Internet Appendix for

The Horizon of Investors' Information and Corporate Investment

(not intended for publication)

March 30, 2026

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1 Theory: Extensions

1.1 Endogenous Information Production

To endogenize the informativeness of investors' forecasts, we proceed as in Dessaint, Foucault, and Fresard (2024). That is, we assume that information about short-term and long-term cash-flows is produced by a security analyst. As in the baseline model, at date 1, the analyst receives signals s_{st} and s_{lt} about the short-term and the long-term cash-flows and issues short-term and long-term forecasts about the cash-flows. These forecasts are then used by investors to price the asset.

The key difference with the baseline model is that the analyst can improve the precision of his signals by exerting efforts. The analyst optimally chooses the level of his efforts and, ultimately, the informativeness of investor's forecasts is determined by these efforts. Most important for our purpose, as shown below, this feature does not change the investment equation (eq.(10)) that serves as a backbone for our tests.

The analysis below follows Dessaint, Foucault, and Fresard (2024) very closely. We therefore omit many details (in particular, the motivation of the modeling choices) for brevity.

We denote the analyst's short-term and long-term forecasts about θ_{st} and θ_{lt} by f_{st} and f_{lt}, respectively. The analyst's payoff, $W(\theta_{st}, \theta_{lt}, f_{lt}, f_{st})$, is inversely related to the weighted sum of her squared forecast errors,

$$W(\theta_{st}, \theta_{lt}, f_{st}, f_{lt}) = W_0 - \gamma(f_{st} - \theta_{st})^2 - (1-\gamma)(f_{lt} - \theta_{lt})^2, \tag{IA1}$$

where $W_0 > 0$ and $0 < \gamma < 1$. This payoff is realized at date 3 (see Figure I in the text), after the realizations of the short-term and the long-term cash-flows.

To produce her forecasts, the analyst relies on a "short-term signal," s_{st}, about the short-term cash-flow and a "long-term signal," s_{lt}, about the long-term term cash-flow. As in the baseline model, we assume that:

$$s_{st} = \theta_{st}(I_m) + \tau_{st}(z_{st})^{-\frac{1}{2}}\epsilon_{st}, \quad s_{lt} = \theta_{lt}(I_m) + \tau_{lt}(z_{lt})^{-\frac{1}{2}}\epsilon_{lt}. \tag{IA2}$$

In contrast to the baseline model, we assume that τ_j, the precision of the signal s_j, is determined by z_j, the level of effort that the analyst exerts to collect and process information relevant for predicting the cash-flow $j \in \{st, lt\}$. Specifically $\tau_j(z_j) = \frac{\psi_j z_j}{1-\psi_h z_j}$, and $z_j < \psi_j^{-1}$. Observe that $\tau_h(z_h)$ increases with z_h. Thus, by exerting effort (z_{st}) to collect short-term information, the analyst improves the precision of her signal about the short-term cash-flow. Similarly, by exerting effort (z_{lt}) to collect long-term information, the analyst improves the precision of her signal about the long-term cash-flow.

With this specification, we have

$$\mathsf{Var}(\theta_{st}(I_m)\,|s_{st}) = \sigma_{st}^2(1-\psi_{st}z_{st}), \quad \text{and} \quad \mathsf{Var}(\theta_{lt}(I_m)\,|s_{lt}) = \sigma_{lt}^2(1-\psi_{lt}z_{lt}). \tag{IA3}$$

Thus, each unit of effort to obtain information about the cash-flow at one horizon reduces prior uncertainty about this cash-flow by a constant fraction ψ_j. Thus, ψ_j measures the "informational return" of effort at horizon j.[1]

Exerting effort is costly. The analyst's total information processing cost is

$$C(z_{st}, z_{lt}) = az_{st}^2 + bz_{lt}^2. \tag{IA4}$$

For given forecasts $\{f_{st}, f_{lt}\}$, the analyst's expected payoff conditional on her information at date 1 is

$$\begin{aligned}\overline{W}(f_{st}, f_{lt}; s_{st}, s_{lt}) &\equiv \mathsf{E}(W(\theta_{st}, \theta_{lt}, f_{lt}, f_{st})\,|s_{st}, s_{lt}) \\ &= W_0 - \gamma\,\mathsf{E}((f_{st}-\theta_{st})^2\,|s_{st}, s_{lt}) - (1-\gamma)\,\mathsf{E}((f_{lt}-\theta_{lt})^2\,|s_{st}, s_{lt})\,.\end{aligned} \tag{IA5}$$

At date 1, the analyst chooses her forecasts $\{f_{st}^*, f_{lt}^*\}$ to maximize $\overline{W}(f_{st}, f_{lt}; s_{st}, s_{lt})$. Thus:

$$\begin{aligned}f_{st}^* &= \mathsf{E}(\theta_{st}(I_b) \mid \{s_{st}, s_{lt}\}) = (1-h)\beta I_b + R_{st}^2(s_{st} - (1-h)\beta I_b), \\ f_{lt}^* &= \mathsf{E}(\theta_{lt}(I_b) \mid \{s_{st}, s_{lt}\}) = h\beta I_b + R_{lt}^2(s_{lt} - h\beta I_b),\end{aligned} \tag{IA6}$$

where the second equalities follow from eq.(2) in the text. Thus, for given efforts (z_{st}, z_{lt}),

[1] Effort to reduce uncertainty about the cash-flow at one horizon does not affect the uncertainty about the cash-flows at other horizons because these efforts require distinct tasks (see Dessaint, Foucault, and Fresard (2024)).

the analyst's optimal forecasts and therefore investors' forecasts are exactly as in the baseline model.

