Left-Digit Bias, Investor Attention and Trading Behavior

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Abstract

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Although there is by now a large literature in finance addressing the question of when people *don't* like to sell stocks – specifically focusing on the disposition effect, the distaste for selling stocks at a nominal loss – beyond this strong regularity there is very little research focusing on when, exactly, investors *do* sell stocks. Are there specific events that trigger the sale of a stock? Recent research (Akepanidtaworn et al., 2019), which finds that the buy decisions of professional traders are quite sensible – the stocks they buy are more likely to rise in value than those they don't buy – but that their sell decisions are worse than random, further highlights the need for a better understanding of when stock sales occur.

While not providing a comprehensive theory, nor a broad empirical investigation, of when people sell stocks, in this paper we address one event that, we predicted and found, has a substantial effect on sales: People are significantly – xx% – more likely to sell stocks when their price crosses a round-number price threshold from below – e.g., rising from below $30 per share to above $30 per share. By the same token, we find that investors are less likely to sell stocks immediately after they cross a round number threshold from above. We document these interrelated patterns using a data set of transactions made by online retail investors, demonstrate its robustness across different empirical inspections, and rule out limit orders as an alternative explanation.

Left-digit bias is the tendency to focus on the leftmost digit of a number while paying less attention to other digits (Poltrock and Schwartz, 1984). Prior research on the left-digit bias has shown automobiles depreciate disproportionately when their milage crosses a around number threshold. Research on physician decision making likewise find that patients hospitalized with acute myocardial infarction 2 weeks after, as compared with 2 weeks before, their 80th birthday were significantly less likely to undergo coronary-artery bypass graft surgery. And research (Shlain, 2018) shows not only that 99 cent pricing works – that consumers respond to a one cent increase of $.99 to $1.00 as if it was a 15-25 cent difference, but also that firms exploit this bias less than they would if they were maximizing profits. Our contribution is to show that the left-digit bias strongly affects the behavior of investors.

1 Data

Data were provided by Barclays Stockbroking, an execution-online brokerage service operating in the United Kingdom. The data cover the period April 2012 to March 2016 and include daily-level records of trades and quarterly-level records of portfolio positions.[1] The data also include a dummy variable, at daily frequency, denoting whether the investor made a login to their account on the day. The daily-level login dummy variable covers all days, including days on which the market is closed such as Sundays and public holidays, which we use later in our analysis. We combine the daily-level records of trades with the quarterly-level records of portfolio positions, together with stock price data from Datastream, to calculate the value of each stock position in an investor's portfolio on each day of the sample period.

1.1 Sample Selection

As a first step, we apply a series of data cleaning sample restrictions which restrict the data to active accounts with trading histories during the data period for which we can match price and demographic data. Details of this first stage of data cleaning are shown in Table 1. The unrestricted sample as received from Barclays contains 155,300 accounts. In this version of the paper we draw a 60% random sample of accounts for analysis.

The unit of observation in the data is an account × stock × day, i.e. an observation per investor per stock holding per day. We focus our analysis on two subsets of this universe of account × days, specifically login-days and sell-days. We define a login-day as an observation which is paired with a login and a sell-day as an observation which is paired with a sale event on the day from the portfolio (of the stock, or of a different stock held in the account on the same day). The sample of accounts together provides a total of approximately 135 million login-days and approximately 100,000 sell-days.

We then apply six data cleaning restrictions to obtain a baseline sample, which are applied to the data at the account level unless otherwise noted. We apply these restrictions in order to limit the sample to the minimum variables required for analysis. First, we drop observations

[1] During the data period the brokerage operated only through an online interface. Barclays have subsequently introduced a mobile phone trading app.

for which the account is inactive, defined as a one-year period in which the investor makes fewer than two logins or two transactions. Where an account does not meet this restriction, we drop all observations for the relevant year.[2] Second, we remove observations where a matched price is not available from Datastream. Third, we remove observations for all account × days in which there are fewer than two stocks within the portfolio. Fourth, we remove all observations for accounts for which demographic data is missing (i.e., we drop all investor × stock × days for that account from the sample). Fifth, we remove the days in which the investor purchased the stocks (starting position days) as speculative day traiding is rare among retail investors. Finally, we remove accounts with extreme portfolio values (99 percentile of average portfolio value).

Table 1 reports the effects of these steps in sample selection. The table reports the number of accounts dropped due to each step in the sample restrictions, together with the number of login events and sell events (account × stock × days) dropped at each step. From the starting sample of approximately 92,000 accounts, the largest drop of accounts is due to dropping approximately 29,000 inactive accounts (31.6% of accounts). After applying all six sample restrictions the resulting baseline sample retains 58% of accounts from the unrestricted sample. Our sample restrictions tend to drop accounts with below-average logins and sales (due to the largest drop being the drop of inactive accounts), hence the baseline sample retains 63% of login-days and 69% of sell-days.

As a second step, we restrict to a sample for analysis. Two motivations drive our sample selection. First, responses to changes in left-digits are only detectable in a sample of observations for an investor in which the left-digit changes. A key element in our analysis therefore is to draw a "price increasing sample" and a "price decreasing sample", which we define below. Moreover, we show that the response of changes in left-digit is very different depending upon when the stock is increasing in value or decreasing in value over time, in particular, selling activity occurs when prices cross left-digits from below and from above.

Second, responses to changes in left-digits are contingent upon the investor observing the change in left-digit. For example, a stock that changes left-digit over a holding period

[2] In cases where the account satisfies this sample restriction in other years, we keep those years of observations in the data set.

in which the investor does not make a login to the account is much less likely to be noticed compared with a change in left-digit which occurs between login days within a holding period. We therefore apply sample restrictions in order to obtain a series of observations in which the price crosses the left-digit between login-days.

We define the price increasing sample and the price decreasing sample as follows. First, using the example of the price increasing sample, we identify the first day in each calendar quarter on which an investor made a login to their account.[3] We then define the price increasing sample as the set of login days within the quarter for which the prices on subsequent login days were always above the price on the first day and the left-digit had changed within the quarter on at least one subsequent login-day. This sample therefore provides a series of login-days through the quarter in which the price of the stock had broached a left-digit change on at least one of the login-days.

We define the price decreasing sample using parallel sample restrictions applied to decreasing prices. Hence the price decreasing sample is defined as the set of login days within the quarter for which the prices on subsequent login days were always below the price on the first day and the left-digit had changed within the quarter on at least one subsequent login-day. Our samples are based on quarters and individual $\times$ login days during the quarter.

1.2 Summary Statistics

Table 2 provides summary statistics for account holder characteristics and account characteristics in the baseline sample. Approximately 81% of account holders are made and the average age of an account holder is 55 years. Account holders have held their accounts with Barclays for, on average, approximately five years, with approximately 25% of account holders having held their account for over seven years. The average portfolio value is approximately £71,000 (median £19,000), with accounts containing of average 6 stocks (median 4 stocks). Investors in the baseline sample overwhelmingly hold positions in a few common stocks. Holdings of mutual funds account for only 8% of the average investor's portfolio. Investors in the sample login approximately once per five days, but trade much less frequently at a frequency of

[3] We show later that results are unchanged when we modify the period that defines a sample to either a month, or a year, instead of a quarter.

approximately once every thirty days.

Table 3 describes the price data for the baseline sample, price increasing sample and price decreasing sample. The baseline sample provides approximately 84.6 million login-day observations (the bottom row of Table 1). Panel A summarises prices of all observations paired with login-days and sell-days in the first two rows, together with price of stocks sold in the third row. The mean price of a stock in the sample of login-days is approximately £8, with a median of £3.

Panels B and C summarise prices for stocks from observations in the price increasing sample and observations in the price decreasing sample. Note, there are four units of left-digit in the data, pennies, tens of pennies, pounds and tens of pounds (there are only a few cases of hundreds of pounds). So, the left-digit changes of interest are pence to tens of pence, tens of pence to pounds, and pounds to tens of pounds (plus a few cases of tens of pounds to hundreds of pounds). The most common price range for observations in both the price increasing sample and the price decreasing sample is the £1.1 to £10.1 range, which accounts for 54.8% of observations in the price increasing sample and 43.7% of observations in the price decreasing sample. [4]

2 Results

2.1 Main Results

Our main result is shown in Figure 1. The figure stack all investor × stock × login days by the leftmost two digits. The figure plots in the left-side the probability of sale by leftmost digits, and in the right-side it plots the probability of sale by the leftmost two digits. For example, the left-side plot stacks up stocks which pass from 9 pence to 10 pence, 29 pence to 30 pence, 199 pence to 200 pence, and so on in every case in which the leftmost digit changes. These examples each enter the plot at X9 to Y0, where X and Y are integer units and $Y = X + 1$. The left-side plots show clear jumps in the probability of sale when the stock price crosses the leftmost digit; the right-side plots also show this phenomena, with the red bar denoting base 10 leftmost two

[4] Most stocks in the samples are prices in the range £1.10 to £10.10. A histogram of prices for all investor × login days is shown in Figure A1.

digit prices. In Panel A there is a jump in probability of sale when the price crosses the left digit from below, e.g. 19 pence to 20 pence; in Panel B there is a jump when the price crosses the left digit from above, e.g. 20 pence to 19 pence. Note that in general the probability of sale is higher in the price increasing sample than in the price decreasing sample, consistent with the disposition effect. Figure 2 and Figure 3 show that the left-digit effect occurs in each of the pennies, pounds and tens of pounds samples.

These patterns in selling probability are evidence in price increasing and price decreasing samples, but are obscured when one looks at the sample of all observations, shown in Figure A2.

We estimate the size of the left-digit effect in Table 4 and Table 5. The regression setup is a discontinuity regression which pools all of the observations from the sample (increasing or decreasing) and regresses the probability of sale against a dummy for the price being above the left-digit change, plus continuous controls for the leftmost two digits below and above the left-digit change. The coefficient in Column 2 implies that a stock that has crossed the left-digit from below is 50% more likely to be sold. The coefficient value is stable across specifications, including a rich specification in Column 5 that includes day, industry, account, and stock fixed effects. That specification therefore exploits within-investor, within-stock variation in the probability of sale, conditioning on day differences in the likelihood of sale. In the price-decreasing sample the coefficient estimate in Column 1 implies a 25% increase in probability of sale when the left-digit changes from above (note the coefficient are negative, reporting the effect of a change from below). Table A1 and Table A2 report regressions from the subsamples by pennies, pounds and tens of pounds.

