Internet Appendix for "Mutual Fund Trading Pressure: Firm-level Stock Price Impact and Timing of SEOs," by Mozaffar Khan, Leonid Kogan and George Serafeim.[*]

This appendix tabulates results summarized in Section IV of our paper, and also reports the results of additional tests.

(1) Inferences regarding overvaluation of *IBP* stocks are robust to calculating abnormal returns as returns in excess of the returns of stocks held by mutual funds that quarter. Figure A1 and Table A1 below show cumulative average abnormal returns, and quarterly average abnormal returns, respectively, to *IBP* and *WBP* stocks.

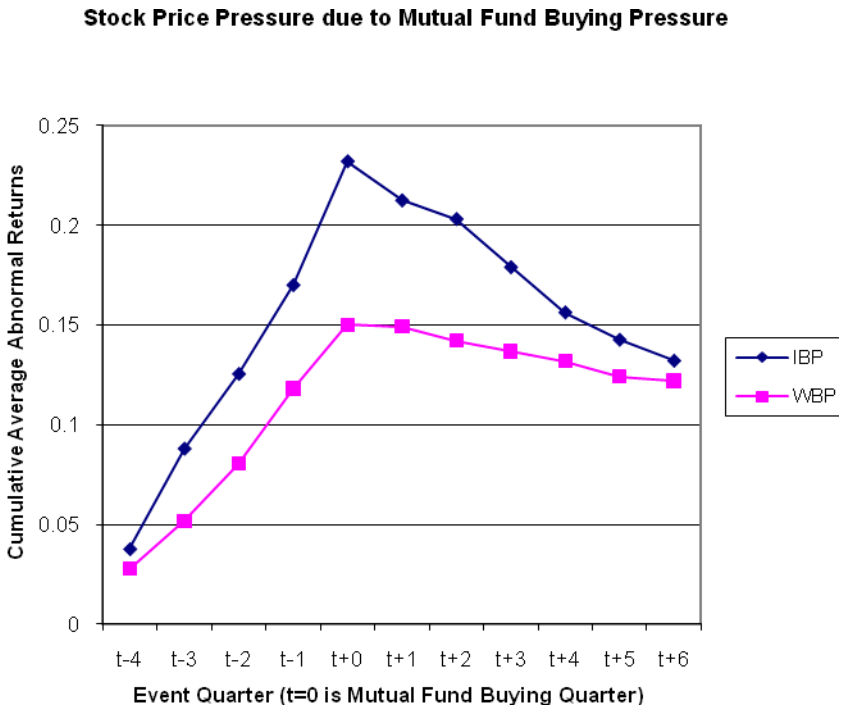

Figure A1. The figure shows cumulative average abnormal returns of stocks subject to buying pressure by mutual funds. Abnormal returns are returns in excess of the equal-weighted returns of all stocks held by mutual funds that quarter. We sum average quarterly abnormal returns to obtain the cumulative average abnormal returns. Inflow-driven Buying Pressure (*IBP*) stocks are those in the top decile of *Pressure*, but in the middle three deciles of *UPressure*, in quarter *t=0*. Widespread Buying Pressure (*WBP*) stocks are those in the top decile of *Upressure* in

[*] Citation format: [Khan, Mozaffar, Leonid Kogan and George Serafeim], [2011], Internet Appendix to "[Mutual fund trading pressure: Firm-level stock price impact and timing of SEOs]," Journal of Finance [vol #], [pages], http://www.afajof.org/IA/[year].asp.

quarter *t=0*. The *IBP* (*WBP*) sample consists of 2,515 (17,160) stock-quarters from 1990 through 2007. *Pressure* of stock *i* in quarter *t* is a stock-level measure of *flow-motivated* trading by all mutual funds *j*, and is calculated as

$$Pressure_{i,t} = \frac{\sum_j (\max(0, \Delta holding_{j,i,t}) \mid flow_{j,t} > 90^{th}\ percentile_t) - \sum_j (\max(0, -\Delta holding_{j,i,t}) \mid flow_{j,t} < 10^{th}\ percentile_t)}{Shares\ Outstanding_{i,t-1}}$$

UPressure is a measure of widespread trading by mutual funds that is not motivated by capital flows and is intended to capture information-motivated trading. The middle three deciles of *UPressure* capture stock quarters that are not subject to *widespread* net trading in any direction.

$$UPressure_{i,t} = \{ \sum_j \Delta holding_{j,i,t} \mid 10^{th}\ percentile_t \leq flow_{j,t} \leq 90^{th}\ percentile_t \} / Shares\ Outstanding_{i,t-1}$$

