INTERNET APPENDIX for "Individual Investors and Volatility"*

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In this Internet Appendix, we provide supplementary tables for the results reported in our published paper but untabulated there for brevity. Below, we provide an index of the tables in this internet appendix and we briefly describe the purpose of each table.

1. **Table IA.I. Excluding Stocks that Drop from the Control Group before the Reform.** In the published version of the paper, Table VI provides estimates of the impact of the reform of the French stock market considered in our paper on our proxies for the volatility of stock returns, the autocovariance of stock returns and the price impact of trades. Our sample contains stocks that switch from the treated group to the control group and vice versa before the reform. In Table IA, we show that the conclusions from Table VI in the published version are unaltered when we exclude these stocks from the sample.

2. **Table IA.II. Excluding Underlyings for Futures and Options.** In the published version of the paper, Table VI provides estimates of the impact of the reform of the French stock market considered in our paper on our proxies for the volatility of stock returns, the autocovariance of stock returns and the price impact of trades. Our sample contains stocks that serve as underlying securities for single futures or options. In Table IIA, we show that the conclusions from Table VI in the published version are unaltered when we exclude these stocks from the sample.

3. **Table IA.III. Test of Implication 1 with Various Measures of Volatility.** In Panel A of Table VI in the published version of the paper, we estimate the impact of the reform of the French stock market considered in our paper on the idosyncratic volatility of the stocks affected by this reform. We use the monthly standard deviation of the daily difference between the raw return and the market return (*Volatility2*) as a proxy for the idiosyncartic of stock returns. In Table IA.III, we show that the our results regarding the effect on volatility are robust when we use other measures of idiosyncratic volatility, namely (i) the monthly standard deviation of daily raw returns (*Volatility1)* or (ii) the monthly standard deviation of the residual of the time-series regression of the daily excess return for a stock on the daily excess market return (*Volatility3*).

4. **Table IA.IV. Controlling for Contemporaneous Returns.** In the published version of the paper, Table VI provides estimates of the impact of the reform of the French stock market considered in our paper on our proxies for the volatility of stock returns, the autocovariance of stock returns and the price impact of trades. In the regressions used to estimate this impact, we do not control for the effect of contemporaneous stock returns on our dependent variables (in particular volatility).

In Table IA.IV, we rerun these regressions adding contemporaneous stock returns as a control variable. The conclusions from Table VI are unaltered.

5. **Table IA.V. Varying the Time Window.** In the published version of the paper, Table VI provides estimates of the impact of the reform of the French stock market considered in our paper on our proxies for the volatility of stock returns, the autocovariance of stock returns and the price impact of trades. In the regressions used to estimate this impact, we use a 48 months time windows centered around the event date (the date of the reform). In Table IA.V, we show the results of the same regressions with, respectively, a thirty-six months and twenty-four months time windows centered around the event.

6. **Table IA.VI. Impact of the Reform on the Relative Bid-Ask Spread.** In this table, we estimate the impact of the reform on the relative bid-ask spread of the stocks in our sample. This purpose of this estimation and the results are discussed in Section G in the published version of our paper.

7. **Table IA.VII. Robustness of the Findings to Attrition.** In this table, we show that the findings of Table VI in the published version of the paper are unchanged when we exclude stocks with missing observations from our sample.

8. **Table IA.VIII. Retail Trading and Volatility: IV Estimate.** In this table, we estimate the impact of retail trading activity on volatility using an instrumental variable regression (IV) using the reform of the French stock market described in the published version of our paper as an intsrument. The results from the table confirms that retail trading activity has a positive impact on volatility.

9. **Table IA.IX. Contrarian Retail Trading Activity and Volatility.** In this table, we report the estimates of a simple OLS regression of the monthly standard deviation of the daily difference between the raw return and the market return (*Volatility2*) on the measures of retail trading activity used in Section H of the published version of the paper (namely, $|NIT_{it}|$, CON_{it} and MOM_{it}). For all specifications, we find a strong positive association between volatility and these measures of retail trading activity.