2.2 Robustness Tests

2.2.1 Individual Fixed Effects

The rightmost columns in Table 4 and Table 5 add individual fixed effects to the specification.

2.2.2 Limit Orders

One potential confound in Figure 1 Panel A is limit orders. A spike in the probably of sale could arise if individuals set limit orders at round numbers. One argument we considered against

limit orders driving the results is that limit orders should strike at exactly the round number, hence limit orders could not explain the elevated probability of sales at Y1, Y2, Y3, and so on. However, there are two counter-arguments to this. First, if individuals place limit order outside of trading hours, the price may have risen further above Y0 by the time the brokerage executes the order (overnight orders form a queue). Second, if the stock is illiquid the brokerage may only be able to execute the order once the price has risen further above Y0 (again, due to queueing).

We therefore adopt a number of different tests. A first test is to compare Figure 1 Panels A and B. While limit orders could potentially generate the pattern seen in Panel A, they cannot generate the pattern in Panel B, which suggests they are not at work in Panel A.

A second test is to exclude types of trades that are more likely to be limit orders. In a series of steps, we exclude out of hours sales, sales with logins on the previous day (a day on which a limit order might have been placed), and finally restrict to sales including only the most liquid stocks (stocks in the FTSE100). Results are shown in Figure 4 Panels A-C, which apply these steps in analysis, with patterns unchanged from those in Figure 1 Panel A. Regression estimates are also shown in Table A3 and Table A4

As an additional test, we follow an approach to identifying limit order trades suggested by Linnainmaa (2010). Linnaimaa's paper "Do Limit Orders Alter Inferences about Investor Performance and Behavior?" in the Journal of Finance develops a method for detecting limit orders in transaction data. We can use the same method. The approach is as follows: By regressing a buy-versus-sell indicator (a dependent variable that takes the value of one when an investor sells a stock and the value of zero when an investor purchases a stock) against the daily return of an stock, for each investor, it is possible to detect investors using limit orders. The same-day return coefficient is significantly positive for limit-order trades, but significantly negative for market-order trades (because individuals who are net buyers when the stock price falls, and net sellers when the stock price rises, are likely limit-order traders; while individuals who submit market orders often trade in the direction of the same-day return, and hence against limit order traders). See page 1499 for further details.

Using that method, we exclude accounts with a tendency to use limit orders in Figure 4

Panel D (3,021 investors), with results unchanged from the main analysis. Regression estimates are shown in Table A4 Panel D.

2.3 Simulation

We might be worried that our results are somehow due to sample selection. Therefore, we conduct a simulation analysis in which we assign sales randomly to investor × stock × days in each sample. Figure A3 shows that with randomly allocated sales we see no evidence of discontinuity in the probability of sale when the leftmost digit changes.

2.4 Sensitivity Tests

2.4.1 Variation in Time Period

One might worry that this also somehow creates a selection effect. We therefore conduct the same analysis, with the same results, on samples where the time period is defined as a month in Figure A4 and as a year in Figure A5. See Table A5 for summary statistics and Table A6 and Table A7 for regression estimates.

2.4.2 Sell-Day Sample

Sell-day sample. We see the same result in the sell-day sample in Figure A6, with again the same patterns in sub-samples by pennies, pounds and tens of pounds in Figure A7 and Figure A8. See Table A8 and Table A9 for regression estimates, plus Table A10 and Table A11 for regression estimates using the sub-samples by pennies, pounds and tens of pounds.

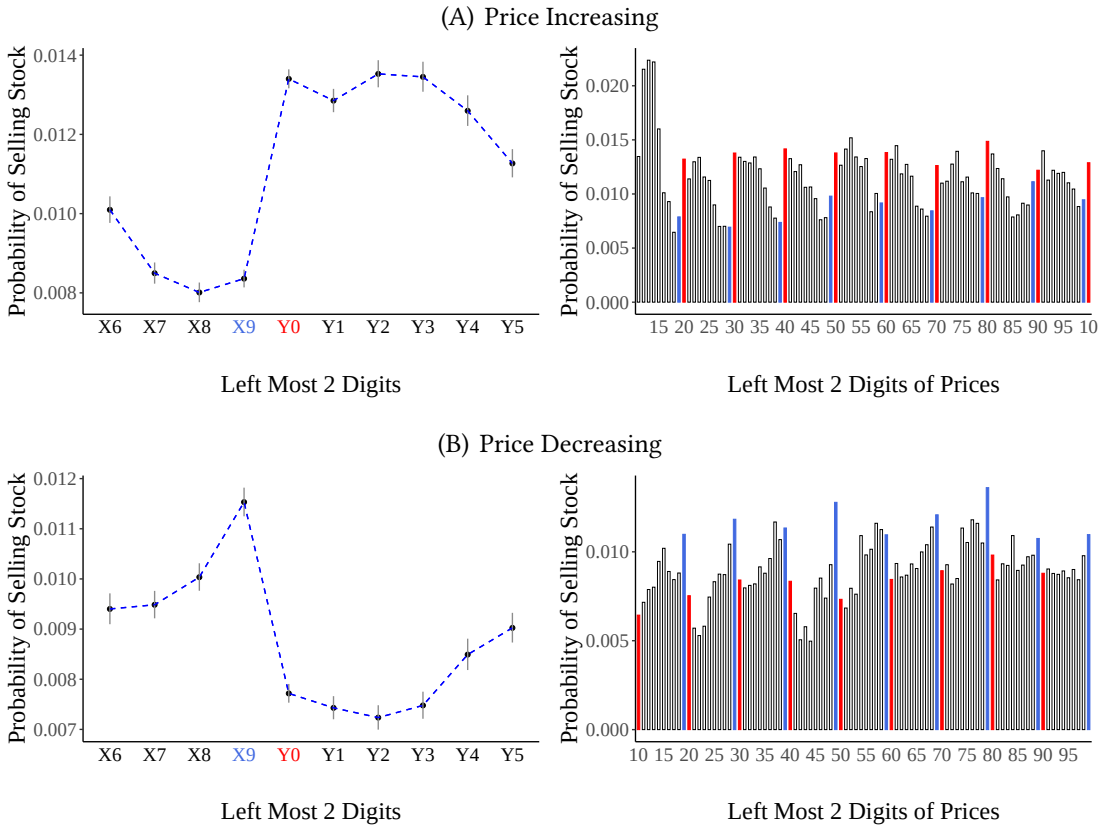
2.5 Investor Characteristics

We use sample splits and test for differences in the left-digit effect by various investor characteristics

- Age: stronger among younger investors (Table 6).
- Gender: no differences (Table 7).
- Portfolio value: stronger among small portfolios (Table 8).
- Tenure: stronger among younger accounts (Table 9).

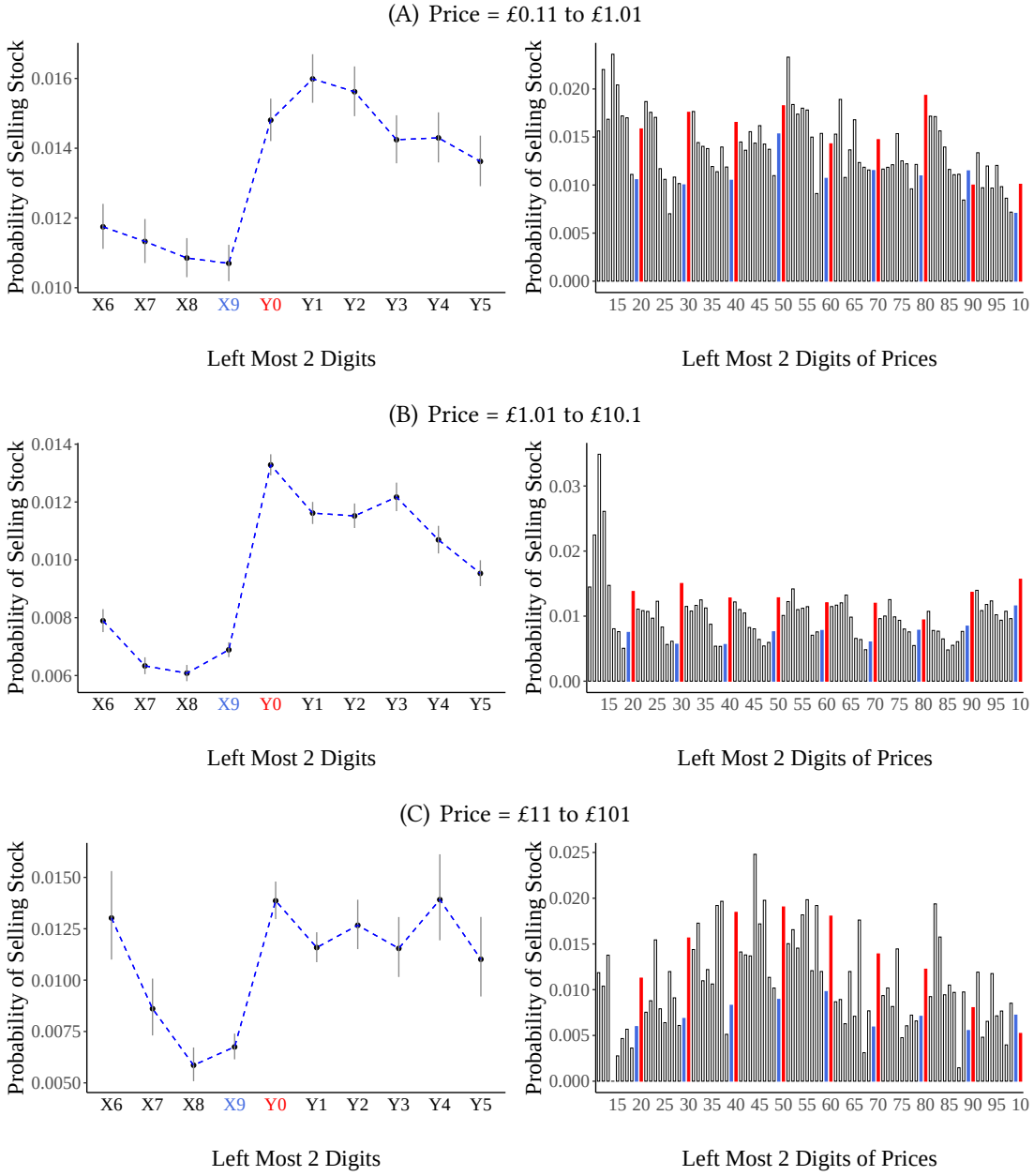
– Number of Stocks: stronger with fewer stocks (Table 10).