The analyst chooses how much effort to exert to improve the precision of his signals before their realizations (as is standard in models of information acquisition). Substituting equation (IA6) into equation (IA5), we obtain that the analyst's expected payoff before observing the realization of his signals is

$$\mathsf{E}(\overline{W}(f_{st}^*, f_{lt}^*; s_{st}, s_{lt})) = W_0 - \gamma \,\mathsf{Var}(\theta_{st}\,|s_{st}) - (1-\gamma)\,\mathsf{Var}(\theta_{lt}\,|s_{lt})\,. \tag{IA7}$$

The analyst's *expected* payoff increases when her signals are more precise (i.e., $\mathsf{Var}(\theta_{st}\,|s_{st})$ and $\mathsf{Var}(\theta_{lt}\,|s_{lt})$ are smaller) because more precise signals reduce her average squared forecast errors.

The analyst chooses her effort levels z_{st}^* and z_{lt}^* at date 0 to maximize her ex-ante expected payoff net of the cost of effort, $J(z_{st}, z_{lt}) \equiv \mathsf{E}(\overline{W}(f_{st}^*, f_{lt}^*; s_{st}, s_{lt})) - C(z_{st}, z_{lt})$. Thus, z_{st}^* and z_{lt}^* solve

$$\max_{z_{st}\le\psi_{st}^{-1}, z_{lt}\le\psi_{lt}^{-1}} J(z_{st}, z_{lt}) = W_0 - \gamma\,\mathsf{Var}(\theta_{st}\,|s_{st}) - (1-\gamma)\,\mathsf{Var}(\theta_{lt}\,|s_{lt}) - C(z_{st}, z_{lt}). \tag{IA8}$$

In choosing effort levels, the analyst trades off the precision of her signals and the cost of effort. The following result is a special case of Proposition 1 in Dessaint, Foucault, and Fresard (2024)) (DFF2024).[2] Hence we omit its proof.

Proposition 1 *(DFF2024): If* $\frac{\gamma\Psi_{st}^2\sigma_{st}^2}{2} < a$ *and* $\frac{\gamma\Psi_{lt}^2\sigma_{lt}^2}{2} < b$ *then the analyst's optimal levels of effort in producing information at date* 0*,* z_{st}^* *and* z_{lt}^**, are given by*

$$z_{st}^* = \frac{\gamma\psi_{st}\sigma_{st}^2}{2a}, \quad z_{lt}^* = \frac{(1-\gamma)\psi_{lt}\sigma_{lt}^2}{2b}. \tag{IA9}$$

The conditions on a and b make sure that the marginal cost of information production are

[2] Dessaint, Foucault, and Fresard (2024) consider a more general specification in which $C(z_{st}, z_{lt}) = a \times z_{st}^2 + b \times z_{lt}^2 + c \times z_{st}z_{lt}$. For our purpose here, considering the case in which $c > 0$ does not change any conclusion while making the derivations less transparent. Thus, we simplify the exposition by setting $c = 0$.

large enough so that the analyst's efforts do not result in perfect signals ($z_j < \Psi_j^{-1}$).

The previous result shows that the analyst allocates more effort to produce short-term information when (i) the marginal cost, a, of doing so is smaller, (ii) the informational return on effort, ψ_{st} is larger, or (iii) prior uncertainty (σ^2_{st}) about the short-term cash flow is higher. The same properties hold for the effort allocated to the production of information about the long-term cash-flow.

In equilibrium, the efforts chosen by the analyst determine the precisions of his signals and therefore the informativeness of investors' forecasts. Indeed:

$$\begin{aligned} R^2_{st} &= \frac{\tau_{st}}{1+\tau_{st}} = \psi_{st} z^*_{st}, \\ R^2_{lt} &= \frac{\tau_{lt}}{1+\tau_{lt}} = \psi_{lt} z^*_{lt}. \end{aligned} \tag{IA10}$$

It is natural to assume that the variance of long-term cash-flows (σ^2_{lt}) increases and that the variance of short-term cash-flows (σ^2_{st}) decreases when the firm's investment project has a longer maturity. In this case, z^*_{st} decreases with h and z^*_{lt} increases with h (see eq.(IA9)). Thus, from eq.(IA10), the informativeness of investors' short term forecast (R^2_{st}) decreases with h and the informativeness of investors' long-term forecast (R^2_{lt}) increases with h, endogenously. This captures the intuition that agents adjust their efforts to the horizon of firms' projects.