Table IA.I

Excluding Stocks that Drop from the Control Group before the Reform

In this table, we estimate the impact of the reform on our three main dependent variables, *Volatility2* (Panel A), *Autocov* (Panel B), and *Pimpact* (Panel C) using the same methodology as in Table VI in the paper, but we restrict our sample to stocks that do not switch from the RM to the spot market or vice versa between September 1998 and August 2000 (we lose 19 stocks). $Volatility2_{it}$ is the standard deviation of the daily difference between the return of stock i and the market return in month t. $Autocov_{it}$ is the autocovariance of daily returns for stock i in month t. $Pimpact_{it}$ is the average of the ratio of stock i's absolute return divided by the trading volume in euros on each day in month t. In Column 1, we estimate the following regression:

$$Y_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \varepsilon_{it},$$

where $Post_t$ is a dummy variable equal to one after September 2000 and $Treated_i$ is equal to one if stock i is listed on the RM. The differences-in-differences estimate of the effect of the reform on the dependent variable is β_2. In Columns 2, 3, and 4, we estimate the following regression:

$$Y_{it} - Y_{it}^{match} = \alpha_i + \delta_1 Post_t + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t and Y_{it}^{match} is the value of this variable for the match of stock i in month t in the group of control stocks. We use three different procedures to choose a match for stock i in month t: quartile matching, percentage difference matching, and propensity score matching (See Section IV.B). Estimates of the effect of the reform (δ_1) with each matching procedure are reported in Columns 2, 3, and 4, respectively. The sample period starts in September 1998 and ends up in September 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.I-continued

	DD	Quartile matching	Percentage difference matching	Propensity score matching
	(1)	(2)	(3)	(4)
Panel A. Dependent Variable: Volatility2 (Implication 1)				
Treated× Post (β_2)	-0.303***			
	[-5.41]			
Treated	-0.506***			
	[-8.85]			
Post (δ_1)	0.195	-0.202***	-0.200***	-0.271***
	[1.56]	[-3.04]	[-3.04]	[-3.11]
Constant	2.887***	-0.253***	-0.222***	-0.278***
	[30.91]	[-4.85]	[-3.70]	[-4.00]
Observations	29,498	6,990	4,257	5,341
R^2	0.061	0.015	0.008	0.013
Panel B. Dependent Variable: Autocov (Implication 2)				
Treated×Post (β_2)	0.309***			
	[3.43]			
Treated	0.067			
	[1.02]			
Post (δ_1)	-0.489***	0.620***	0.335**	0.445**
	[-5.18]	[4.20]	[2.19]	[2.31]
Constant	-0.222***	-0.172	-0.226**	-0.173
	[-2.68]	[-1.56]	[-2.30]	[-1.48]
Observations	28,654	6,972	4,226	5,275
R^2	0.008	0.024	0.003	0.006
Panel C. Dependent Variable: Pimpact (Implication 3)				
Treatment×Post (β_2)	-3.941***			
	[-4.24]			
Treated	-8.264***			
	[-11.76]			
Post (δ_1)	4.043***	-1.479***	-2.233***	-0.816
	[4.36]	[-4.67]	[-3.05]	[-1.61]
Constant	8.310***	-0.650***	-0.783***	-0.313***
	[11.81]	[-4.74]	[-3.85]	[-3.67]
Observations	31,018	7,074	4,378	5,483
R^2	0.038	0.037	0.015	0.004