Figure 1: Leftmost Stock Price Digit and Probability of Sale, Quarterly Sample



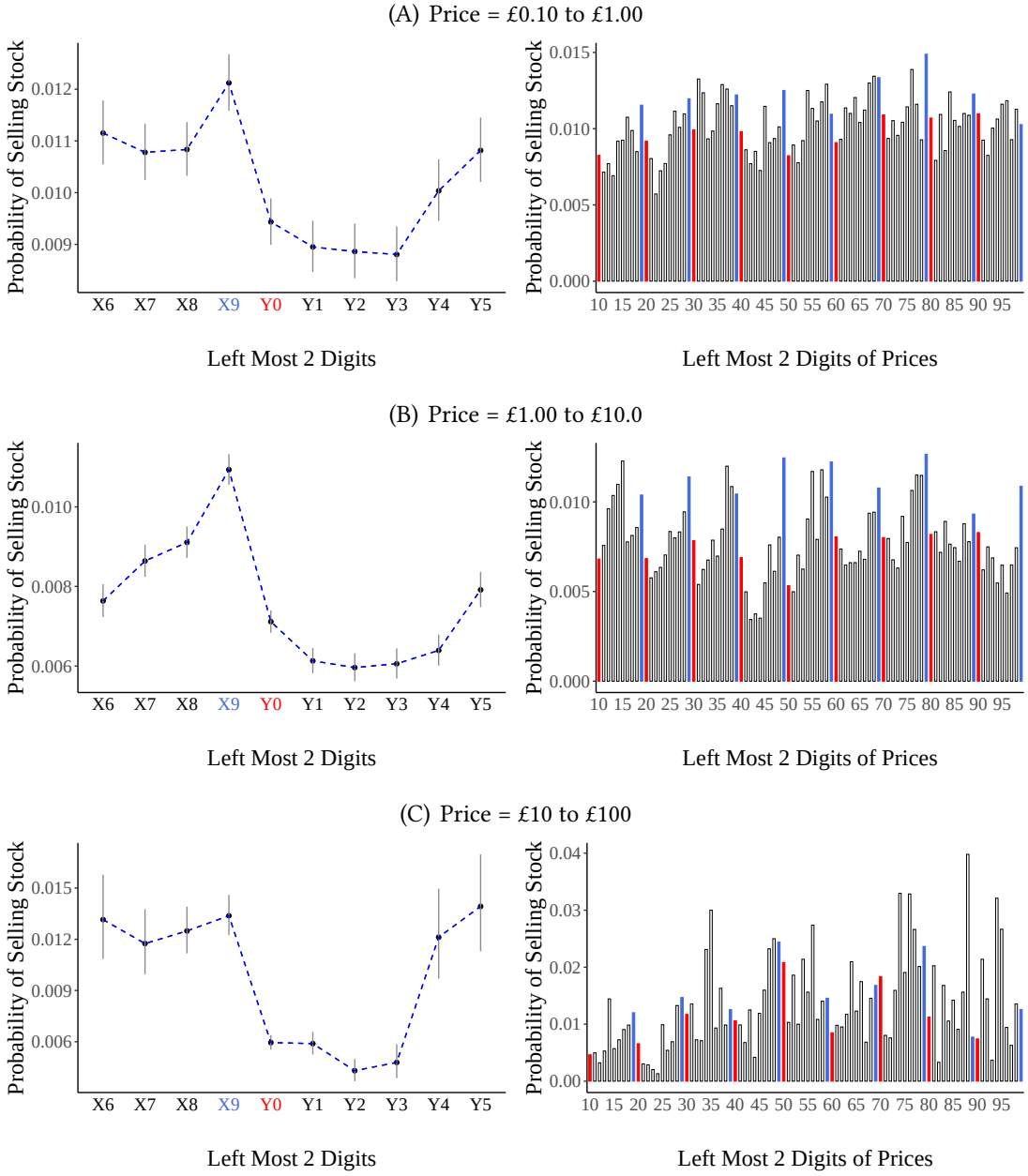
Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.).

Figure 2: Leftmost Stock Price Digit and Probability of Sale
Prices Increasing Sample by Price Range



Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.). Panels A, B and C show equal size bins of 1p, 10p and £1, respectively. Panel A corresponds to 25% of the observations in the prices increasing sample; Panel B, to 55%; and Panel C, to 8%.

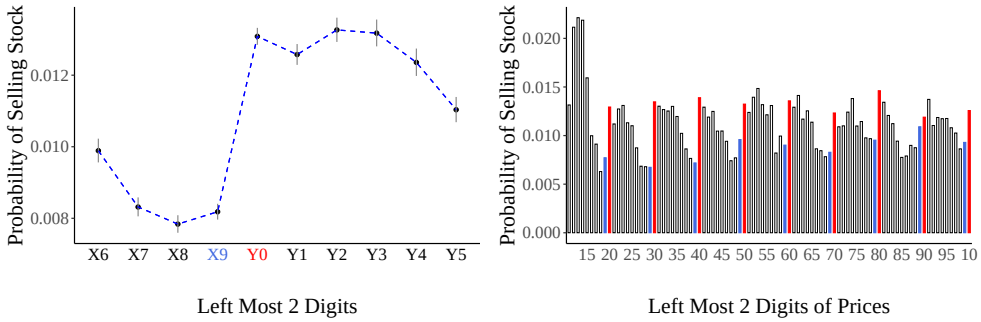
Figure 3: Leftmost Stock Price Digit and Probability of Sale
Prices Decreasing Sample by Price Range



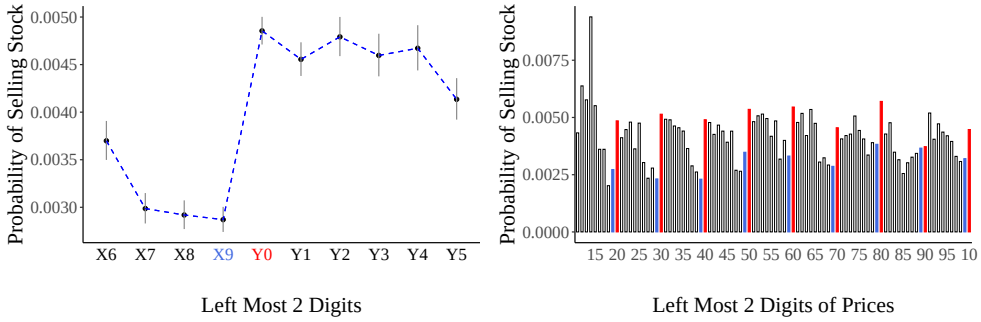
Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.). Panels A, B and C show equal size bins of 1p, 10p and £1, respectively. Panel A corresponds to 27% of the observations in the prices decreasing sample; Panel B, to 43%; and Panel C, to 7%.

Figure 4: Leftmost Stock Price Digit and Probability of Sale,
Prices Increasing Sample Limit Order Robustness Tests

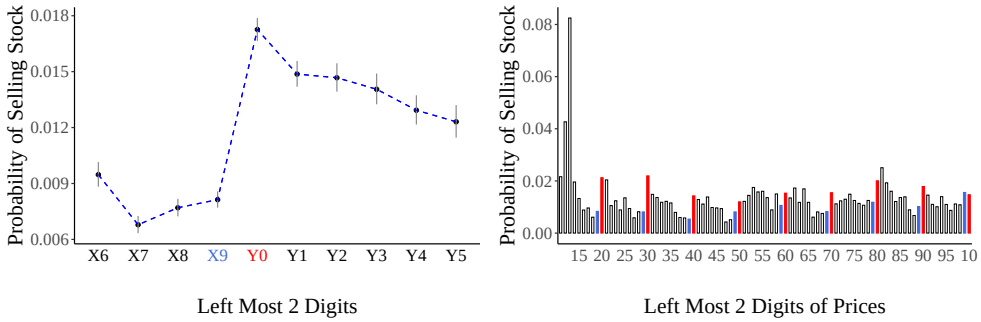
(A) Excluding Pre-Market and After-Hours Sells (Outside 8am to 4:30pm)



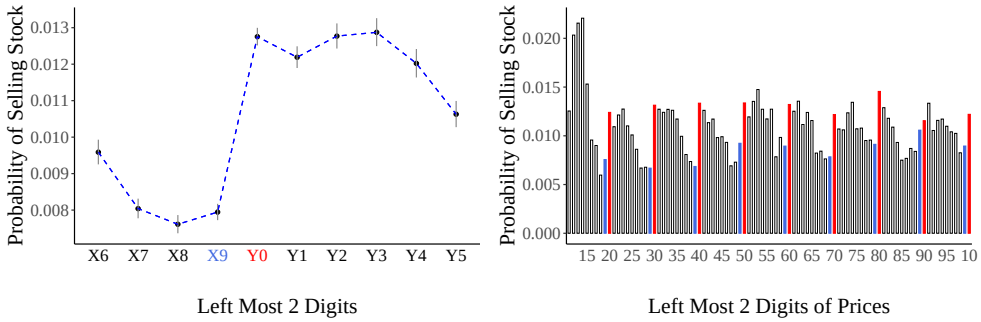
(B) Excluding Sells with Login the Day Before or Weekend Logins for Monday Sells



(C) Including Only FTSE100 Stocks



(D) Excluding Accounts with Potential Limit Orders (Linnainmaa, 2010)



Note: £*Y* in the X-axes is equivalent to £*X* + 1 (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.). Panels display different sample restrictions to exclude sells corresponding to limit orders. Panel A drops sells executed when the market was closed. It also exclude potential discretionary trades (high frequency trades executed on the same stock, at the same time and at the same price that would likely correspond to sells arranged by Barclays discretionary service). Panel B excludes sells with a preceding login day. Panel C exclude non-liquid stocks, and Panel D excludes potential limit orders following Linnainmaa (2010) methodology. Panel A drops 2.2% of sells, Panel B drops 64.7% of sells, Panel C drops 75.9% of sells, and Panel D drops 11.4% of sells.