Table A1: Quarterly Average Abnormal Returns

The table shows mean quarterly abnormal returns from quarters *t-4* to *t+6* for stocks subject to mutual fund buying pressure in quarter *t=0*. Abnormal stock returns are returns in excess of the returns of all stocks held by mutual funds that quarter. Inflow-driven Buying Pressure (*IBP*) stocks are those in the top decile of *Pressure*, but in the middle three deciles of *UPressure*, in quarter *t=0*. Widespread Buying Pressure (*WBP*) stocks are those in the top decile of *UPressure* in quarter *t=0*. The *IBP* (*WBP*) sample consists of 2,515 (17,160) stock-quarters from 1990 through 2007. *Pressure* of stock *i* in quarter *t* is a stock-level measure of *flow-motivated* trading by all mutual funds *j*, and is calculated as

$$Pressure_{i,t} = \frac{\sum_j (\max(0, \Delta holding_{j,i,t}) \mid flow_{j,t} > 90^{th}\ percentile_t) - \sum_j (\max(0, -\Delta holding_{j,i,t}) \mid flow_{j,t} < 10^{th}\ percentile_t)}{Shares\ Outstanding_{i,t-1}}$$

UPressure is a measure of widespread trading by mutual funds that is not motivated by capital flows and is intended to capture information-motivated trading. The middle three deciles of *UPressure* capture stock quarters that are not subject to *widespread* net trading in any direction.

$$UPressure_{i,t} = \{ \sum_j \Delta holding_{j,i,t} \mid 10^{th}\ percentile_t \leq flow_{j,t} \leq 90^{th}\ percentile_t \} / Shares\ Outstanding_{i,t-1}$$

Mean abnormal returns are calculated each quarter for the portfolio of *IBP* stocks and *WBP* stocks, and the time series of portfolio abnormal returns are used for statistical inference to control for cross-sectional correlation. *** (**) [*] represents one-tailed statistical significance at less than 1% (5%) [10%].

Quarter	*IBP Stocks*	*WBP Stocks*
t-4	3.76% ***	2.78% ***

t-3	5.04% ***	2.39% ***
t-2	3.75% ***	2.88% ***
t-1	4.46% ***	3.79% ***
t=0	6.21% ***	3.18% ***
t+1	-1.96% ***	-0.10%
t+2	-0.93%	-0.69% **
t+3	-2.42% ***	-0.55% *
t+4	-2.27% ***	-0.50%
t+5	-1.37% *	-0.76% **
t+6	-1.05%	-0.23%
[t+1, t+6]	-10.00% ***	-2.82% **

(2) Our return-matched tests are intended to address the possibility of a non-linear relation between prior year stock returns on the one hand, and SEOs, insider sales and M&A on the other. We address the possibility of a non-linear relation in another way, by using dummies for the first nine return deciles, labeled *ret10* to *ret90*. For the top return decile, we use percentile dummies labeled *ret91* to *ret99*. Hence, we simultaneously control for *ret10, …, ret90, ret91, ….., ret99* in the main regressions. The *ret100* percentile dummy is omitted from the regression and therefore is the reference group.

In Table A2, the probability of an SEO is 50.5% higher (p-value<0.01) in the four quarters following *IBP*. The probability of an SEO is significantly increasing with past returns, as the coefficient is increasing in the past return dummies (coefficient is higher for *ret80* than for *ret70*, which is higher than for *ret60* and so on). The coefficient of each return dummy is negative, indicating that the probability of an SEO is lower when the past return is lower than *ret100*. In addition, the past return percentiles *ret90* to *ret99* are insignificant, indicating that once a firm is in the top return decile, heterogeneity in past returns within this decile does not affect the probability of an SEO. The insignificance of the percentile dummies could also reflect the smaller samples within each percentile.

In Table A3, insider sales are 7.2% higher in the four quarters following IBP (p-value<0.01). In Table A4, the probability of a stock-based acquisition is 26.8% higher (p-value<0.01).

Table A2: SEO logit with nonlinear controls for past returns. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-4.649 ***
IBP	**0.409** ***

ret10	-2.978 ***
ret20	-2.561 ***
ret30	-2.403 ***
ret40	-2.083 ***
ret50	-2.069 ***
ret60	-1.861 ***
ret70	-1.616 ***
ret80	-1.330 **
ret90	-0.909
ret91	-0.705
ret92	-0.780
ret93	-0.564
ret94	-0.464
ret95	-0.434
ret96	-0.346
ret97	-0.198
ret98	-0.280
ret99	-0.130
ROA_{t-4}	-0.978 ***
$Cash_{t-4}$	0.664 ***
$Size_{t-4}$	0.185 ***
BTM_{t-4}	-0.595 ***
$Leverage_{t-4}$	0.494 ***
$DivYield_{t-4}$	-14.856 ***
$Volat_{t-4}$	17.390 ***
$\Delta Volat_{t,t-4}$	6.055 ***
AssetGr	0.364 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	11.7%