Table IA.II

Excluding Underlyings for Futures and Options

In this table, we estimate the impact of the reform on our three main dependent variables, namely, *Volatility2* (Panel A), *Autocov* (Panel B), and *Pimpact* (Panel C), using the same methodology as in Table VI in the paper but we exclude from our sample stocks that serve as the underlying for single futures or options. $Volatility2_{it}$ is the standard deviation of the daily difference between the return of stock i and the market return in month t. $Autocov_{it}$ is the autocovariance of daily returns for stock i in month t. $Pimpact_{it}$ is the average of the ratio of stock i's absolute return divided by the trading volume in euros on each day in month t. In Column 1, we estimate the following regression:

$$Y_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \varepsilon_{it},$$

where $Post_t$ is a dummy variable equal to one after September 2000 and $Treated_i$ is equal to one if stock i is listed on the RM. The differences-in-differences estimate of the effect of the reform on the dependent variable is β_2. In Columns 2, 3, and 4, we estimate the following regression:

$$Y_{it} - Y_{it}^{match} = \alpha_i + \delta_1 Post_t + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t and Y_{it}^{match} is the value of this variable for the match of stock i in month t in the group of control stocks. We use three different procedures to choose a match for stock i in month t: quartile matching, percentage difference matching, and propensity score matching (see Section IV.B). Estimates of the effect of the reform (δ_1) with each matching procedure are reported in Columns 2, 3, and 4, respectively. The sample period starts in September 1998 and ends up in September 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

TableIA.II-continued

	DD	Quartile matching	Percentage difference matching	Propensity score matching
	(1)	(2)	(3)	(4)
Panel A. Dependent Variable: Volatility2 (Implication 1)				
Treated× Post (β_2)	-0.255***			
	[-4.43]			
Treated	-0.430***			
	[-7.25]			
Post (δ_1)	0.200	-0.207***	-0.196***	-0.308***
	[1.60]	[-3.40]	[-2.95]	[-3.05]
Constant	2.877***	-0.199***	-0.233***	-0.282***
	[30.80]	[-3.89]	[-3.56]	[-3.42]
Observations	27,880	5,105	3,743	3,830
R^2	0.038	0.015	0.007	0.014
Panel B. Dependent Variable: Autocov (Implication 2)				
Treated×Post (β_2)	0.302***			
	[3.31]			
Treated	0.071			
	[1.08]			
Post (δ_1)	-0.485***	0.592***	0.300*	0.397*
	[-5.19]	[4.33]	[1.91]	[1.66]
Constant	-0.231***	-0.186**	-0.210*	-0.153
	[-2.81]	[-1.99]	[-1.94]	[-1.13]
Observations	27,024	5,085	3,707	3,775
R^2	0.008	0.021	0.003	0.004
Panel C. Dependent Variable: Pimpact (Implication 3)				
Treatment×Post (β_2)	-3.980***			
	[-4.30]			
Treated	-8.101***			
	[-11.70]			
Post (δ_1)	4.127***	-1.826***	-2.231***	-1.279*
	[4.47]	[-4.56]	[-2.91]	[-1.68]
Constant	8.173***	-0.822***	-0.899***	-0.429***
	[11.81]	[-4.69]	[-3.90]	[-3.65]
Observations	29,415	5,191	3,862	3,976
R^2	0.031	0.048	0.014	0.007

Table IA.III

Test of Implication 1 with Various Measures of Volatility

In this table, we estimate the impact of the reform on volatility using three different proxies for volatility, *Volatility1* (Panel A), *Volatility2* (Panel B), and *Volatility3* (Panel C). *Volatility1* is the monthly standard deviation of daily raw returns. *Volatility2* is the monthly standard deviation of the daily difference between the raw return and the market return. *Volatility3* is the monthly standard deviation of the residual of the time-series regression of the daily excess return for a stock on the daily excess market return. In Column 1, we estimate the differences-in-differences (DD) regression:

$$Y_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \varepsilon_{it},$$

where Y_{it} is one of the three measures of volatility, $Post_t$ is a dummy variable equal to one after September 2000, and $Treated_i$ is equal to one if stock i is listed on the RM. The differences-in-differences estimate of the effect of the reform on the dependent variable is β_2. In Columns 2, 3, and 4, we estimate the following regression:

$$Y_{it} - Y_{it}^{match} = \alpha_i + \delta_1 Post_t + \varepsilon_{it},$$

where Y_{it} is one of the measures of volatility for stock i in month t and Y_{it}^{match} is the value of this measure of volatility for the match of stock i in month t in the group of control stocks. We use three different procedures to choose a match for stock i in month t: quartile matching, percentage difference matching, and propensity score matching (see Section IV.B). Estimates of the effect of the reform (δ_1) with each matching procedure are reported in Columns 2, 3, and 4, respectively. The sample period starts in September 1998 and ends up in September 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.III-continued