Note however that, holding h constant, there are other sources of variations for R^2_{st} and R^2_{lt}, such as, for instance, shocks to the cost of producing short-term and long-term information, a and b. Dessaint, Foucault, and Fresard (2024) provide evidence that these costs vary over time and across firms.

Observe that, in the baseline model, R^2_{st} and R^2_{lt} affects the manager's investment choice only via their effects on investors' forecasts, $\mathsf{E}(\theta_{st}(I_b) \mid \{s_{st}, s_{lt}\})$ and $\mathsf{E}(\theta_{lt}(I_b) \mid \{s_{st}, s_{lt}\})$. As shown previously (see eq.(IA6)), the expression for these forecasts is unchanged when information production is endogenous. As a result, the investment equation (10) in the model holds when information production is endogenous. That is, following exactly the same steps as in the baseline case, we obtain:

$$I^*_m = \alpha_0 + \alpha_1 \times h + \alpha_2 R^2_{st} + \alpha_3 (R^2_{st} \times h) + \alpha_4 (R^2_{lt} \times h), \tag{IA11}$$

with $\alpha_0 = (\frac{(1-\omega)\beta}{(1+r)} - 1)c^{-1}$, $\alpha_1 = -\frac{(1-\omega)\beta r}{c(1+r)^2}$, $\alpha_2 = \frac{\beta\omega}{c(1+r)}$, $\alpha_3 = -\alpha_2$, and $\alpha_4 = \frac{\beta\omega}{c(1+r)^2}$.

Thus, the fact that R^2_{st} and R^2_{lt} are endogenous *does not change* the specification of this equation. It creates a problem for the estimation if there are sources of variations for R^2_{st} and R^2_{lt} that (i) are not controlled for in our tests (eq.(11)) and (ii) affect **both** R^2_{st} and R^2_{lt} **and** investment (the standard omitted variable problem). Our tests are specifically designed to address this problem. In particular, even if h affects R^2_{st} and R^2_{lt} (for reasons explained above), this effect is directly controlled for in our tests since h is a control variable. Thus, identification of the effects of R^2_{st} and R^2_{lt} on investment stems from other sources of variations for these variables. The model suggests for instance that this could be variations in the cost of producing short-term and long-term information (see eq.(IA10)). There might be other reasons as well not captured by the model. To the extent that these other factors do not directly affect investment, our tests are informative about the signs of the coefficients α_3 and α_4, which is our main focus.

1.2 Investment disclosure

In this section, we extend the baseline model by assuming that, at date 1, investors can observe the manager's investment choice with probability κ (see Section IV.D.3 in the text for interpretations of κ).

If disclosure occurs (with probability κ) then $I_b = I_m$ at date 1 since investors can observe the actual investment chosen by the manager. In this case, the expression for the stock price at date 1 is as given in eq.(5) in the text, except that $I_b = I_m$. That is, if there is disclosure:

$$p_1(s_{st}, s_{lt}; I_b) = \Delta(h,r)\beta I_m + \frac{R^2_{st}}{(1+r)}(s_{st} - (1-h)\beta I_m) + \frac{R^2_{lt}}{(1+r)^2}(s_{lt} - h\beta I_m), \quad \text{(IA12)}$$

If there is no disclosure (with probability $(1-\kappa)$), investment is not observed and the stock price at date 1 is given by in eq.(5). That is, as in the baseline case:

$$p_1(s_{st}, s_{lt}; I_b) = \Delta(h,r)\beta I_m + \frac{(1-h)}{(1+r)}R^2_{st}(s_{st} - (1-h)\beta I_m) + \frac{h}{(1+r)^2}R^2_{lt}(s_{lt} - h\beta I_m), \quad \text{(IA13)}$$

Combining these two cases, we deduce that the manager expects the stock price at date 0 to be:

$$\mathrm{E}(p_1^*(s_{st}, s_{lt}; I_b, h)) = \beta\kappa\Delta(h,r)I_m + \beta(1-\kappa)[\Delta(h,r)I_b + \gamma(R_{st}^2, R_{lt}^2, h)(I_m - I_b)], \quad \text{(IA14)}$$

where $\gamma(R_{st}^2, R_{lt}^2, h)$ is as defined in eq.(8).

As in the baseline case, the first order condition (FOC) of the manager's problem (eq.(6) in the text) pins down the unique equilibrium value for the investment of the firm. Writing this FOC using eq.(IA14) and simplifying, we obtain that I_m^* solves:

$$\beta((1-\kappa)\omega\gamma(R_{st}^2, R_{lt}^2, h) + (\kappa + (1-\omega)(1-\kappa))\Delta(h,r)) = 1 + C'(I_m^*). \quad \text{(IA15)}$$