Table 1: Sample Selection

	Accounts	Logins	Sells
Unrestricted Sample	91817	135331214	993312
Drop due to:			
Inactive Accounts	28990	15951667	39075
Unmatched Prices	581	26014606	101667
At Least Two Stocks in Portfolio	5999	1444418	65638
Missing Demographic Data	2282	3980478	35724
Starting Position Days	40	726121	49899
Portfolio outliers	653	2631071	16339
Baseline sample	53272	84582853	684970

Note: The unrestricted sample contains 155,300 accounts. We use a 60% random sample of accounts. The table detail the steps in sample selection. Logins and Sells are at the account × stock × day level.

Table 2: Baseline Sample Summary Statistics

	Mean	Min	p25	p50	p75	Max
A. Account Holder Characteristics						
Female	0.189					
Age (years)	54.848	17.000	47.000	57.000	67.000	87.000
Account Tenure (years)	5.291	0.060	3.063	4.049	6.959	16.975
B. Account Characteristics						
Portfolio Value (£10000)	7.106	0.000	0.654	1.911	5.347	265.820
Investment in Mutual Funds (£10000)	0.477	0.000	0.000	0.000	0.000	166.345
Investment in Mutual Funds (%)	7.862	0.000	0.000	0.000	0.000	12606.139
Number of Stocks	5.900	2.000	2.429	3.894	7.000	176.818
Login days (% all days)	18.749	0.076	4.261	11.528	28.603	100.000
Transaction days (% all market open days)	3.249	0.036	0.844	1.657	3.462	100.000
N Accounts	53272					

Note: This table presents summary statistics for the baseline sample of accounts. Age is measured at date of account opening. Account tenure is measured on the final day of the data period. Portfolio value is the value of all securities within the portfolio at market prices. Portfolio value, number of stocks and investment in mutual funds are measured as within-account averages of values at the first day of each calendar month in the data period. Login days is the percentage of days the account is open in the data period and the account holder made at least one login. Transaction days is the percentage of market open days the account is open in the data period and the account holder made at least one trade.

Table 3: Summary Stats, Quarterly Sample

Panel (A): Baseline Sample

	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
Price on Login Days £	84,582,853	7.392	24.028	0.000	1.144	2.989	7.348	15,051.630
Price on Sell Days £	6,390,539	6.626	23.524	0.000	0.835	2.585	6.360	3,589.000
Price of Stocks Sold £	684,970	7.069	28.262	0.000	0.844	2.645	6.479	2,057.994

Panel (B): Price Increasing Sample

	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
All Stocks	4,869,714	6.035	20.802	0.000	0.738	2.961	6.074	3,589.000
Between £0.11 to £1.01	1,221,843	0.602	0.256	0.110	0.385	0.630	0.812	1.010
Between £1.1 to £10.1	2,670,842	4.864	2.305	1.100	2.947	4.519	6.550	10.100
Between £11 to £101	358,540	33.963	20.723	11.000	19.620	29.400	43.825	100.996

Panel (C): Price Decreasing Sample

	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
All Stocks	4,903,878	4.116	19.497	0.000	0.178	1.030	4.492	2,062.035
Between £0.10 to £1.0	1,346,143	0.513	0.270	0.100	0.276	0.486	0.755	1.000
Between £1 to £10	2,144,544	4.507	2.511	1.000	2.349	4.112	6.227	10.000
Between £10 to £100	340,298	24.961	17.954	10.000	10.870	20.510	29.940	99.990

Table 4: Probability of Sale and Left Digit, Price Increasing Sample

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0044***	0.0055***	0.0050***	0.0055***	0.0061***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		-0.0003***	-0.0004***	-0.0005***	-0.0008***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		-0.0005***	-0.0003***	-0.0003***	-0.0002***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0086***	0.0080***	0.0077***		
	(0.0001)	(0.0001)	(0.0008)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,869,714	4,869,714	4,869,714	4,869,714	4,869,714
R^2	0.0004	0.0004	0.0017	0.0679	0.0728

Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks increased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (X0). SE are clustered by account.

Table 5: Probability of Sale and Left Digit, Price Decreasing Sample

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0024***	-0.0038***	-0.0042***	-0.0039***	-0.0040***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		0.0002***	0.0003***	0.0004***	0.0004***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		0.0007***	0.0008***	0.0006***	0.0006***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0102***	0.0112***	0.0158***		
	(0.0002)	(0.0002)	(0.0012)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,903,878	4,903,878	4,903,878	4,903,878	4,903,878
R^2	0.0002	0.0002	0.0005	0.0675	0.0717

Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks have not increased in price (regarding the first observation of the quarter) and have not changed the left most digit at least once during the quarter. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (X0). SE are clustered by account.

Table 6: Probability of Sale and Left Digit, Splitting by Median Age

	Prices Increasing Sample		Prices Decreasing Sample	
	Below Median	Above Median	Below Median	Above Median
Above Y0 = 1 (in Range Y0 to Y5)	0.0075***	0.0047***	-0.0040***	-0.0040***
	(0.0003)	(0.0002)	(0.0002)	(0.0003)
Stock Digits Y0 to Y5	-0.0009***	-0.0006***	0.0004***	0.0004***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Stock Digits X6 to X9	-0.0003***	-0.0001	0.0007***	0.0004***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Day FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Account FE	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES
Observations	2,580,896	2,288,818	2,654,464	2,249,414
R^2	0.0866	0.0506	0.0869	0.0487

Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks increased/decreased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (Y0). SE are clustered by account.

Table 7: Probability of Sale and Left Digit, Splitting by Gender

	Prices Increasing Sample		Prices Decreasing Sample	
	Female	Male	Female	Male
Above Y0 = 1 (in Range Y0 to Y5)	0.0064***	0.0061***	-0.0037***	-0.0040***
	(0.0004)	(0.0002)	(0.0004)	(0.0002)
Stock Digits Y0 to Y5	-0.0006***	-0.0008***	0.0005***	0.0004***
	(0.0001)	(0.0000)	(0.0001)	(0.0000)
Stock Digits X6 to X9	-0.0004***	-0.0001**	0.0005***	0.0006***
	(0.0002)	(0.0001)	(0.0002)	(0.0001)
Day FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Account FE	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES
Observations	837,223	4,032,491	787,316	4,116,562
R^2	0.0700	0.0746	0.0703	0.0731

Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks increased/decreased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (Y0). SE are clustered by account.

Table 8: Probability of Sale and Left Digit, Splitting by Portfolio Value

	Prices Increasing Sample		Prices Decreasing Sample	
	Below Median	Above Median	Below Median	Above Median
Above Y0 = 1 (in Range Y0 to Y5)	0.0090***	0.0035***	-0.0049***	-0.0030***
	(0.0003)	(0.0002)	(0.0003)	(0.0002)
Stock Digits Y0 to Y5	-0.0011***	-0.0004***	0.0005***	0.0003***
	(0.0001)	(0.0001)	(0.0001)	(0.0000)
Stock Digits X6 to X9	-0.0003***	-0.0001	0.0008***	0.0002**
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Day FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Account FE	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES
Observations	2,390,422	2,479,292	2,496,374	2,407,504
R^2	0.1030	0.0503	0.1063	0.0437

Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks increased/decreased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (Y0). SE are clustered by account.

Table 9: Probability of Sale and Left Digit, Splitting by Account Tenure

	Prices Increasing Sample		Prices Decreasing Sample	
	Below Median	Above Median	Below Median	Above Median
Above Y0 = 1 (in Range Y0 to Y5)	0.0072***	0.0052***	-0.0046***	-0.0033***
	(0.0003)	(0.0002)	(0.0003)	(0.0003)
Stock Digits Y0 to Y5	-0.0009***	-0.0006***	0.0005***	0.0003***
	(0.0001)	(0.0001)	(0.0001)	(0.0000)
Stock Digits X6 to X9	-0.0002*	-0.0002**	0.0006***	0.0005***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Day FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Account FE	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES
Observations	2,394,197	2,475,517	2,495,063	2,408,815
R^2	0.0831	0.0607	0.0792	0.0645

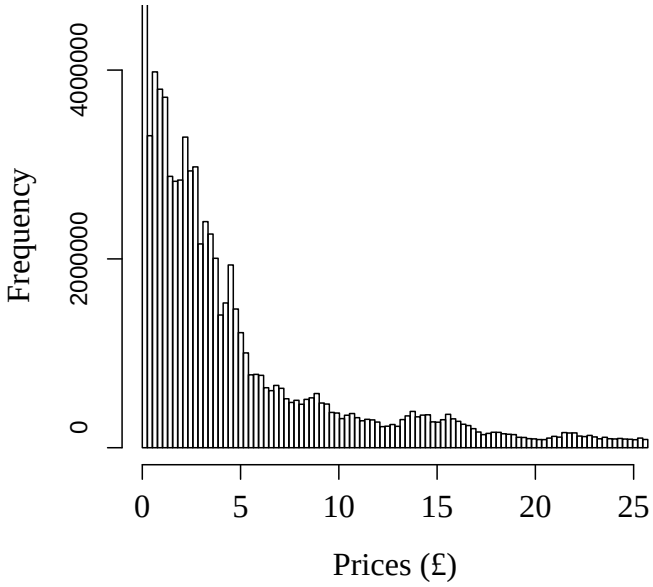
Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks increased/decreased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (Y0). SE are clustered by account.