	DD	Quartile matching	Percentage difference matching	Propensity score matching
	(1)	(2)	(3)	(4)
	Panel A. Dependent Variable: Volatility2			
Treated× Post (β_2)	-0.297***			
	[-5.47]			
Treated	-0.472***			
	[-8.52]			
Post (δ_1)	0.200	-0.274***	-0.194***	-0.172***
	[1.60]	[-3.25]	[-2.97]	[-2.71]
Constant	2.877***	-0.238***	-0.227***	-0.192***
	[30.80]	[-3.52]	[-4.41]	[-3.31]
Observations	30,181	5,652	7,398	4,552
R^2	0.056	0.013	0.014	0.006
	Panel B. Dependent Variable: Volatility1			
Treated×Post (β_2)	-0.240***			
	[-2.60]			
Treated	-0.266***			
	[-3.25]			
Post (δ_1)	0.141	-0.220**	-0.115	-0.130
	[1.24]	[-2.16]	[-1.54]	[-1.60]
Constant	2.698***	-0.264***	-0.213***	-0.115*
	[28.50]	[-3.34]	[-3.62]	[-1.68]
Observations	30,181	5,652	7,398	4,552
R^2	0.018	0.006	0.003	0.002
	Panel C. Dependent Variable: Volatility3			
Treatment×Post (β_2)	-0.314***			
	[-4.70]			
Treated	-0.372***			
	[-5.54]			
Post (δ_1)	0.116	-0.342***	-0.247***	-0.215***
	[1.16]	[-3.83]	[-3.76]	[-3.09]
Constant	2.581***	-0.240***	-0.200***	-0.162***
	[30.91]	[-3.27]	[-3.71]	[-2.58]
Observations	30,181	5,652	7,398	4,552
R^2	0.036	0.017	0.020	0.008

Table IA.IV

Controlling for Contemporaneous Returns

In this table, we estimate the impact of the reform on our three main dependent variables, *Volatility2* (Panel A), *Autocov* (Panel B), and *Pimpact* (Panel C), using the same methodology as in Table VI in the paper but we control for contemporaneous returns. In Column 1, we estimate the following regression:

$$Y_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \beta_3 \text{Return}_{it} + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t, $Post_t$ is a dummy variable equal to one after September 2000, $Treated_i$ is equal to one if stock i is listed on the RM, and Return_{it} is the return of stock i in month t. The differences-in-differences estimate of the effect of the reform on the dependent variable is β_2. In Columns 2, 3, and 4, we estimate the following regression:

$$Y_{it} - Y_{it}^{match} = \alpha_i + \delta_1 Post_t + \beta_3 \text{Return}_{it} + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t and Y_{it}^{match} is the value of this variable for the match of stock i in month t in the group of control stocks. We use three different procedures to choose a match for stock i in month t: quartile matching, percentage difference matching, and propensity score matching (see Section IV.B). Estimates of the effect of the reform (δ_1) with each matching procedure are reported in Columns 2, 3, and 4, respectively. Constant terms are included in the regressions, but not reported in the table to preserve space. The sample period starts in 1998 and ends in 2002. In brackets, we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.IVcontinued