As in the baseline case, one can check that $\beta > \hat{\beta}$ is a sufficient condition to guarantee that this equation has a strictly positive solution, $I_m^* > 0$. Proceeding as in the baseline case, we deduce that this solution is:

$$I_m^* = \alpha_0 + \alpha_1 \times h + \alpha_2 R_{st}^2 + \alpha_3(R_{st}^2 \times h) + \alpha_4(R_{lt}^2 \times h), \quad \text{(IA16)}$$

with $\alpha_0 = (\frac{\beta(\kappa+(1-\omega)(1-\kappa))}{(1+r)} - 1)c^{-1}$, $\alpha_1 = -\frac{\beta(\kappa+(1-\omega)(1-\kappa))r}{c(1+r)^2}$, $\alpha_2 = \frac{\beta(1-\kappa)\omega}{2c(1+r)}$, $\alpha_3 = -\alpha_2$, and $\alpha_4 = \frac{\beta(1-\kappa)\omega}{2c(1+r)^2}$. Thus, as explained in the text, we have that $\mid \frac{\partial\alpha_3}{\partial\kappa} \mid < 0$ and $\mid \frac{\partial\alpha_4}{\partial\kappa} \mid < 0$.

1.3 A stationary investment model

In the model, long-term signals cannot be used to forecast short-term cash flows. However, in reality, as time passes, long-term cash flows eventually become short-term. Thus, long-term signals about the long-term cash flows of a project should eventually become useful to forecast firms' total short-term cash flows. In this section, we extend the baseline model to account for this possibility and show that it does not change our implications (in particular eq.(10)). To do so, we consider a dynamic stationary version of the baseline model (as in Stein (1989)), with a new investment project at each date.

The stationary model is as follows. We assume that at each date t the manager can invest an amount I_{mt} in a new project. Each project is identical and last two periods as described in the baseline model. The new project implemented at date t generates a cash flow $(1-h)\beta I_{mt}$ at date $t+1$ and $h\beta I_{mt}$ at date $t+2$. The total cash flow of the firm at date $t+1$ is:

$$\theta_{t+1}(I_{mt}, I_{mt-1}) = \beta((1-h)I_{mt} + hI_{mt-1}) + \xi_{t+1}, \tag{IA17}$$

Thus, in contrast to the baseline model, the total cash flow at each date (e.g., $t+1$) has two components that depend on investment decisions: (i) the short-term cash flow of the project implemented at date t, $(1-h)\beta I_{mt}$ and (ii) the long-term component of the project implemented at date $t-1$, $h\beta I_{mt-1}$. As h increases, as in the baseline model, each new project takes more time to pay off. The third component ξ_{t+1} is a stochastic component generated by the assets in place and therefore independent from recent investment decisions. We assume that:

$$\xi_{t+1} = \eta_{t-1,t+1} + \eta_{t,t+1}, \tag{IA18}$$

with $\eta_{t+1-j,t+1} \sim N(A, \sigma^2_{\eta_j})$ for $j \in \{1,2\}$ and all dates t. Thus, investors' prior uncertainty about the cash flow at a given date is constant over time and equal to $Var(\xi_{t+1}) = \sigma^2_{\eta_1} + \sigma^2_{\eta_2}$. As in the baseline model, we normalize A to zero.

At each date t, investors receive two new public signals. The first signal is:

$$s_{t,t+1} = \beta(hI_{mt-1} + (1-h)I_{mt}) + \eta_{t,t+1} + (\tau_1)^{-1/2}\varepsilon_1, \tag{IA19}$$

while the second is:

$$s_{t,t+2} = h\beta I_{mt} + \eta_{t,t+2} + (\tau_2)^{-1/2}\varepsilon_2, \tag{IA20}$$

Thus, the first signal provides information about cash flow at date $t+1$ (the short-term cash flow) while the second provides information about the cash flow at date $t+2$ (the long-term cash flow). Importantly, at date t, investors can combine the signals $s_{t-1,t+1}$ and $s_{t,t+1}$ to forecast the firm's cash flow at date $t+1$, $\theta_{t+1}(I_{mt}, I_{mt-1})$. Indeed, the former signal conveys information about $\eta_{t-1,t+1}$ while the second conveys a signal about $\eta_{t,t+1}$, the two components of the cash flow, ξ_{t+1}, generated by assets in place at date $t+1$.

This specification of investors' signals captures the idea that investors gradually receive information about the cash flow at date $t+1$. They first receive information at date $t-1$ about $\eta_{t-1,t+1}$ (namely $s_{t-1,t+1}$) and then at date t about $\eta_{t,t+1}$ (namely $s_{t,t+1}$). Thus, one can interpret $s_{t-1,t+1}$ as a signal about long-term cash flows (in 2 periods).[3] As time passes, this signal becomes informative about the short-term cash flow (next period) because investors do not forget their signals. One consequence is that investors' posterior uncertainty (after receiving information) about the cash flow at a given date declines as the date at which the cash flow is paid off gets closer.

As in the baseline model, we assume that $\varepsilon_j \sim N(0, \sigma^2_{\eta_j})$ and we denote $R^2_j \equiv \frac{\tau_j}{1+\tau_j}$. Thus, R^2_2 plays the role of R^2_{lt} the informativeness the long-term signal in the baseline model. And R^2_1 plays the role of R^2_{st} in the baseline model. In this extension, we use a different way to index the informativeness of short-term and long-term signals to simplify the exposition.

