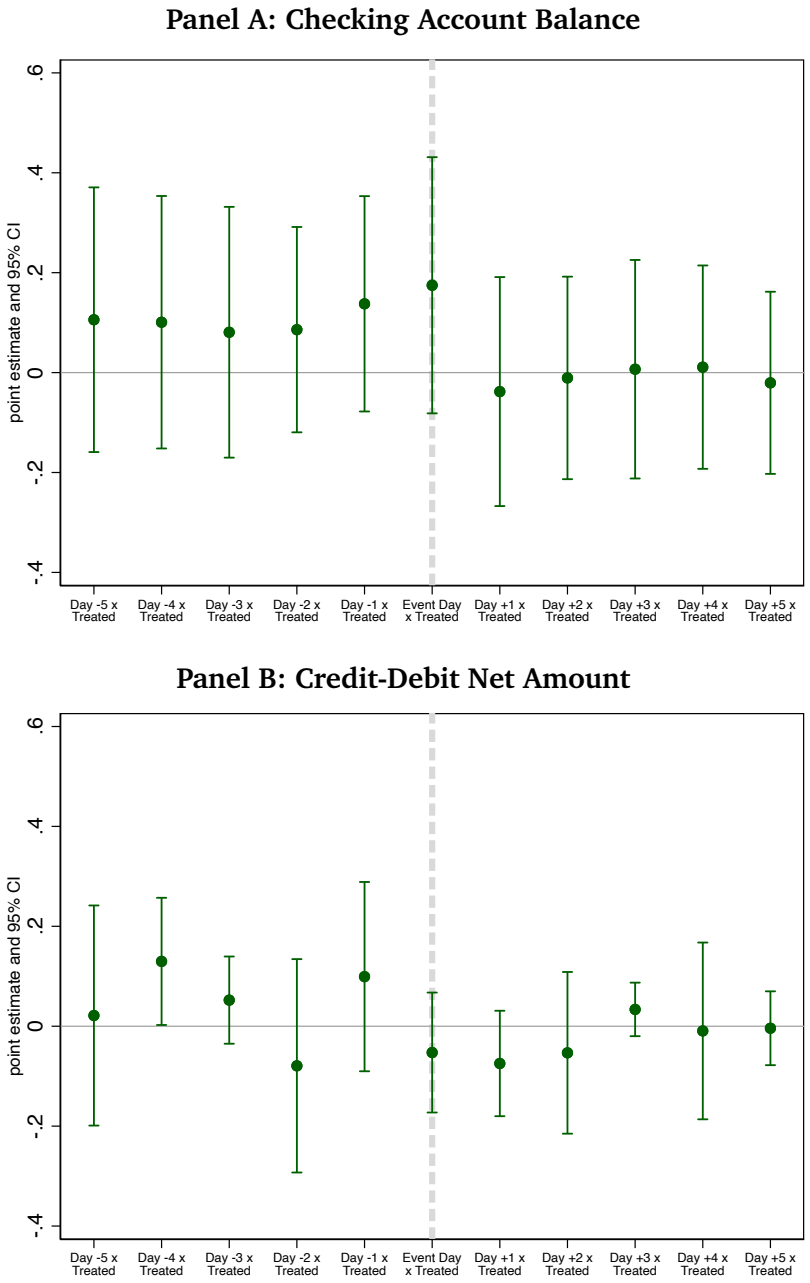
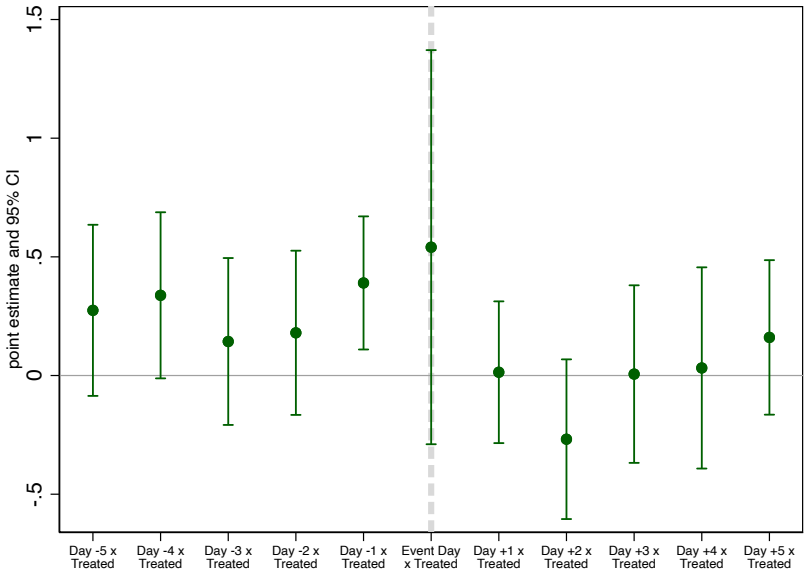