	DD	Quartile matching	Percentage difference matching	Propensity score matching
	(1)	(2)	(3)	(4)
Panel A. Dependent Variable: Volatility2 (Implication 1)				
Treated× Post (β_2)	-0.295***			
	[-5.45]			
Treated	-0.473***			
	[-8.54]			
Post (δ_1)	0.202*	-0.177***	-0.147**	-0.255***
	[1.65]	[-2.73]	[-2.34]	[-3.10]
Return	0.006	0.474	0.748**	0.620*
	[0.01]	[1.35]	[2.13]	[1.70]
Observations	30,110	7,392	4,552	5,652
R^2	0.057	0.018	0.012	0.016
Panel B. Dependent Variable: Autocov of Returns (Implication 2)				
Treated×Post (β_2)	0.277***			
	[2.98]			
Treated	0.110*			
	[1.84]			
Post (δ_1)	-0.396***	0.630***	0.362**	0.492**
	[-4.70]	[4.13]	[2.38]	[2.53]
Return	2.121***	0.593	0.991	1.799***
	[4.97]	[1.01]	[1.25]	[2.64]
Observations	29,268	7,372	4,512	5,578
R^2	0.023	0.023	0.005	0.011
Panel C. Dependent Variable: Pimpact (Implication 3)				
Treatment×Post (β_2)	-3.993***			
	[-4.28]			
Treated	-8.110***			
	[-11.83]			
Post (δ_1)	3.926***	-1.382***	-1.701***	-0.353*
	[4.30]	[-4.67]	[-3.00]	[-1.92]
Return	-4.770***	1.260	1.145	-0.521
	[-3.32]	[1.37]	[1.03]	[-1.50]
Observations	31,576	7,439	4,643	5,781
R^2	0.040	0.041	0.013	0.005

Table IA.V

Varying the Time Window

In this table, we estimate the impact of the reform on our three main dependent variables, *Volatility2* (Panel A), *Autocov* (Panel B), and *Pimpact* (Panel C), using the same methodology as in Table VI in the paper but we use different estimation windows centered around the reform: a 36 month window (Panels A, B, and C) and a 24 month window (Panels D, E, and F). In each case, we estimate the impact of the reform on our three main dependent variables: *Volatility2* (Panels A and D), *Autocov* (Panels B and E), and *Pimpact* (Panels C and F). $Volatility2_{it}$ is the standard deviation of the daily difference between the return of stock i and the market return in month t. $Autocov_{it}$ is the autocovariance of daily returns for stock i in month t. $Pimpact_{it}$ is the average of the ratio of stock i's absolute return divided by the trading volume in euros on each day in month t. In Column 1, we estimate the following regression:

$$Y_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \beta_3 \text{Return}_{it} + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t, $Post_t$ is a dummy variable equal to one after September 2000, $Treated_i$ is equal to one if stock i is listed on the RM, and Return_{it} is the return of stock i in month t. The differences-in-differences estimate of the effect of the reform on the dependent variable is β_2. In Columns 2, 3, and 4, we estimate the following regression:

$$Y_{it} - Y_{it}^{match} = \alpha_i + \delta_1 Post_t + \beta_3 \text{Return}_{it} + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t and Y_{it}^{match} is the value of this variable for the match of stock i in month t in the group of control stocks. We use three different procedures to choose a match for stock i in month t: quartile matching, percentage difference matching, and propensity score matching (see Section IV.B). Estimates of the effect of the reform (δ_1) with each matching procedure are reported in Columns 2, 3, and 4, respectively. Constant terms are included in the regressions, but not reported in the table to preserve space. The sample period starts in 1998 and ends in 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.V-continued