Table 10: Probability of Sale and Left Digit, Splitting by Number of Stocks

	Prices Increasing Sample		Prices Decreasing Sample	
	Below Median	Above Median	Below Median	Above Median
Above Y0 = 1 (in Range Y0 to Y5)	0.0088***	0.0031***	-0.0049***	-0.0030***
	(0.0003)	(0.0002)	(0.0003)	(0.0002)
Stock Digits Y0 to Y5	-0.0011***	-0.0004***	0.0005***	0.0004***
	(0.0001)	(0.0001)	(0.0001)	(0.0000)
Stock Digits X6 to X9	-0.0003***	-0.0001	0.0009***	0.0002**
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Day FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Account FE	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES
Observations	2,650,726	2,218,988	2,492,742	2,411,136
R^2	0.0908	0.0377	0.0934	0.0329

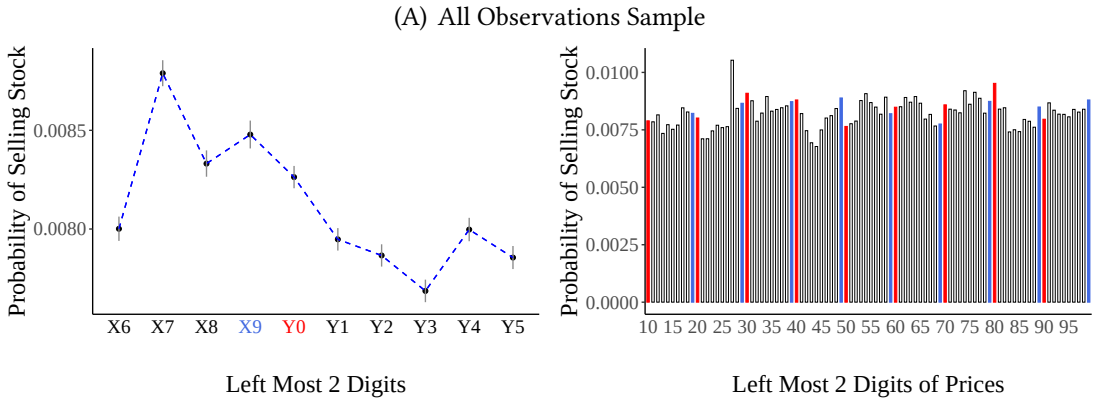
Note: The unit of observation is an investor × stock × day. The samples is restricted to login days. We include only quarters in which the stocks increased/decreased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (Y0). SE are clustered by account.

Figure A1: Histogram of Stock Prices



Note: Figure shows the histogram of prices on login days. Outliers above the 95 percentile are excluded.

Figure A2: Leftmost Stock Price Digit and Probability of Sale, Quarterly Sample



Note: £Y in the X-axes is equivalent to £$X + 1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.).

Figure A3: Sample Selection and Simulation Exercise

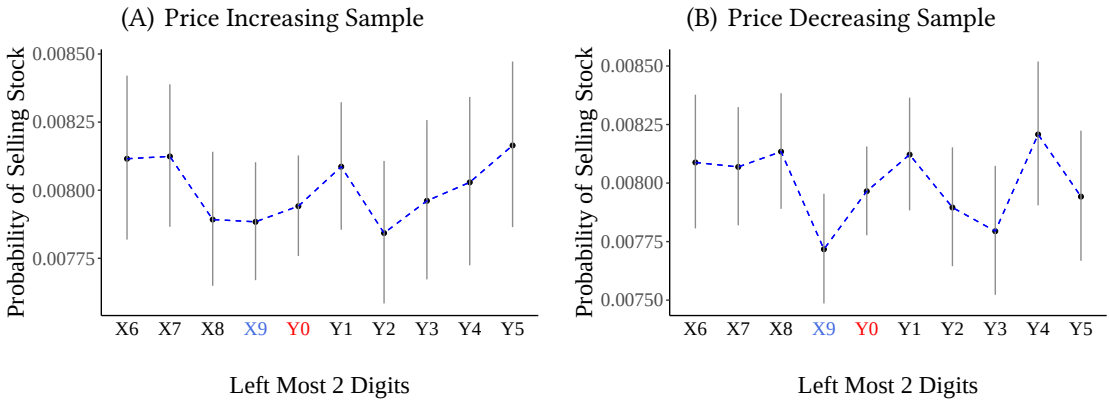
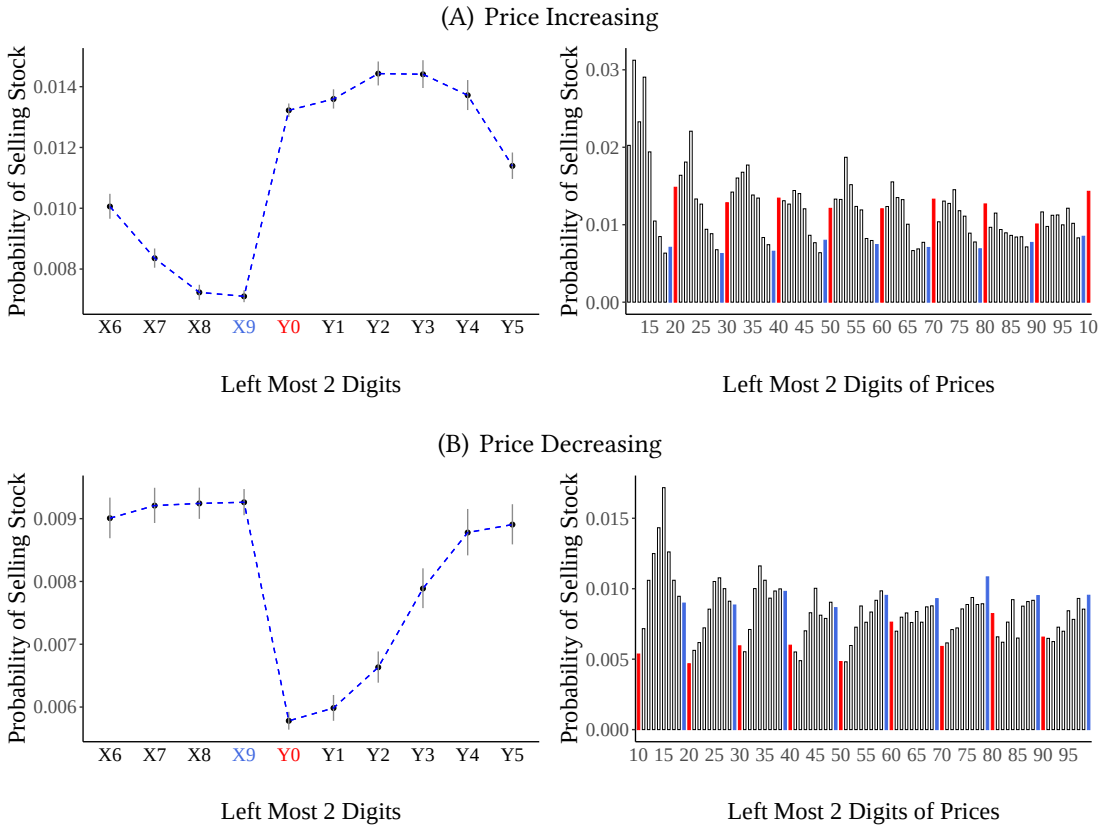
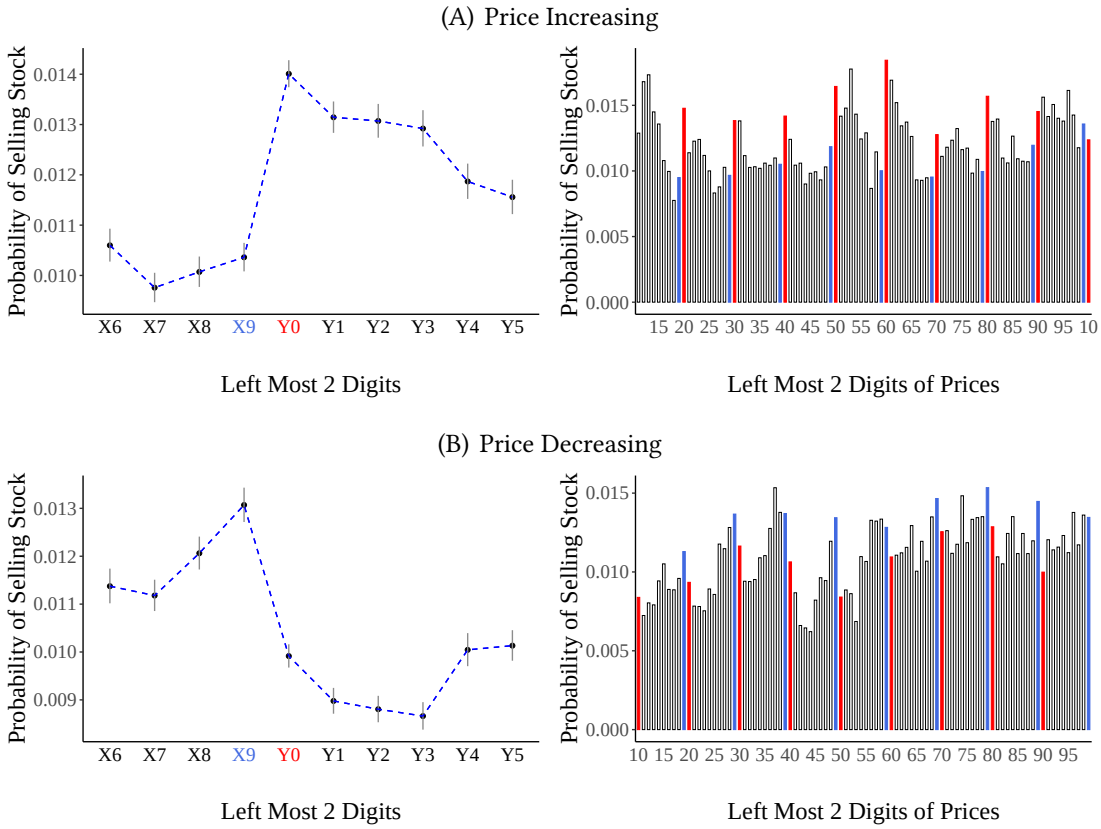