Table A3: Insider Sales regression with nonlinear controls for past returns. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	0.365 ***
IBP	**0.029 *** **
$Size_{t-4}$	0.007 ***
$InsidSale_{t-4}$	0.170 ***

ret10	-0.222 ***
ret20	-0.197 ***
ret30	-0.174 ***
ret40	-0.149 ***
ret50	-0.136 ***
ret60	-0.122 ***
ret70	-0.105 ***
ret80	-0.097 ***
ret90	-0.078 ***
ret91	-0.060 ***
ret92	-0.069 ***
ret93	-0.059 ***
ret94	-0.048 ***
ret95	-0.050 ***
ret96	-0.050 ***
ret97	-0.031 **
ret98	-0.040 ***
ret99	-0.004
$Volat_{t-4}$	-0.324 ***
$\Delta Volat_{t,t-4}$	-1.030 ***
BTM1	0.101 ***
BTM2	0.104 ***
BTM3	0.093 ***
BTM4	0.083 ***
BTM5	0.072 ***
BTM6	0.059 ***
BTM7	0.044 ***
BTM8	0.027 ***
BTM9	0.025 ***
InsiderHoldings	0.376 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	9.3%

Table A4: M&A logit with nonlinear controls for past returns. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-3.586 ***

IBP	**0.237** ***
ret10	-1.724 ***
ret20	-1.663 ***
ret30	-1.577 ***
ret40	-1.550 ***
ret50	-1.381 ***
ret60	-1.411 ***
ret70	-1.296 ***
ret80	-1.179 ***
ret90	-1.109 ***
ret91	-1.011 **
ret92	-1.070 **
ret93	-1.087 **
ret94	-1.026 **
ret95	-0.639
ret96	-0.799 *
ret97	-0.998 **
ret98	-0.835 ***
ret99	-0.568
$Size_{t-4}$	0.173 ***
BTM_{t-4}	-0.775 ***
ROA_{t-4}	-0.051
$Cash_{t-4}$	0.371 ***
$DivYield_{t-4}$	-6.495 ***
$Volat_{t-4}$	4.887 ***
$\Delta Volat_{t,t-4}$	2.303
AssetGr	0.427 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	7.4%

(3) Our hypotheses contrast *IBP* stocks with all stocks that are not overvalued. All stocks that are not overvalued include *WBP* stocks, and therefore we do not separately control for a *WBP* indicator in our main tests. *WBP* stocks are subject to widespread mutual fund buying pressure, which potentially reflects favorable information about these firms and their investment opportunities. Thus, it is quite likely that *WBP* is positively correlated with future SEOs and acquisitions. Such correlation may arise due to the relatively favorable investment opportunities of *WBP* firms (Table III and Figure 1 of the paper suggest that *WBP* stocks are not overvalued

since there is no return reversion after *WBP*). As an extension of our benchmark specification, we include an indicator variable for *WBP*. We use this indicator to absorb some of the unexplained variation in the dependent variable across the sample of non-*IBP* stocks.

The results are tabulated below. All results are robust. In Table A5, the probability of an SEO is 58.6% higher (*p*-value<0.01) in the four quarters following *IBP*. In Table A6, insider sales are 7.5% higher (*p*-value<0.01) in the four quarters following *IBP*. In Table A7, the probability of a stock-based acquisition is 26.9% higher (*p*-value<0.01) in the four quarters following *IBP*.

Table A5: SEO logit with control for *WBP* indicator. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-6.069 ***
IBP	**0.461 *** **
WBP	0.294 ***
ROA_{t-4}	-0.267
$Cash_{t-4}$	0.642 ***
1Yr Return	0.482 ***
$Size_{t-4}$	0.164 ***
BTM_{t-4}	-0.523 ***
$Leverage_{t-4}$	0.574 ***
$DivYield_{t-4}$	-14.064 ***
$Volat_{t-4}$	14.897 ***
$\Delta Volat_{t,t-4}$	-0.590
AssetGr	0.398 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	9.5%

Table A6: Insider sales regression with control for *WBP* indicator. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	0.247 ***
IBP	**0.030 *** **
WBP	0.012 ***
$Size_{t-4}$	0.008 ***
$InsiderSale_{t-4}$	0.169 ***
1yr Return	0.062 ***
$Volat_{t-4}$	-0.902 ***

$\Delta Volat_{t,t-4}$	-1.682 ***
BTM1	0.093 ***
BTM2	0.098 ***
BTM3	0.087 ***
BTM4	0.077 ***
BTM5	0.068 ***
BTM6	0.055 ***
BTM7	0.042 ***
BTM8	0.026 ***
BTM9	0.025 ***
InsiderHolding	0.377 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	8.8%