	DD	Quartile matching	Percentage difference matching	Propensity score matching
	(1)	(2)	(3)	(4)
Panel A. Dependent Variable: Volatility2 (Implication 1). Estimation window: 36 months				
Treated× Post (β_2)	-0.244***			
	[-4.74]			
Treated	-0.534***			
	[-9.82]			
Post (δ_1)	0.225	-0.203***	-0.191***	-0.263***
	[1.55]	[-2.96]	[-3.21]	[-3.41]
Return	2.851***	-0.268***	-0.206***	-0.299***
	[24.46]	[-4.65]	[-3.17]	[-4.03]
Observations	22,317	5,352	3,277	4,077
R^2	0.060	0.015	0.007	0.011
Panel B. Dependent Variable: Autocov (Implication 2). Estimation window: 36 months				
Treated×Post (β_2)	0.273***			
	[3.05]			
Treated	0.046			
	[0.76]			
Post (δ_1)	-0.389***	0.584***	0.127	0.442*
	[-4.20]	[3.32]	[0.80]	[1.94]
Return	-0.251***	-0.177	-0.093	-0.167
	[-2.94]	[-1.37]	[-1.12]	[-1.49]
Observations	21,680	5,335	3,246	4,024
R^2	0.005	0.021	0.001	0.006
Panel C. Dependent Variable: Pimpact (Implication 3). Estimation window: 36 months				
Treatment×Post (β_2)	-3.076***			
	[-3.78]			
Treated	-7.962***			
	[-10.95]			
Post (δ_1)	3.167***	-1.113***	-2.000**	-0.881
	[3.94]	[-4.25]	[-2.56]	[-1.41]
Return	8.014***	-0.726***	-0.897***	-0.364***
	[11.03]	[-4.68]	[-3.94]	[-3.39]
Observations	23,441	5,425	3,379	4,202
R^2	0.035	0.025	0.011	0.004

Table IA.V-continued

Panel D. Dependent Variable: Volatility2 (Implication 1). Estimation window: 24 months				
Treated× Post (β_2)	-0.147***			
	[-2.90]			
Treated	-0.593***			
	[-10.32]			
Post (δ_1)	-0.096	-0.197**	-0.164***	-0.230***
	[-0.75]	[-2.43]	[-2.77]	[-3.10]
Return	3.074***	-0.302***	-0.206**	-0.358***
	[25.73]	[-4.14]	[-2.58]	[-4.08]
Observations	15,083	3,569	2,141	2,675
R^2	0.058	0.013	0.004	0.008
Panel E. Dependent Variable: Autocov (Implication 2). Estimation window: 24 months				
Treated×Post (β_2)	0.176**			
	[1.98]			
Treated	0.028			
	[0.36]			
Post (δ_1)	-0.383***	0.582**	-0.028	0.417*
	[-3.06]	[2.36]	[-0.16]	[1.66]
Return	-0.216*	-0.217	-0.072	-0.169
	[-1.80]	[-1.25]	[-0.57]	[-1.03]
Observations	14,619	3,556	2,117	2,627
R^2	0.004	0.019	0.000	0.005
Panel F. Dependent Variable: Pimpact (Implication 3). Estimation window: 24 months				
Treatment×Post (β_2)	-2.535***			
	[-3.20]			
Treated	-7.775***			
	[-9.90]			
Post (δ_1)	2.624***	-0.812***	-1.450**	-0.650
	[3.41]	[-3.38]	[-2.08]	[-1.17]
Return	7.836***	-0.848***	-1.037***	-0.438***
	[10.00]	[-4.57]	[-3.77]	[-3.05]
Observations	15,873	3,617	2,215	2,774
R^2	0.033	0.013	0.006	0.003

Table IA.VI

Impact of the Reform on the Relative Bid-Ask Spread

In this table, we estimate the impact of the reform on the relative bid-ask spread. In Column 1, we estimate the differences-in-differences (DD) regression:

$$Spread_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \varepsilon_{it},$$

where $Spread_{it}$ is the average relative spread of stock i in month t, $Post_t$ is a dummy variable equal to one after September 2000, and $Treated_i$ is equal to one if stock i is listed on the RM. The differences-in-differences estimate of the effect of the reform on the relative bid-ask spread is β_2. In Columns 2 to 4, we estimate the following regression:

$$Spread_{it} - Spread_{it}^{match} = \alpha_i + \delta_1 Post_t + \varepsilon_{it},$$

where $Spread_{it}^{match}$ is the relative bid-ask spread for the match of stock i in month t in the group of control stocks. We use three different procedures to choose a match for stock i in month t: quartile matching, percentage difference matching, and propensity score matching (see Section IV.B). Estimates of the effect of the reform (δ_1) with each matching procedure are reported in Columns 1, 2, and 3, respectively. The sample period starts in September 1998 and ends in September 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.VI-continued