We denote by $\mathcal{I}_{mt} = \{I_{mt}, I_{mt+1}, ...I_{mt+\tau}, ...\}$, the investment policy of the firm from date t onward. For a given investment policy, the fundamental value of the firm at date t (after distribution of its cash flow at this date, net of the investment cost $C(I_{mt})$) is:

$$V(\mathcal{I}_{mt}) = \sum_{\tau=t+1}^{\tau=\infty} \frac{\theta_\tau(I_{m\tau-1}, I_{m\tau-2}) - I_{m\tau} - C(I_{m\tau})}{(1+r)^{\tau-t}} \tag{IA21}$$

We assume that the stock market is opened at each date and we denote by p_t the stock

[3]This signal provides information about $\eta_{t-1,t+1}$ but not about $\eta_{t,t+1}$. The idea is that information about the former starts being available at $t-1$ while information about the latter is available only starting at date t.

price at date t after distribution of its cash flow, net of the total cost of investment, namely $I_{mt} + C(I_{mt})$. As investors are risk neutral:

$$p_t(\Omega_t; \mathcal{I}_{bt}) = \mathsf{E}(V(\mathcal{I}_{bt}) \,|\Omega_t)\,, \tag{IA22}$$

where $\mathcal{I}_{bt} = \{I_{bt}, I_{bt+1}, ...I_{bt+\tau}, ...\}$ denotes investors' beliefs about the investment policy of the firm from date t onward and $\Omega_t = \{I_{m,t-1}, s_{t,t+1}, s_{t,t+2}, s_{t-1,t+1}\}$ is the information available to investors at date t relevant for forming their expectations about the firm's cash flows at date $t+1$, $t+2$, etc...[4] Note that we include the long-term signal received by investors at date $t-1$ (i.e., $s_{t-1,t+1}$) because, as explained previously, this signal is useful to forecast the total cash flow at date $t+1$, $\theta_{t+1}(I_{mt}, I_{mt-1})$. We also include I_{mt-1} in Ω_t. That is, we assume that by date t, the amount invested at date $t-1$ is disclosed to market participants. However, as explained at the end of this section, this assumption is not important. Results are identical if I_{mt-1} is never disclosed (or disclosed after date t).

As in the baseline model, we assume that the investment of the firm at date t is not observed at date t. Thus, investors form beliefs about this investment and future investment decisions. We denote investors' belief at date t about the future investment policy of the firm by $\mathcal{I}_{bt} = \{I_{bt}, I_{bt+1}, ...,\}$. In equilibrium, as in the baseline model, investors' beliefs are rational and coincide with the actual investment policy ($I_{bt} = I^*_{mt}$). However, for solving the model, we need to allow for the possibility that the manager secretly deviates from the policy expected by investors, as in the baseline model.

Given investors' signals and their beliefs about the managers' investment policy, we can compute investors' expectations at date t of the cash flows at dates $t+1$, $t+2$, etc. Consider the cash flow at date t+1 first. Using eq.(IA17), our assumptions on the distribution of the cash flows and investors' signals, and the fact that $\Omega_t = \{I_{m,t-1}, s_{t,t+1}, s_{t,t+2}, s_{t-1,t+1}\}$, we obtain:

$$\begin{aligned} \mathsf{E}(\theta_{t+1}(I_{bt}, I_{mt-1}) \,|\Omega_t) &= \beta((1-h)I_{bt} + hI_{mt-1}) \\ +R_1^2(s_{t,t+1} - \beta((1-h)I_{bt} + hI_{mt-1})) &+ R_2^2(s_{t-1,t+1} - h\beta I_{mt-1}). \end{aligned} \tag{IA23}$$

[4]To simplify notations, we omit in Ω_t the history of past signals (e.g, $s_{t-3,t-1}$) and investment that is not useful to form forecasts about the future cash flows from date t+1 onward.

This equation is the key difference between the baseline model and this extension. Indeed, it shows that investors' expectation at date t of the total cash flow in the short term (date $t+1$) depends both on their short-term signal, $s_{t,t+1}$, and their long-term signal, $s_{t-1,t+1}$ (and the informativeness of these signals, R_1^2 and R_2^2). Indeed, as explained previously, long-term signals are useful to forecast both long-term and short-term cash flows.

Similarly, we can compute investors' expectation of the total cash flow at date $t+2$ and obtain

$$\mathsf{E}(\theta_{t+2}(I_{bt+1}, I_{bt})\,|\Omega_t) = \beta((1-h)I_{bt+1} + hI_{bt}) + R_2^2(s_{t,t+2} - \beta I_{bt}). \tag{IA24}$$

At date t, investors use their the long-term signal, $s_{t,t+2}$, to forecast the cash flow of the firm at date $t+2$.