Table A7: M&A logit with control for *WBP* indicator. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-4.876 ***
IBP	**0.238 *** **
WBP	0.366 ***
1yr Return	0.251 ***
$Size_{t-4}$	0.161 ***
BTM_{t-4}	-0.740 ***
ROA_{t-4}	-0.001
$Cash_{t-4}$	0.306 ***
$DivYield_{t-4}$	-5.190 **
$Volat_{t-4}$	3.382 **
$\Delta Volat_{t,t-4}$	-0.396
AssetGr	0.412 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	7.4%

(4) We use both newly initiated holdings and expansions of existing holdings by high inflow funds to identify *IBP* stocks. An argument for price pressure associated with investment constraints applies more naturally to the funds' existing holdings as opposed to the newly

initiated positions. We therefore modify the *Pressure* definition to sum increases in holdings by mutual funds in the top flow decile only if these increases are expansions of previously held positions, and not new initiations. Results are robust. Specifically, *IBP* stocks have cumulative market-adjusted returns of -7.84% (p-value<1%) over the six quarters following buying pressure. In addition, the probability of an SEO is 50% higher (p-value<0.01), insider sales are 5.4% higher (p-value<0.01) and the probability of an acquisition is 22% higher (p-value<0.01), in the four quarters following buying pressure.

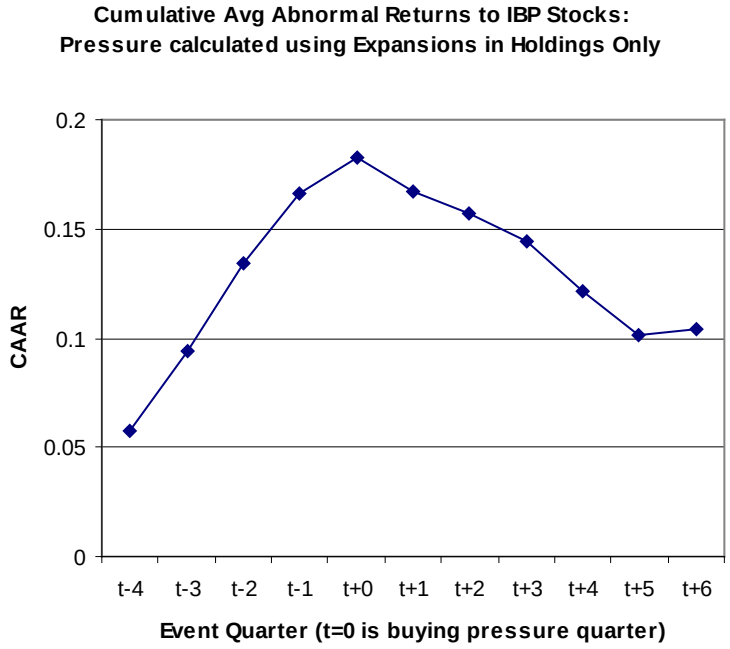

Fig. A2: The figure depicts cumulative average abnormal returns to *IBP* stocks when *Pressure* is calculated using only expansions in existing holdings by high-inflow mutual funds.

Table A8: SEO Logit when *Pressure* is calculated using expansions only. *** denotes one-tailed significance at less than 1%.

Variable	Estimate
Intercept	-6.074 ***
IBP	**0.404** ***
ROA_{t-4}	-0.090
$Cash_{t-4}$	0.697 ***
1 year Return	0.482 ***
$Size_{t-4}$	0.178 ***
BTM_{t-4}	-0.533 ***
$Leverage_{t-4}$	0.560 ***
Dividend yield$_{t-4}$	-15.290 ***

Volatility$_{t-4}$	14.784 ***
Δvolatility$_{t,t-4}$	-0.567
Asset growth	0.424 ***
Time f.e.	Yes
Industry f.e.	Yes
Adj R-sq	9.3%
N	313,750

Table A9: Insider sale regression when *Pressure* is calculated using expansions only. *** denotes one-tailed significance at less than 1%.

Variable	Estimate
Intercept	0.247 ***
IBP	**0.022** ***
Size$_{t-4}$	0.008 ***
Insider trading$_{t-4}$	0.170 ***
1 year Return	0.062 ***
Volatility$_{t-4}$	-0.892 ***
Δvolatility$_{t,t-4}$	-1.670 ***
BTM1	0.095 ***
BTM2	0.099 ***
BTM3	0.089 ***
BTM4	0.079 ***
BTM5	0.069 ***
BTM6	0.056 ***
BTM7	0.043 ***
BTM8	0.026 ***
BTM9	0.025 ***
Insider holding	0.373 ***
Time f.e.	Yes
Industry f.e.	Yes
R-square	8.82%
N	211,227

Table A10: M&A Logit when *Pressure* is calculated using expansions only. *** (**) [*] denotes one-tailed significance at less than 1% (5%) [10%].