Dependent Variable: Spread				
Estimation Method	DD	Quartile matching	Percentage difference matching	Propensity score matching
	(1)	(2)	(3)	(4)
Treated×Post (β_2)	-0.510			
	[-1.53]			
Treated	-4.946***			
	[-13.37]			
Post (δ_1)	0.687**	-0.397***	-0.112	-0.009
	[2.02]	[-2.59]	[-0.58]	[-0.06]
Constant	6.692***	-1.781***	-1.598***	-2.069***
	[18.71]	[-16.64]	[-11.28]	[-8.81]
Observation	10524	2731	1503	1849
R^2	0.10	0.03	0.00	0.00

Table IA.VII

Robustness of the Findings to Attrition

In this table, we show that our findings are unchanged when we exclude stocks with missing observations from our sample. We called the resulting sample the balanced sample as it contains the same stocks throughout the sample period. Specifically, we estimate the impact of the reform on the variables of interest (*Volatility2*, *Autocov*, and *Pimpact*) by running the following regression:

$$Y_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \varepsilon_{it},$$

where Y_{it} is the dependent variable of interest for stock i in month t, $Post_t$ is a dummy variable equal to one after September 2000, and $Treated_i$ is equal to one if stock i is listed on the RM. In Panel A, $Y_{it} = Volatility2_{it}$, the standard deviation of the daily difference between the return of stock i and the market return in month t. In Panel B, $Y_{it} = Autocov_{it}$, the autocovariance of daily returns for stock i in month t. In Panel C, Y_{it} =Pimpact$_{it}$, the average of the ratio of stock i's absolute return divided by the trading volume in euros on each day in month t. In Columns 1 and 2 we report estimates of the regression for the sample used in our study with and without fixed effects. In Columns 3 and 4, we report estimates of the regression for the balanced sample with and without fixed effects. The sample period starts in 1998 and ends in 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.VII-continued

Sample	Baseline Sample		Balanced Sample	
Stock FE	No	Yes	No	Yes
	(1)	(2)	(3)	(4)
Panel A. Volatility2 (Implication 1)				
Treated×Post	-0.297***	-0.215***	-0.142***	-0.142***
	[-5.47]	[-4.06]	[-2.78]	[-2.61]
Treated	-0.472***		-0.264***	
	[-8.52]		[-4.18]	
Post	0.200	0.091	0.027	0.027
	[1.60]	[0.72]	[0.20]	[0.20]
Constant	2.877***	2.805***	2.649***	2.537***
	[30.80]	[32.05]	[26.47]	[28.81]
Observations	30181	30181	13965	13965
Panel B. Autocov (Implication 2)				
Treated×Post	0.293***	0.324***	0.228**	0.228**
	[3.24]	[3.30]	[2.25]	[2.20]
Treated	0.109*		-0.017	
	[1.74]		[-0.21]	
Post	-0.484***	-0.563***	-0.413***	-0.413***
	[-5.19]	[-5.53]	[-3.52]	[-3.46]
Constant	-0.231***	-0.168**	-0.068	-0.076
	[-2.81]	[-2.18]	[-0.65]	[-0.92]
Observations	29325	29325	12838	12838
Panel C. PImpact (Implication 3)				
Treated×Post	-4.029***	-4.753***	-1.862***	-1.862***
	[-4.36]	[-5.00]	[-3.17]	[-3.00]
Treated	-8.120***		-3.757***	
	[-11.73]		[-6.86]	
Post	4.119***	4.873***	1.894***	1.894***
	[4.47]	[5.18]	[3.20]	[3.03]
Constant	8.173***	5.967***	3.797***	2.384***
	[11.81]	[19.45]	[6.92]	[13.59]
Observations	31716	31716	16023	16023