Finally, at date t, investors have no signals about the cash flows from dates $t+3$ onward. Thus, their expectations of these cash flows given their belief about the manager's investment policy is:

$$\mathsf{E}(\theta_\tau(I_{b\tau+1}, I_{b\tau})\,|\Omega_t) = \beta((1-h)I_{b\tau-1} + hI_{b\tau-2}) \quad for \quad \tau \geq t+3. \tag{IA25}$$

Using eq.(IA22), eq.(IA23), eq.(IA24) and eq.(IA25), we obtain (after some algebra) that the stock price at date t is:

$$\begin{aligned} p_t(\Omega_t;\mathcal{I}_{bt}) = \beta\Delta(h,r)I_{b,t} + \frac{R_1^2}{1+r}(s_{t,t+1} - \beta((1-h)I_{bt} + hI_{mt-1})) + \frac{R_2^2}{(1+r)^2}(s_{t,t+2} - h\beta I_{bt}) \\ + \frac{h\beta I_{mt-1} + R_2^2(s_{t-1,t+1} - h\beta I_{mt-1}))}{1+r} \\ + \frac{(1-h)\beta I_{bt+1}}{(1+r)^2} + \sum_{\tau=t+3}^{t=\infty} \frac{\beta((1-h)I_{b\tau-1} + hI_{b\tau-2})}{(1+r)^{\tau-t}} - \sum_{\tau=t+1}^{t=\infty} \frac{I_{b\tau} + C(I_{b\tau})}{(1+r)^{\tau-t}}, \end{aligned} \tag{IA26}$$

where as in the baseline model $\Delta(h,r) = \frac{(1-h)}{1+r} + \frac{h}{(1+r)^2}$. The expression for the stock price at date t is a natural extension of eq.(5) in the baseline case considered in the text. In fact, when one sets the investments at all dates other than t to zero, one obtains the same expression for the stock price as in the baseline case (eq.(5)).

At date t, the manager chooses her investment I_{mt} to maximize:

$$I_{mt}^* \in \text{Argmax}_{I_m} \quad \omega\, \mathsf{E}(p_t(\Omega_t;\mathcal{I}_{bt}) \mid \Omega_{mt}) + (1-\omega)\, \mathsf{E}(V(\mathcal{I}_{mt}) \mid \Omega_{mt}) + M_t - I_{mt} - C(I_{mt}), \quad \text{(IA27)}$$

where $M_t = \theta_t(I_{mt-1}, I_{mt-2})$ is the cash-holdings of the firm at date t (its total cash flow at this date) and Ω_{mt} is the manager's information at date t. We assume that the manager observes all investors' signals until date $t-1$ but not the signals received at date t (as in the baseline model). When the manager makes her investment decision at date t, she cares about the impact of this policy on her expected stock price at date t when $\omega > 0$. The fact that the stock price is realized at the same date as the investment should not be taken literally. This is just to simplify the exposition. One can, at the cost of more cluttered notations, consider the case in which the stock market is opened at interim dates between two investment decisions (as in the baseline model).[5]

Remember that we have defined $\hat{\beta} \equiv \text{Max}\{(1+r)^2(R_{lt}^2)^{-1}), (1+r)(R_{st}^2)^{-1})\}$. We obtain the following result (the proof is at the end of this section).

Proposition A.1 . *If $\beta > \hat{\beta}$, the optimal investment of the manager at each date is:*

$$I_m^* = \alpha_0 + \alpha_1 \times h + \alpha_2 R_1^2 + \alpha_3 (R_2^2 \times h) + \alpha_4 (R_2^2 \times h), \quad \text{(IA28)}$$

with $\alpha_0 = (\frac{(1-\omega)\beta}{(1+r)} - 1)c^{-1}$, $\alpha_1 = -\frac{(1-\omega)\beta r}{c(1+r)^2}$, $\alpha_2 = \frac{\beta\omega}{c(1+r)}$, $\alpha_3 = -\alpha_2$, *and* $\alpha_4 = \frac{\beta\omega}{c(1+r)^2}$.

Thus, in this extension, the optimal investment of the firm is given by exactly the same equation as in the baseline version of the model (remember that here we denote R_{st}^2 (R_{lt}^2) by R_1^2 (R_2^2)).[6] Thus, our testable hypotheses are still valid in this case, even though (i) trading can take place at each date and (ii) investors' long-term signals are eventually used by investors' to forecast short-term *total* cash flows (that is, even though long-term signals eventually become short-term signals). Not surprisingly, given that the environment is stationary (the projects and the information structure at each date are identical), the investment policy is

[5] This is the reason why we assume that the realization of the stock price is not yet observed when the manager makes her investment decision at date t

[6] As in the baseline case, the condition $\beta > \hat{\beta}$ is sufficient to obtain an interior equilibrium, that is, an equilibrium in which $I_{mt}^* > 0$.

stationary. It is straightforward to allow for variations in the informativeness of short-term and long-term signals over time for different projects. In this case, R_1^2 and R_2^2 would be indexed by t.

It could seem surprising that the optimal investment policy is the same despite the fact that the total short-term cash flows are different in the baseline model and this extension (as explained before, in this extension, the total short term cash flow reflects both the short-term cash flow of the most recent investment and the long-term cash flow of the investment two periods ago while in the baseline model, they only reflect the former). The reason is that the manager's investment decision at date t (I_{mt}) only affects the short-term component of the total cash flow realized at date $t+1$, not the long-term component coming from past investment decisions (which cannot be changed since they have been made). As in the baseline model, what matters for the manager's investment decision at date t is the speed at which the stock price reflects the value created by her investment decision at date t via its effect on the short-term component of the cash flow at date $t+1$ and the cash flow at date t+2.