Figure IAC5: Dynamics of account balance and credit-debit net amount. This figure plots the coefficients β_k on each day in equation: $Y_{i,t} = \sum_{k=-5}^{5} \beta_k \{Treated_i \times Day(k)_t\} + \alpha_i + \gamma_t + \epsilon_{i,t}$, where i and t denote the individual and date, and $Day(k)_t$ is a dummy equal to one if date t corresponds to k days before/after a Diwali day. $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. α_i and γ_t denote individual and date fixed effects respectively. The dependent variable is the arcsinh of the individual's checking account balance in Panel A, and the arcsinh of the difference between credit and debit amounts in Panel B. Horizontal bars correspond to 95% confidence intervals. Standard errors are double-clustered at the investor and day levels.

Panel A: Likelihood of an ATM Transaction



Panel B: ATM Transaction Amount

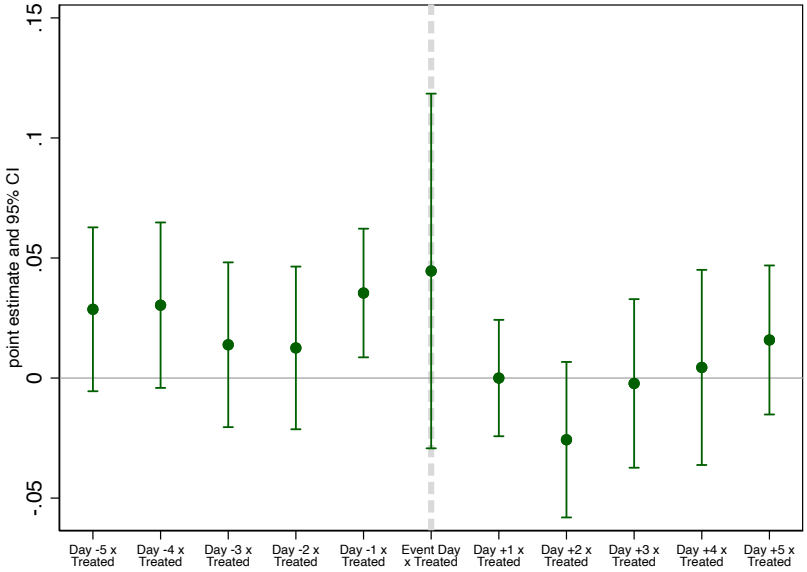
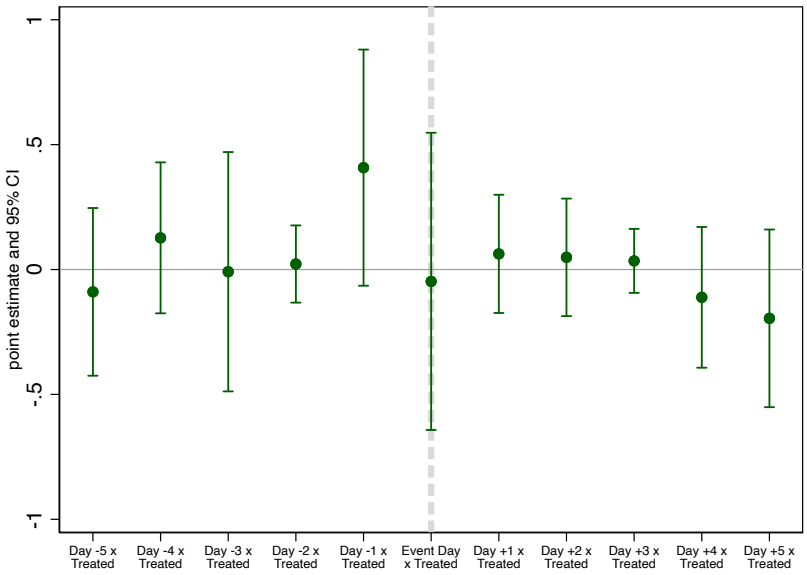