Table IA.VIII

Retail Trading and Volatility: IV Estimate

In this table, we estimate the impact of retail trading on *Volatility2* (the standard deviation of daily market adjusted returns) using the reform as an instrument. Column 1 reports the first stage of the IV procedure:

$$\#Trades_{it} = \alpha + \beta_0 Treated_i + \beta_1 Post_t + \beta_2 Treated_i \times Post_t + \varepsilon_{it},$$

where $\#Trades_{it}$ is the number of shares of stock i purchased and sold in month t by retail investors in our sample (our proxy for retail trading activity here), $Post_t$ is a dummy variable equal to one after September 2000, and $Treated_i$ is a dummy variable equal to one if stock i is listed on the RM. The difference in the effect of the reform on treated and control firms is measured by $Treated \times Post$. The coefficient on this variable is statistically significant (t-statistic of 5) which suggests the IV is not weak. The estimates from Column 1 are consistent with, and very similar in nature to, those of Table V, Column 1, Panels A and B, where the same equation is estimated for buys and sells separately. In Column 2, we report the result of a "naive" OLS estimate of the regression of *Volatility2* on *#Trades*, controlling for Post and Treated. Finally, Column 3 reports the two-stage least square estimate. In all regressions, the sample period starts in September 1998 and ends in September 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly di§erent from zero at, respectively, the 10%, 5%, and 1% levels of significance.

Table IA.VIII-continued

	(1)	(2)	(3)
	First Stage	OLS	IV
Dep. Variable	#Trades	Volatility2	Volatility2
Treated×Post	-0.041***	-	-
	[-5.02]		
Post	-0.015***	0.220***	0.305***
	[-3.76]	[9.39]	[5.93]
Treated	0.010	-0.686***	-0.633***
	[0.98]	[-17.41]	[-10.71]
#Trades	-	2.966***	6.315***
		[23.59]	[3.76]
Constant	0.084***	2.701***	2.385***
	[19.96]	[88.83]	[14.96]
Observations	29214	24625	24625
R^2	0.01	0.20	0.04

Table IA.IX

Contrarian Retail Trading Activity and Volatility

In Columns 1 to 3, we report estimates of the following regression:

$$\text{Volatility2}_{it} = \alpha_i + \lambda_t + \beta_1 |NIT_{it}| + \varepsilon_{it},$$

where *Volatility2*$_{it}$ is the standard deviation of the daily difference between the raw return of stock i and the market return in month t, $|NIT_{it}|$ is the mean monthly absolute daily difference between buys and sales by retail investors in our sample for stock i in month t, and α_i and λ_t are stocks and time fixed effects. In Columns 4 to 6, we report estimates of the following regression:

$$\text{Volatility2}_{it} = \alpha_i + \lambda_t + \theta_1 MOM_{it} + \theta_2 CON_{it} + \varepsilon_{it},$$

where MOM_{it} is a measure of momentum retail trading activity and CON_{it} is a measure of contrarian retail trading activity (see main text for a formal definition of these variables). The sample period for this test starts in January 1999 and ends in September 2002. In brackets we report t-statistics based on doubled-clustered errors allowing for correlation in residuals over time and across firms. Superscripts *, **, and *** indicate that estimates are significantly different from zero at, respectively, the 10%, 5%, and 1% levels of significance.

	Dependent Variable: Volatility2					
	(1)	(2)	(3)	(4)	(5)	(6)
$\lvert NIT_{it}\rvert$ (×100)	1.8***	1.1***	1.1***	-	-	-
	(15.5)	(7.2)	(15.8)			
MOM (×100)	-	-	-	2.2***	1.3***	1.0***
				(14.6)	(6.7)	(10.1)
CON (×100)	-	-	-	1.7***	1.2***	1.2***
				(10.7)	(7.8)	(12.0)
Stock FE	No	Yes	Yes	No	Yes	Yes
Time FE	No	No	Yes	No	No	Yes
Observations	27,909	27,909	27,909	19,959	19,959	19,959