Remark. In deriving the manager's optimal investment policy, we have assumed that investors at date t observe the manager's investment decisions up to date $t-1$. However, this assumption is not necessary. For instance, if investors never observe I_{mt-1}, results are identical. The only difference is that in eq.(IA29) in the proof of the previous proposition, one must replace $\frac{h\beta I_{mt-1}+R_2^2(s_{t-1,t+1}-\beta I_{mt-1}))}{1+r}$ by $\frac{h\beta I_{bt-1}+R_2^2(s_{t-1,t+1}-\beta I_{bt-1}))}{1+r}$. However, this does not affect the manager's first order condition at date t (eq.(IA31)) since at this date, the manager chooses I_{mt}, not I_{mt-1}.

Proof of Proposition A.1. To prove the proposition, suppose that investors' beliefs about the manager's investment policy from date t onward is $\mathcal{I}_{bt} = \{I_{bt}, I_{bt+1}, ...\}$ and suppose that the manager's investment policy from date $t+1$ onward is $\mathcal{I}_{mt+1} = \{I_{mt+1}, I_{mt+2}, ...\}$. In this case, if she invests I_{mt} at date t, the manager expects the stock price at date t to be (using eq.(IA26)):

$$E(p_t(\Omega_t;\mathcal{I}_{bt}) \mid \Omega_{mt}) = \beta\Delta(h,r)I_{bt} + \beta\frac{(1-h)R_1^2}{1+r}(I_{mt}-I_{bt}) + \beta\frac{hR_2^2}{(1+r)^2}(I_{mt}-I_{bt})) + \frac{h\beta I_{mt-1} + R_2^2(s_{t-1,t+1} - h\beta I_{mt-1})}{1+r} + + \frac{(1-h)\beta I_{bt+1}}{(1+r)^2} + \sum_{\tau=t+3}^{t=\infty}\frac{\beta((1-h)I_{b\tau-1} + hI_{b\tau-2})}{(1+r)^{\tau-t}} - \sum_{\tau=t+1}^{t=\infty}\frac{(I_{bt} + C(I_{b\tau}))}{(1+r)^{\tau-t}}. \quad \text{(IA29)}$$

Moreover, given the manager's information at date t, we have:

$$\mathsf{E}(V(\mathcal{I}_{mt}) \mid \Omega_{mt}) = \beta\Delta(h,r)I_{mt} + \frac{h\beta I_{mt-1} + R_2^2(s_{t-1,t+1} - h\beta I_{mt-1})}{1+r} + \frac{(1-h)\beta I_{mt+1}}{(1+r)^2} + \sum_{\tau=t+3}^{t=\infty}\frac{\beta((1-h)I_{m\tau-1} + hI_{m\tau-2})}{(1+r)^{\tau-t}} - \sum_{\tau=t+1}^{t=\infty}\frac{I_{m\tau} + C(I_{m\tau})}{(1+r)^{\tau-t}}. \quad \text{(IA30)}$$

Thus, the manager's expectation of the fundamental value of the firm given her investment policy is equal to the value of the stock price when investors' beliefs about the manager's investment policy coincide with this policy.

Therefore, if the optimal investment at date t is strictly positive (an interior solution), the first order condition of the manager's problem (eq.(IA27)) imposes:

$$\beta(\omega\frac{\partial\,\mathsf{E}(p_t(\Omega_t;\mathcal{I}_{bt}) \mid \Omega_{mt})}{\partial I_{mt}} + (1-\omega)\frac{\partial\,\mathsf{E}(V(\mathcal{I}_{mt}) \mid \Omega_{mt}))}{\partial I_{mt}}) - (1 + C'(I^*_{mt})) = \beta(\omega\gamma(R_1^2, R_2^2, h) + (1-\omega)\Delta(h,r)) - (1 + C'(I^*_{mt})) = 0, \quad \text{(IA31)}$$

where $\gamma(R_1^2, R_2^2, h) = (\frac{(1-h)}{(1+r)}R_1^2 + \frac{h}{(1+r)^2}R_2^2)$. This is exactly the same condition as that in the text (see eq.(9)). This equation has a strictly positive solution if $\beta > (\hat{\beta}$ and, in this case, I^*_{mt} is given by eq.(10) in the text (replacing R^2_{st} by R^2_1 and R^2_{lt} by R^2_2 to account for the change in notations). We deduce that for any date, the optimal investment policy is given by eq.(IA28) since the manager's investment problem is stationary. This solution is independent from investors' beliefs. As it is derived for arbitrary investors' beliefs, it follows that the only rational expectations equilibrium is such that $I_{bt} = I^*_{mt}$ at each date.