Figure A4: Leftmost Stock Price Digit and Probability of Sale, Monthly Sample



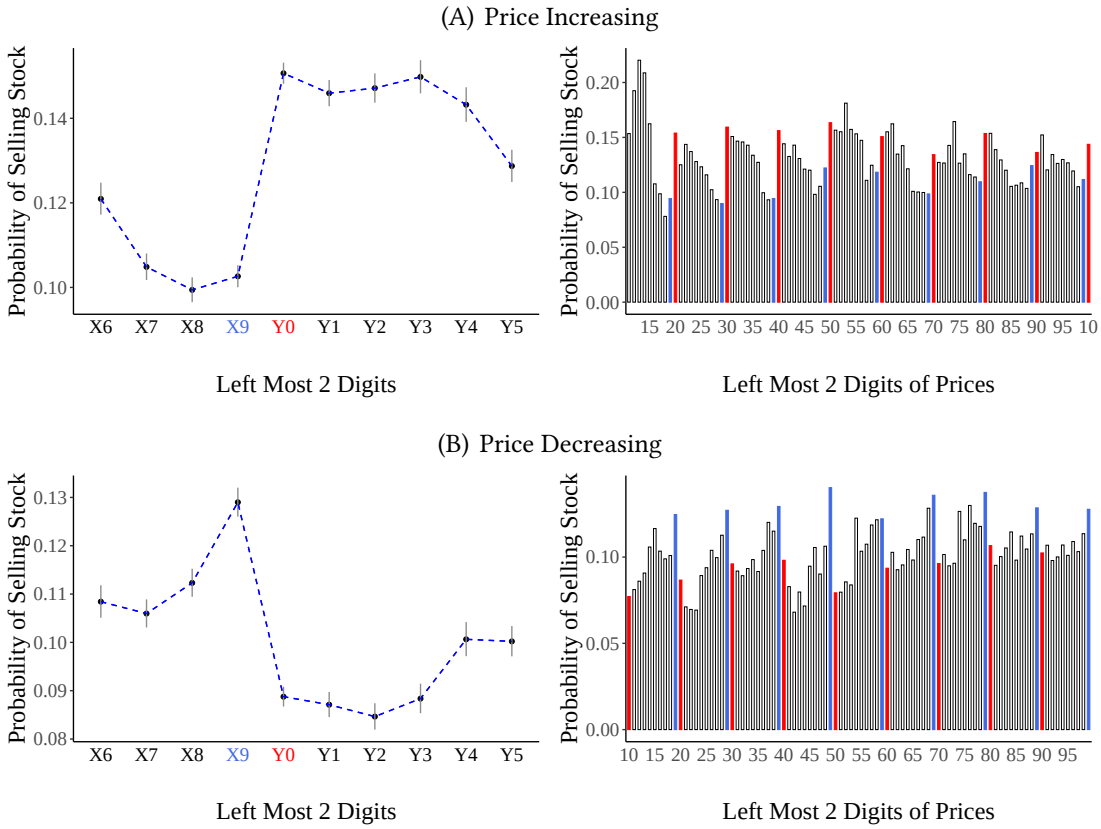
Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.).

Figure A5: Leftmost Stock Price Digit and Probability of Sale, Annual Sample



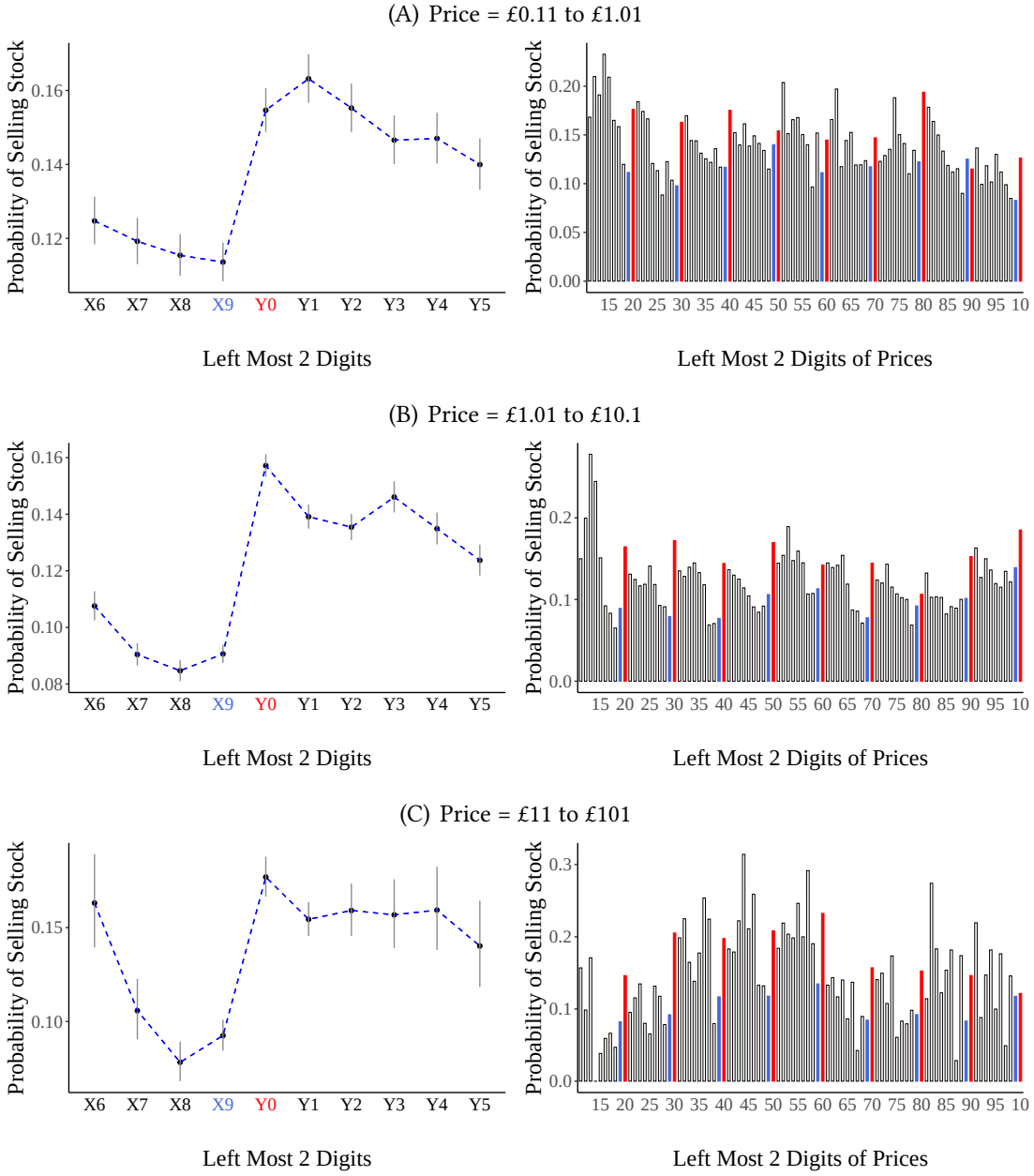
Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.).

Figure A6: Leftmost Stock Price Digit and Probability of Sale, Sell Days



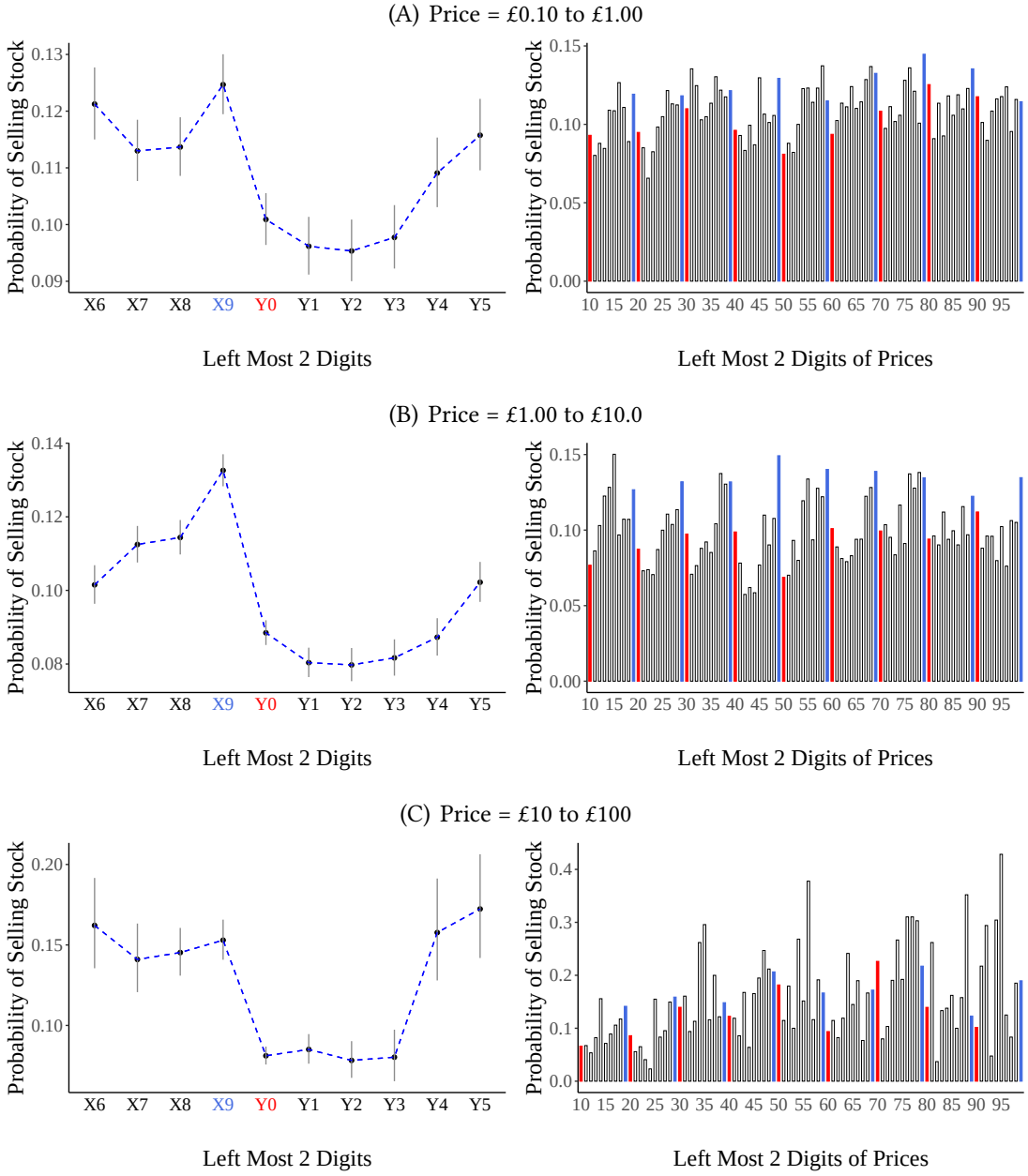
Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.).