Variable	Estimate
Intercept	-4.891 ***
IBP	**0.201** ***
1 year Return	0.255 ***
Size$_{t-4}$	0.175 ***

BTM_{t-4}	-0.748 ***
ROA_{t-4}	0.265
$Cash_{t-4}$	0.377 ***
Dividend yield$_{t-4}$	-6.216 **
Volatility$_{t-4}$	3.042 *
$\Delta volatility_{t,t-4}$	-0.258
Asset growth	0.439 ***
Time f.e.	Yes
Industry f.e.	Yes
Adj R-sq	7.2%
N	313,750

(5) We identify *IBP* firms as those in the top decile of *Pressure* but in the middle three deciles of *UPressure*. Our objective in intersecting with the middle deciles of *UPressure* is to isolate stocks that are not being widely traded by all other mutual funds. Although symmetry considerations may dictate using the middle quintile of *UPressure*, we expand our sample of *IBP* stocks by including three middle deciles. As a robustness check, we replicate our key regressions while intersecting the top decile of *Pressure* with either the middle two or the middle four *UPressure* deciles. In both cases we find slightly stronger results. For the case of the middle two deciles of *UPressure*, we identify 1,523 *IBP* stock-quarters from 1990 to 2007, with cumulative abnormal returns of -12.84% (p-value<0.05) over the six quarters following buying pressure. Furthermore, the probability of an SEO is 63% higher (p-value<0.01), insider sales are 6.9% higher (p-value<0.01) and the probability of an acquisition is 30% higher (p-value<0.05), in the four quarters following buying pressure. For the case of the middle four deciles of *UPressure*, we identify 3,384 *IBP* stock-quarters from 1990 to 2007, with cumulative abnormal returns of -7.9% (p-value<0.01) over the six quarters following buying pressure. Furthermore, the probability of an SEO is 59% higher (p-value<0.01), insider sales are 7.5% higher (p-value<0.01) and the probability of an acquisition is 28% higher (p-value<0.01), in the four quarters following buying pressure.

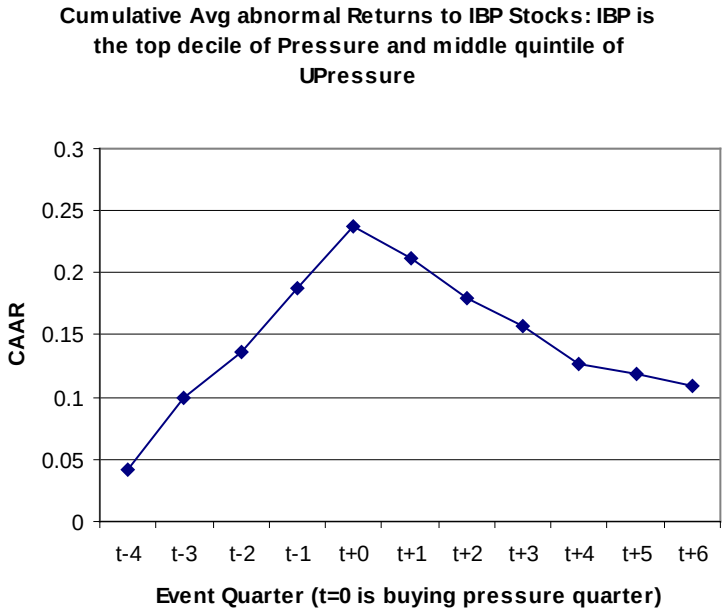

Fig. A3: The figure shows cumulative average abnormal returns to *IBP* stocks when *IBP* is defined as membership in the top decile of *Pressure* and middle quintile of *UPressure*.

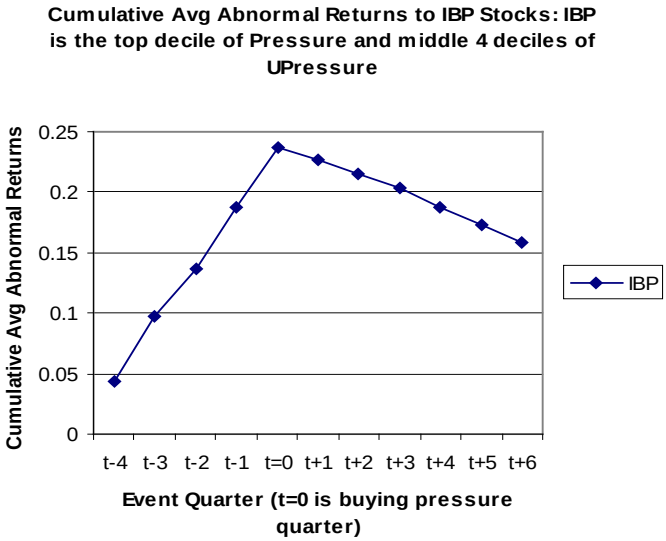

Fig. A4: The figure shows cumulative average abnormal returns to *IBP* stocks when *IBP* is defined as membership in the top decile of *Pressure* and middle four deciles of *UPressure*.