Figure IAC6: Dynamics of ATM transactions. This figure plots the coefficients β_k on each day in equation: $Y_{i,t} = \sum_{k=-5}^{5} \beta_k \{Treated_i \times Day(k)_t\} + \alpha_i + \gamma_t + \epsilon_{i,t}$, where i and t denote the individual and date, and $Day(k)_t$ is a dummy equal to one if date t corresponds to k days before/after a Diwali day. $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. α_i and γ_t denote individual and date fixed effects respectively. The dependent variable is a dummy equal to one if we observe an ATM withdrawal on the individual's account on tha day, and is the arcsinh of the individual's ATM transaction amount in Panel B. Horizontal bars correspond to 95% confidence intervals. Standard errors are double-clustered at the investor and day levels.

Panel A: Likelihood of a Credit Card Transaction



Panel B: Credit Card Transaction Amount

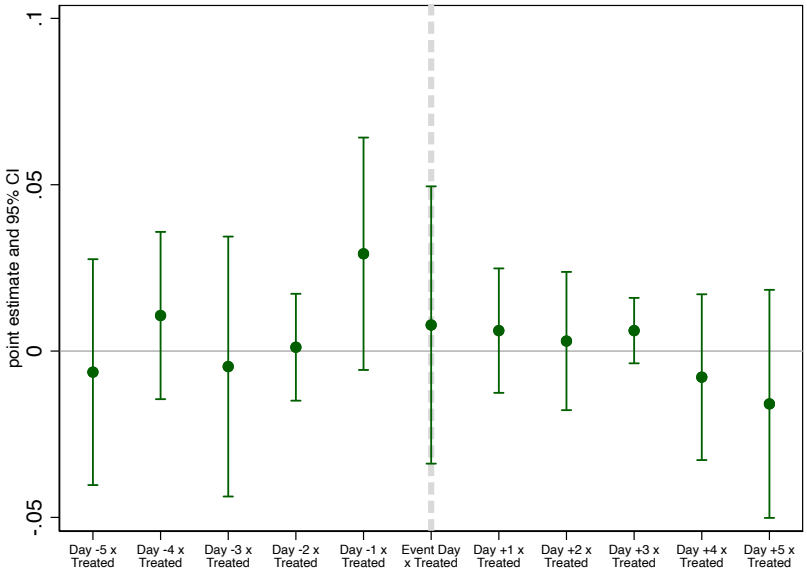


Figure IAC7: Dynamics of credit card transactions. This figure plots the coefficients β_k on each day in equation: $Y_{i,t} = \sum_{k=-5}^{5} \beta_k \{Treated_i \times Day(k)_t\} + \alpha_i + \gamma_t + \epsilon_{i,t}$, where i and t denote the individual and date, and $Day(k)_t$ is a dummy equal to one if date t corresponds to k days before/after a Diwali day. $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. α_i and γ_t denote individual and date fixed effects respectively. The dependent variable is a dummy equal to one if we observe a credit card transaction on the individual's account on that day in Panel A, and is the arcsinh of the individual's credit card transaction amount in Panel B. Horizontal bars correspond to 95% confidence intervals. Standard errors are double-clustered at the investor and day levels.

Table IAC4: Amount spend on buy and sell trades on Diwali day conditional on trading Regressions are estimated at the individual-day level, restricting the sample to observations where trading occurs. In Columns (1) to (3) (resp. (4) to (6)), the dependent variable is the arcsinh of the amount spent on buy (resp. sell) trades by the individual on that day. $Event$ is a dummy equal to 1 if the day corresponds to the Diwali's Muhurat trading day, and $Treated$ is a dummy indicating whether the individual is inferred to be Hindu. Standard errors (in parentheses) are double-clustered at the individual and day level. ***, ** and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

	Amount Buy Trades			Amount Sell Trades		
	(1)	(2)	(3)	(4)	(5)	(6)
Event Day × Treated	0.823***	0.609***	0.445**	-0.840***	-0.146	0.065
	(0.201)	(0.236)	(0.196)	(0.268)	(0.355)	(0.219)
Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Date FE	Yes	No	No	Yes	No	No
State × Date FE	No	Yes	No	No	Yes	No
District × Date FE	No	No	Yes	No	No	Yes
Observations	515,151	515,151	515,151	515,151	515,151	515,151
R^2	0.14	0.18	0.26	0.20	0.23	0.31