Figure A7: Leftmost Stock Price Digit and Probability of Sale, Sell Days
Prices Increasing Sample by Price Range



Note: £Y in the X-axes is equivalent to £$X+1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.). Panels A, B and C show equal size bins of 1p, 10p and £1, respectively.

Figure A8: Leftmost Stock Price Digit and Probability of Sale, Sell Days
Prices Decreasing Sample by Price Range



Note: £Y in the X-axes is equivalent to £$X + 1$ (e.g., £X9 could include £0.19, £1.9, £19, etc., while £Y0 could include £0.20, £2.0, £20, etc.). Panels A, B and C show equal size bins of 1p, 10p and £1, respectively.

Table A1: Price Increasing Subsamples with Equal Prices Bins

Panel (A): Price = £0.11 to £1.01

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0037***	0.0049***	0.0046***	0.0048***	0.0047***
	(0.0002)	(0.0003)	(0.0003)	(0.0004)	(0.0004)
Stock Digits Y0 to Y5		-0.0003***	-0.0003***	-0.0004***	-0.0006***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Stock Digits X6 to X9		-0.0004***	-0.0002	-0.0003**	-0.0003**
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0111***	0.0106***	0.0221***		
	(0.0003)	(0.0003)	(0.0031)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	1,221,843	1,221,843	1,221,843	1,221,843	1,221,843
R^2	0.0003	0.0003	0.0013	0.1013	0.1080

Panel (B): Price = £1.01 to £10.1

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0050***	0.0065***	0.0063***	0.0064***	0.0067***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		-0.0006***	-0.0007***	-0.0006***	-0.0008***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Stock Digits X6 to X9		-0.0002***	-0.0001**	-0.0002***	-0.0001
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0067***	0.0065***	0.0134***		
	(0.0001)	(0.0002)	(0.0026)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	2,670,842	2,670,842	2,670,842	2,670,842	2,670,842
R^2	0.0007	0.0007	0.0020	0.0738	0.0764

Panel (C): Price = £11 to £101

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0052***	0.0068***	0.0069***	0.0085***	0.0091***
	(0.0004)	(0.0005)	(0.0005)	(0.0006)	(0.0006)
Stock Digits Y0 to Y5		-0.0003	-0.0004*	0.0001	-0.0000
		(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits X6 to X9		-0.0015***	-0.0018***	-0.0015***	-0.0015***
		(0.0003)	(0.0003)	(0.0003)	(0.0003)
Constant	0.0073***	0.0061***	-0.0024***		
	(0.0003)	(0.0003)	(0.0007)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	358,540	358,540	358,540	358,540	358,540
R^2	0.0006	0.0007	0.0030	0.1395	0.1444

Table A2: Price Decreasing Subsamples with Equal Prices Bins

Panel (A): Price = £0.10 to £1.00

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0037***	0.0049***	0.0046***	0.0048***	0.0047***
	(0.0002)	(0.0003)	(0.0003)	(0.0004)	(0.0004)
Stock Digits Y0 to Y5		-0.0003***	-0.0003***	-0.0004***	-0.0006***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Stock Digits X6 to X9		-0.0004***	-0.0002	-0.0003**	-0.0003**
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0111***	0.0106***	0.0221***		
	(0.0003)	(0.0003)	(0.0031)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	1,221,843	1,221,843	1,221,843	1,221,843	1,221,843
R^2	0.0003	0.0003	0.0013	0.1013	0.1080

Panel (B): Price = £1.00 to £10.0

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0027***	-0.0042***	-0.0045***	-0.0045***	-0.0042***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		0.0001	0.0001*	0.0004***	0.0004***
		(0.0000)	(0.0000)	(0.0001)	(0.0001)
Stock Digits X6 to X9		0.0011***	0.0011***	0.0007***	0.0007***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0093***	0.0107***	0.0207***		
	(0.0002)	(0.0002)	(0.0080)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	2,144,544	2,144,544	2,144,544	2,144,544	2,144,544
R^2	0.0002	0.0003	0.0008	0.0797	0.0838

Panel (C): Price = £10 to £100

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0069***	-0.0077***	-0.0069***	-0.0058***	-0.0046***
	(0.0005)	(0.0006)	(0.0006)	(0.0007)	(0.0008)
Stock Digits Y0 to Y5		0.0006***	0.0007***	0.0006***	0.0003
		(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits X6 to X9		0.0003	0.0007*	0.0001	0.0003
		(0.0004)	(0.0004)	(0.0004)	(0.0004)
Constant	0.0128***	0.0132***	0.0080***		
	(0.0006)	(0.0006)	(0.0017)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	340,298	340,298	340,298	340,298	340,298
R^2	0.0012	0.0012	0.0031	0.1497	0.1554

Table A3: Price Increasing Sample
Limit Order Robustness Tests

Panel (A): Excluding Pre-Market and After-Hours Sells (Outside 8am to 4:30pm)

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0043***	0.0054***	0.0049***	0.0053***	0.0059***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		-0.0003***	-0.0004***	-0.0005***	-0.0007***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		-0.0005***	-0.0003***	-0.0002***	-0.0002***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0084***	0.0078***	0.0075***		
	(0.0001)	(0.0001)	(0.0008)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,868,538	4,868,538	4,868,538	4,868,538	4,868,538
R^2	0.0004	0.0004	0.0018	0.0688	0.0736

Panel (B): Excluding Sells with Login the Day Before or Weekend Logins for Monday Sells

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0016***	0.0021***	0.0020***	0.0023***	0.0025***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Stock Digits Y0 to Y5		-0.0001***	-0.0001***	-0.0002***	-0.0003***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		-0.0002***	-0.0002***	-0.0002***	-0.0002***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Constant	0.0031***	0.0028***	0.0012***		
	(0.0001)	(0.0001)	(0.0003)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,834,411	4,834,411	4,834,411	4,834,411	4,834,411
R^2	0.0002	0.0002	0.0010	0.0616	0.0643

Note: Panels A, B and C show equal size bins of 1p, 10p and £1, respectively. Panel A drops 0.018% of sells, Panel B drops 61% of sells, Panel C drops 76% of sells, and Panel D drops 11% of sells.

Table A4: Price Increasing Sample
Limit Order Robustness Tests

Panel (C): Including Only FTSE100 Stocks

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0070***	0.0090***	0.0087***	0.0096***	0.0098***
	(0.0002)	(0.0003)	(0.0003)	(0.0004)	(0.0004)
Stock Digits Y0 to Y5		-0.0010***	-0.0009***	-0.0009***	-0.0009***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Stock Digits X6 to X9		-0.0001	-0.0001	-0.0005***	-0.0005***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0079***	0.0077***	0.0259***		
	(0.0002)	(0.0002)	(0.0013)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	1,126,143	1,126,143	1,126,143	1,126,143	1,126,143
R^2	0.0010	0.0012	0.0025	0.1024	0.1031

Panel (D): Excluding Accounts with Potential Limit Orders (Linnainmaa, 2010)

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0042***	0.0052***	0.0048***	0.0053***	0.0059***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		-0.0003***	-0.0004***	-0.0005***	-0.0007***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		-0.0004***	-0.0003***	-0.0003***	-0.0002***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0082***	0.0076***	0.0069***		
	(0.0001)	(0.0001)	(0.0008)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,553,582	4,553,582	4,553,582	4,553,582	4,553,582
R^2	0.0004	0.0004	0.0016	0.0700	0.0745

Note: Panels A, B and C show equal size bins of 1p, 10p and £1, respectively. Panel A drops 0.018% of sells, Panel B drops 61% of sells, Panel C drops 76% of sells, and Panel D drops 11% of sells.