Table A11: SEO Logit when *IBP* stocks are in the top *Pressure* decile and middle 2 or middle 4 *UPressure* deciles.

Variable	Coefficient	
	Middle 2	*Middle 4*
Intercept	-6.069 ***	-6.086 ***
IBP	0.491 ***	0.466 ***
ROA_{t-4}	-0.068	-0.132
$Cash_{t-4}$	0.696 ***	0.687 ***
1 year Return	0.482 ***	0.482 ***
$Size_{t-4}$	0.179 ***	0.176 ***
BTM_{t-4}	-0.536 ***	-0.530 ***
$Leverage_{t-4}$	0.557 ***	0.568 ***
$Dividend\ yield_{t-4}$	-15.412 ***	-15.072 ***
$Volatility_{t-4}$	14.702 ***	14.636 ***
$\Delta volatility_{[t,t-4]}$	-0.576	-0.665
Asset growth	0.425 ***	0.419 ***
Time f.e.	Yes	Yes
Industry f.e.	Yes	Yes
Adj R-sq	9.3%	9.4%
N	313,750	313,750

Table A12: Insider Sales when *IBP* stocks are in the top *Pressure* decile and middle 2 or middle 4 *UPressure* deciles.

Variable	Coefficient	
	Middle 2	*Middle 4*
Intercept	0.247 ***	0.247 ***
IBP	**0.027** ***	**0.030** ***
$Size_{t-4}$	0.009 ***	0.008 ***
$Insider\ trading_{t-4}$	0.170 ***	0.170 ***
1 year Return	0.062 ***	0.062 ***
$Volatility_{t-4}$	-0.898 ***	-0.905 ***
$\Delta volatility_{[t,t-4]}$	-1.673 ***	-1.676 ***
BTM1	0.095 ***	0.094 ***
BTM2	0.099 ***	0.099 ***
BTM3	0.089 ***	0.088 ***
BTM4	0.079 ***	0.078 ***
BTM5	0.069 ***	0.069 ***
BTM6	0.056 ***	0.056 ***

BTM7	0.043 ***	0.042 ***
BTM8	0.026 ***	0.026 ***
BTM9	0.025 ***	0.025 ***
Insider holding	0.373 ***	0.374 ***
Time f.e.	Yes	Yes
Industry f.e.	Yes	Yes
R-square	8.82%	8.83%
N	211,227	211,227

Table A13: M&A Logit when *IBP* stocks are in the top *Pressure* decile and middle 2 or middle 4 *UPressure* deciles.

Variable	Coefficient	
	Middle 2	*Middle 4*
Intercept	-4.889 ***	-4.895 ***
IBP	**0.281** **	0.247 ***
1 year Return	0.254 ***	0.254 ***
$Size_{t-4}$	0.176 ***	0.174 ***
BTM_{t-4}	-0.750 ***	-0.747 ***
ROA_{t-4}	0.280	0.243
$Cash_{t-4}$	0.377 ***	0.370 ***
Dividend yield$_{t-4}$	-6.237 **	-6.138 **
$Volatility_{t-4}$	3.020 *	2.955 *
$\Delta volatility_{[t,t-4]}$	-0.254	-0.319
Asset growth	0.439 ***	0.436 ***
Time f.e.	Yes	Yes
Industry f.e.	Yes	Yes
Adj R-sq	7.2%	7.2%
N	313,750	313,750

(6) Our use of the max function in eqn. (2) of the paper is to facilitate comparison with the prior published literature. Empirically, the max function does not appear to make a difference in identifying *IBP* firms. We modify the *Pressure* definition by removing the max function and making it directly comparable to the *UPressure* definition. In particular, we define it as:

$$Pressure_{i,t} = \{ \sum_{j} \Delta holding_{j,i,t} \mid flow_{j,t} > 90^{th}\ percentile_t \} / Shares\ Outstanding_{i,t-1}$$

Results are tabulated below, but briefly, all results are robust. In Figure A5, cumulative average abnormal returns are -9.1% (p-value<0.01) in the six quarters following *IBP*. In Table A14, the

probability of an SEO is 48.1% higher (p-value<0.01) in the four quarters following *IBP*. In Table A15, insider sales are 6.5% higher (p-value<0.01) in the four quarters following *IBP*. In Table A16, the probability of a stock-based acquisition is 25.6% higher (p-value<0.01) in the four quarters following *IBP*.

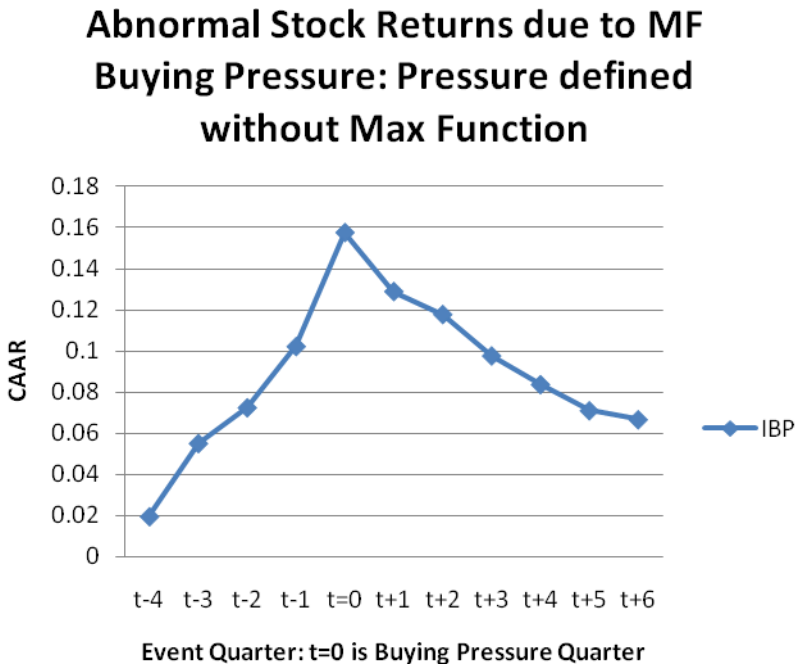

Figure A5: Abnormal stock price performance of *IBP* stocks when *Pressure* definition excludes max function.

Table A14: SEO logit when *IBP* is based on *Pressure* definition with no max function. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-6.086 ***
IBP	**0.426** ***
ROA_{t-4}	-0.132
$Cash_{t-4}$	0.687 ***
1Yr Return	0.482 ***
$Size_{t-4}$	0.176 ***
BTM_{t-4}	-0.530 ***
$Leverage_{t-4}$	0.568 ***
$DivYield_{t-4}$	-15.072 ***
$Volat_{t-4}$	14.636 ***
$\Delta Volat_{t,t-4}$	-0.665
AssetGr	0.419 ***

Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	9.3%

Table A15: Insider sale regression when *IBP* is based on *Pressure* definition with no max function. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	0.247 ***
IBP	**0.026** ***
$Size_{t-4}$	0.008 ***
$InsiderSale_{t-4}$	0.170 ***
1yr Return	0.062 ***
$Volat_{t-4}$	-0.905 ***
$\Delta Volat_{t,t-4}$	-1.676 ***
BTM1	0.094 ***
BTM2	0.099 ***
BTM3	0.088 ***
BTM4	0.078 ***
BTM5	0.069 ***
BTM6	0.056 ***
BTM7	0.042 ***
BTM8	0.026 ***
BTM9	0.025 ***
InsiderHolding	0.374 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	8.8%

Table A16: M&A logit when *IBP* is based on *Pressure* definition with no max function. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-4.895 ***
IBP	**0.224** ***
1yr Return	0.254 ***
$Size_{t-4}$	0.174 ***
BTM_{t-4}	-0.747 ***
ROA_{t-4}	0.243
$Cash_{t-4}$	0.370 ***

$DivYield_{t-4}$	-6.138 **
$Volat_{t-4}$	2.955 *
$\Delta Volat_{t,t-4}$	-0.319
AssetGr	0.436 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	7.2%

(7) The 313,750 total observations in Tables IV, V and VI of the paper include both stocks traded and not traded by mutual funds. Results tabulated below are robust if we conduct our tests using only those stocks traded by mutual funds. The probability of an SEO is 28.5% higher (*p*-value<0.01) in Table A17, insider sales are 4.1% higher (*p*-value<0.01) in Table A18 and the probability of a stock-based acquisition is 17.8% higher (*p*-value<0.01) in Table A19, in the four quarters following *IBP*.

Table A17: SEO logit on sample of stocks traded by mutual funds. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-4.475 ***
IBP	**0.251** ***
ROA_{t-4}	-1.998 ***
$Cash_{t-4}$	0.258 *
1Yr Return	0.479 ***
$Size_{t-4}$	-0.156 ***
BTM_{t-4}	-0.236 ***
$Leverage_{t-4}$	1.334 ***
$DivYield_{t-4}$	-15.580 **
$Volat_{t-4}$	8.520 ***
$\Delta Volat_{t,t-4}$	0.290
AssetGr	0.169 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	11.2%

Table A18: Insider sale regression on sample of stocks traded by mutual funds. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	0.328 ***

IBP	**0.016** ***
$Size_{t-4}$	-0.002
$InsiderSale_{t-4}$	0.171 ***
1yr Return	0.068 ***
$Volat_{t-4}$	-1.439 ***
$\Delta Volat_{t,t-4}$	-2.409 ***
BTM1	0.090 ***
BTM2	0.089 ***
BTM3	0.085 ***
BTM4	0.074 ***
BTM5	0.063 ***
BTM6	0.052 ***
BTM7	0.042 ***
BTM8	0.032 ***
BTM9	0.029 ***
InsiderHolding	0.597 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	9.7%

Table A19: M&A logit on sample of stocks traded by mutual funds. *** (**) denotes one-tailed significance at less than 1% (5%).