Table A5: Summary Stats for Annual and Monthly Samples

	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
Monthly Increasing Sample	4,320,119	5.377	25.084	0.000	0.565	2.628	6.008	3,589.000
Monthly Decreasing Sample	5,124,666	4.625	24.242	0.000	0.211	1.002	5.038	2,062.035
Annual Increasing Sample	4,561,585	7.739	22.449	0.000	1.070	3.584	7.204	3,589.500
Annual Decreasing Sample	4,184,114	3.932	20.374	0.000	0.160	1.090	4.240	2,062.035

Table A6: Price Increasing Samples, Monthly and Annual Samples

Panel (A): Monthly Sample

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0057***	0.0067***	0.0062***	0.0065***	0.0070***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		-0.0001*	-0.0002***	-0.0005***	-0.0007***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		-0.0009***	-0.0005***	-0.0001	-0.0001
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0078***	0.0069***	0.0102***		
	(0.0001)	(0.0001)	(0.0012)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,320,119	4,320,119	4,320,119	4,320,119	4,320,119
R^2	0.0007	0.0007	0.0018	0.0632	0.0681

Panel (B): Annual Sample

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0028***	0.0038***	0.0035***	0.0042***	0.0048***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		-0.0005***	-0.0005***	-0.0005***	-0.0007***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		-0.0000	0.0000	-0.0002**	-0.0001
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0102***	0.0102***	0.0089***		
	(0.0002)	(0.0002)	(0.0009)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,561,585	4,561,585	4,561,585	4,561,585	4,561,585
R^2	0.0002	0.0002	0.0025	0.0763	0.0812

Table A7: Price Decreasing Samples, Monthly and Annual Samples

Panel (A): Monthly Sample

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0024***	-0.0037***	-0.0040***	-0.0040***	-0.0042***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)
Stock Digits Y0 to Y5		0.0007***	0.0007***	0.0006***	0.0006***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		0.0001	0.0002***	0.0002***	0.0003***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0092***	0.0093***	0.0148***		
	(0.0002)	(0.0002)	(0.0010)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	5,124,666	5,124,666	5,124,666	5,124,666	5,124,666
R^2	0.0002	0.0003	0.0006	0.0590	0.0623

Panel (B): Annual Sample

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0025***	-0.0035***	-0.0039***	-0.0032***	-0.0030***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Stock Digits Y0 to Y5		0.0001	0.0000	0.0003***	0.0003***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Stock Digits X6 to X9		0.0006***	0.0008***	0.0004***	0.0004***
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Constant	0.0119***	0.0128***	0.0168***		
	(0.0002)	(0.0003)	(0.0012)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	4,184,114	4,184,114	4,184,114	4,184,114	4,184,114
R^2	0.0001	0.0002	0.0006	0.0796	0.0845

Table A8: Probability of Sale and Left Digit, Price Increasing Sample, Sell Days

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0401***	0.0523***	0.0495***	0.0424***	0.0463***
	(0.0019)	(0.0025)	(0.0025)	(0.0024)	(0.0024)
Stock Digits Y0 to Y5		-0.0030***	-0.0036***	-0.0036***	-0.0057***
		(0.0005)	(0.0005)	(0.0005)	(0.0005)
Stock Digits X6 to X9		-0.0052***	-0.0038***	-0.0022***	-0.0015*
		(0.0008)	(0.0008)	(0.0007)	(0.0008)
Constant	0.1057***	0.0991***	0.0958***		
	(0.0032)	(0.0032)	(0.0092)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	418,946	418,946	418,946	418,946	418,946
R^2	0.0033	0.0036	0.0112	0.2464	0.2715

Note: The unit of observation is an investor × stock × day. The samples is restricted to sell days. We include only quarters in which the stocks increased in price (regarding the first observation of the quarter) and change the left most digit at least once during the quarter. Only those stocks that have changed the left most digit are included. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (X0). SE are clustered by account.

Table A9: Probability of Sale and Left Digit, Price Decreasing Sample, Sell Days

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0240***	-0.0388***	-0.0414***	-0.0316***	-0.0313***
	(0.0013)	(0.0021)	(0.0020)	(0.0019)	(0.0019)
Stock Digits Y0 to Y5		0.0024***	0.0025***	0.0031***	0.0037***
		(0.0004)	(0.0004)	(0.0004)	(0.0004)
Stock Digits X6 to X9		0.0073***	0.0078***	0.0043***	0.0035***
		(0.0009)	(0.0009)	(0.0008)	(0.0008)
Constant	0.1147***	0.1246***	0.1554***		
	(0.0026)	(0.0031)	(0.0091)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	427,965	427,965	427,965	427,965	427,965
R^2	0.0015	0.0019	0.0035	0.2225	0.2450

Note: The unit of observation is an investor × stock × day. The samples is restricted to sell days. We include only quarters in which the stocks have not increased in price (regarding the first observation of the quarter) and have not changed the left most digit at least once during the quarter. Regressions fit an intercept for the change in the left most digit at X0 and two slopes for the left (with values in the range -3 to 0, corresponding to X6 to X9) and right (with values in the range 0 to 5, corresponding to Y0 to Y5) values. The constant shows the probability to sell the stock at when the second digit is 9 (X9). The second digit over threshold dummy shows the jump in probability when the first digit changes and so the second digit becomes 0 (X0). SE are clustered by account.

Table A10: Price Increasing Subsamples with Equal Prices Bins, Sell Days

Panel (A): Price = £0.11 to £1.01

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0341***	0.0471***	0.0438***	0.0298***	0.0273***
	(0.0027)	(0.0038)	(0.0038)	(0.0037)	(0.0037)
Stock Digits Y0 to Y5		-0.0035***	-0.0033***	-0.0029***	-0.0033***
		(0.0009)	(0.0009)	(0.0009)	(0.0009)
Stock Digits X6 to X9		-0.0036***	-0.0023	-0.0016	-0.0013
		(0.0014)	(0.0014)	(0.0014)	(0.0015)
Constant	0.1177***	0.1128***	0.2175***		
	(0.0045)	(0.0048)	(0.0242)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	117,610	117,610	117,610	117,610	117,610
R^2	0.0024	0.0026	0.0147	0.3492	0.3740

Panel (B): Price = £1.01 to £10.1

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0500***	0.0654***	0.0637***	0.0503***	0.0523***
	(0.0026)	(0.0035)	(0.0035)	(0.0033)	(0.0033)
Stock Digits Y0 to Y5		-0.0051***	-0.0058***	-0.0044***	-0.0062***
		(0.0007)	(0.0007)	(0.0007)	(0.0007)
Stock Digits X6 to X9		-0.0044***	-0.0036***	-0.0023**	-0.0008
		(0.0010)	(0.0010)	(0.0010)	(0.0010)
Constant	0.0919***	0.0866***	0.1168***		
	(0.0032)	(0.0031)	(0.0211)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	209,483	209,483	209,483	209,483	209,483
R^2	0.0057	0.0062	0.0141	0.3025	0.3176

Panel (C): Price = £11 to £101

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0642***	0.0849***	0.0811***	0.0582***	0.0619***
	(0.0054)	(0.0068)	(0.0066)	(0.0077)	(0.0079)
Stock Digits Y0 to Y5		-0.0052**	-0.0051**	0.0023	0.0014
		(0.0023)	(0.0023)	(0.0024)	(0.0026)
Stock Digits X6 to X9		-0.0158***	-0.0172***	-0.0139***	-0.0117***
		(0.0035)	(0.0035)	(0.0039)	(0.0040)
Constant	0.0971***	0.0839***	-0.0061		
	(0.0041)	(0.0044)	(0.0133)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	27,460	27,460	27,460	27,460	27,460
R^2	0.0079	0.0090	0.0292	0.4648	0.4820

Table A11: Price Decreasing Subsamples with Equal Prices Bins, Sell Days

Panel (A): Price = £0.10 to £1.00

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	0.0341***	0.0471***	0.0438***	0.0298***	0.0273***
	(0.0027)	(0.0038)	(0.0038)	(0.0037)	(0.0037)
Stock Digits Y0 to Y5		-0.0035***	-0.0033***	-0.0029***	-0.0033***
		(0.0009)	(0.0009)	(0.0009)	(0.0009)
Stock Digits X6 to X9		-0.0036***	-0.0023	-0.0016	-0.0013
		(0.0014)	(0.0014)	(0.0014)	(0.0015)
Constant	0.1177***	0.1128***	0.2175***		
	(0.0045)	(0.0048)	(0.0242)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	117,610	117,610	117,610	117,610	117,610
R^2	0.0024	0.0026	0.0147	0.3492	0.3740

Panel (B): Price = £1.00 to £10.0

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0313***	-0.0472***	-0.0502***	-0.0388***	-0.0359***
	(0.0019)	(0.0029)	(0.0029)	(0.0030)	(0.0030)
Stock Digits Y0 to Y5		0.0018***	0.0019***	0.0037***	0.0031***
		(0.0006)	(0.0006)	(0.0006)	(0.0007)
Stock Digits X6 to X9		0.0099***	0.0100***	0.0046***	0.0048***
		(0.0013)	(0.0012)	(0.0012)	(0.0012)
Constant	0.1177***	0.1301***	0.2425***		
	(0.0030)	(0.0038)	(0.0795)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	166,494	166,494	166,494	166,494	166,494
R^2	0.0027	0.0033	0.0059	0.2875	0.3057

Panel (C): Price = £10 to £100

	$Probability\ of\ Sale_{ijt} = 1$				
	(1)	(2)	(3)	(4)	(5)
Above Y0 = 1 (in Range Y0 to Y5)	-0.0629***	-0.0735***	-0.0654***	-0.0427***	-0.0296***
	(0.0059)	(0.0070)	(0.0070)	(0.0081)	(0.0098)
Stock Digits Y0 to Y5		0.0108***	0.0099***	0.0053**	0.0017
		(0.0024)	(0.0025)	(0.0027)	(0.0030)
Stock Digits X6 to X9		0.0004	0.0030	-0.0047	-0.0029
		(0.0049)	(0.0049)	(0.0052)	(0.0053)
Constant	0.1497***	0.1501***	0.0929***		
	(0.0065)	(0.0068)	(0.0239)		
Day FE	NO	NO	YES	YES	YES
Industry FE	NO	NO	YES	YES	YES
Account FE	NO	NO	NO	YES	YES
Stock FE	NO	NO	NO	NO	YES
Observations	24,859	24,859	24,859	24,859	24,859
R^2	0.0087	0.0102	0.0241	0.4411	0.4628

References

Akepanidtaworn, K., R. Di Mascio, A. Imas, and L. Schmidt (2019). Selling fast and buying slow: Heuristics and trading performance of institutional investors. *Available at SSRN 3301277*.

Hartzmark, S. M. (2015). The Worst, the Best, Ignoring All the Rest: The Rank Effect and Trading Behavior. *Review of Financial Studies 28*, 1024–1059.

Poltrock, S. E. and D. R. Schwartz (1984). Comparative judgments of multidigit numbers. *Journal of Experimental Psychology: Learning, Memory, and Cognition 10*(1), 32.

Shlain, A. S. (2018). More than a penny's worth: Left-digit bias and firm pricing. *manuscript, University of California, Berkeley*.