Variable	**Estimate**
Intercept	-5.038 ***
IBP	**0.187** ***
1yr Return	0.254 ***
$Size_{t-4}$	0.141 ***
BTM_{t-4}	-0.702 ***
ROA_{t-4}	-0.543
$Cash_{t-4}$	0.150
$DivYield_{t-4}$	-6.573 **
$Volat_{t-4}$	8.241 ***
$\Delta Volat_{t,t-4}$	2.984 *
AssetGr	0.447 ***
Time f.e.	Yes
Industry f.e.	Yes
AdjRsq	9.4%

(8) As an alternative to the Fama-MacBeth means and standard errors of abnormal returns reported in Panel A of Table III, we use a panel regression to calculate mean abnormal returns for each event quarter, with standard errors clustered by calendar quarter to control for cross-sectional correlation. We expect, and find, robust results given the evidence in Petersen (2009) that Fama-MacBeth is appropriate to correct for cross-sectional correlation. Panel regression results show *IBP* stocks have cumulative abnormal returns of -8.6% (*p*-value<0.01), over the six quarters following buying pressure. The table below corresponds to Table III, Panel A in the paper.

Table A20: Abnormal returns – panel means and time-clustered standard errors. *** (**) [*] denotes one-tailed significance at less than 1% (5%) [10%].

Quarter	*IBP* Stocks	*WBP* Stocks
t-4	2.21% **	2.55% ***
t-3	3.60% ***	1.72% ***
t-2	2.22% ***	3.11% ***
t-1	3.80% ***	1.74% ***
t=0	4.08% ***	2.33% ***
t+1	-2.13% ***	-1.06% **
t+2	-0.74%	-0.42%
t+3	-1.64% ***	-1.57% ***
t+4	-2.06% **	-0.19%
t+5	-1.11% *	-1.13% **
t+6	-0.86%	-0.28%
[t+1, t+6]	-8.56% ***	-4.65% ***

(9) One potential concern is that high-inflow funds hold stocks that are more like to have an SEO or acquisition. Hence, it is not just the stocks we identify as *IBP*, but rather, all stocks owned by high-inflow funds, that are more likely to have an SEO or acquisition. We view the evidence as inconsistent with this concern because our results are robust to matching on fund ownership. Specifically, for each *IBP* stock we pick a match using the same criteria as in the paper, but additionally requiring the match to be owned by the same set of high inflow funds that own the *IBP* stock. Results are similar to those currently in the paper, as tabulated below.

SEO Frequencies

SEO	*IBP*	*Ret-Size*	*BTM-Size*	*ROA-AssetGr*
0	0	7789	7261	7020
0	1	7743	7234	6980
1	0	110	129	96
1	1	156	156	136
p-value		<0.01	<0.05	<0.01

Mean Insider Sales

IBP	*Ret-Size*	*BTM-Size*	*InsiderSale*$_{t-1}$*-Size*
1	0.4649	0.4660	0.4602
0	0.4257	0.4375	0.4186
p-value	<0.01	<0.01	<0.01

M&A Frequencies

M&A	*IBP*	*Ret-Size*	*BTM-Size*	*ROA-AssetGr*
0	0	7682	7133	6855
0	1	7612	7110	6842
1	0	217	257	261
1	1	287	280	274
p-value		<0.01	0.14	0.28

(10) We have examined SEOs, insider sales and stock-based acquisitions in the four quarters after *IBP*, which allows managers four quarters to respond to the overvaluation. Since the choice of a four-quarter window is somewhat arbitrary, we shorten the managerial response window to two quarters following *IBP*. We find the probability of an SEO is 45% higher (*p*-value<0.01), insider sales are 6.9% higher (*p*-value<0.01) and the probability of an acquisition is 21% higher (*p*-value<0.05).

(11) We calculate *Pressure* using average lagged quarterly trading volume over the prior two quarters as the denominator, instead of scaling by shares outstanding as in the reported results. Results are robust, and show *IBP* stocks have cumulative abnormal returns of -8.2% (*p*-value<0.01) over the six quarters following buying pressure. Further, the probability of an SEO is 49% higher (*p*-value<0.01), insider sales are 7.1% higher (*p*-value<0.01) and the probability of an acquisition is 28% higher (*p*-value<0.05), in the four quarters following buying pressure.