2 Persistence of the Horizon of Firms' Business Plans

This appendix shows that the horizon of firms' business plans is highly persistent, supporting the idea that a significant part of it reflects permanent structural characteristics (e.g., the useful life of assets or the length of production cycles) determined by the nature of firms' business (its industry). Table IA.1 shows that firm fixed effects explains more than 70% of the total variation in business plan horizons. Table IA.2 presents the one- and three-year transition matrices across quintiles of firms' business plan horizon, and confirms the high persistence of business plan horizons.

3 Project Horizon by FF49 industries

Table IA.3 shows the top-15 industries with longest business plan horizon, and the top-15 ones with shortest business plan horizon. Mean business plan horizon by Fama-French 49 industry is calculated from a sample of 13,908 observations of business plan horizon mentioned in the text of the SEC filings of 3,925 firms between 1994 and 2015.

4 Analysts' Forecasts Informativeness (R^2) by year

Table IA.4 shows the evolution of short and long-term aggregate R^2 (R^2_{st} and R^2_{lt}) by year. The Pearson correlation between the two time series is 0.34.

5 Economic Magnitude

To assess the economic magnitude of our main results, we normalize all variables by their within-firm standard deviation in our preferred specification (except *Project Horizon* which is constant within-firm), and report the results in Table IA.5. We find b_1=.054 and b_2=-.040. Thus for firms that usually invest in say 5-year horizon projects, these estimates imply that they increase (decrease) investment relative to firms investing in *shorter* projects after R^2_{lt} (R^2_{st}) increases. The economic magnitude of this change depends on the average project horizon we use as a benchmark. Relative to firms investing in *4-year* projects, the change in investment represents 5.4% (4.0%) of within-firm standard deviation in investment. Relative to firms investing in *3-year* projects, it represents $(5-3) \times 5.4\% = 10.8\%$ ($(5-3) \times 4.0\% = 8.0\%$). Relative to firms investing in *2-year* projects, it represents $(5-2) \times 5.4\% = 16.2\%$ ($(5-2) \times 4.0\% = 12.0\%$), and relative to firms investing in *1-year* projects, it represents $(5-1) \times 5.4\% = 21.6\%$ ($(5-1) \times 4.0\% = 16.0\%$).

6 Robustness Checks

6.1 Robustness to alternative measures of R^2

This appendix shows that the results reported in Table III (Section IV.B) are robust to altering the definitions of R^2_{lt} and R^2_{st}.

In Table IA.6, we measure R^2 with different year lags before we observe firm investment. We find similar results to our baseline results even when measuring R^2_{lt} with a 6-year lag.

In Table IA.7, we consider different definitions of R^2_{lt} and R^2_{st} by varying the horizon windows used to define short-term and long-term (we consider 5 different definitions in addition to the baseline case considered in the paper). We find that our main finding is not sensitive to different definitions of short- and long-term R^2. The only exception is when we define the short-term with horizons between 1 and 47 months.

6.2 Robustness to alternative measures of horizon

This appendix shows that the results reported in Table III (Section IV.B) are robust to using other approaches for measuring the horizon of firms' projects.

First, we note that projects are more likely to pay-off in the long-term in industries with long equity duration, high growth, and slow asset depreciation. In Table IA.8, we thus use as alternative proxies for project horizon (i) the equity duration measure of Goncalves (2021) averaged by SIC2 (Column 1), (ii) that of Weber (2018) also averaged by SIC2 (Column 2), (iii) the average sales growth by SIC2 (Column 3), and (iv) the inverse of the average depreciation rate by SIC2 (Column 4).[7] We find results that are similar to our baseline

[7] We are grateful to Andrei Goncalves and Michael Weber for sharing the duration data

results for each alternative proxy for projects' horizon.

Second, we alter our baseline specification by creating binary variables identifying "longer horizon" projects (from longer than 3.5 years to longer than 4.75 years) to assess whether the investment of firms with "longer" projects responds differently to variation in R^2_{lt} and R^2_{st}. Table IA.9 largely confirm our baseline results. Firms with "longer" horizon (i.e., larger h) increase investment when R^2_{lt} increases, and decrease investment when R^2_{st} increases.

Third, we create binary groups of firms with "shorter" or "longer" horizons for their projects using various cutoffs for long horizon (more than 41 months, more than 44 etc.) and define R^2_{lt} and R^2_{st} with horizons that *exactly matches* the cut-offs to form firms' groups according to the horizon of their projects. Due to data availability, we consider cut-offs for Project Horizon of 3.5, 3.75, 4.00, and 4.25 years. Table IA.10 presents the results, and confirm our conclusions. The interactions between "longer horizon" and R^2_{lt} are all positive and significant, whereas the interactions between "longer horizon" and R^2_{st} is only significant in the first column (cut-off of 3.5 years). The results only disappear when we define "short-term" investors' signals as those about horizons ranging between 1 and 44 months (or more).

Finally, we implement a portfolio approach. We "residualize" firm-year investment with respect to the controls and fixed effects, and allocate firms into two portfolios based on whether their Project Horizon is above or below one of three cut-offs (3.5, 3.75, and 4.00 years). We then average (residualized) investment by year for each portfolio and regress that investment on R^2_{lt} and R^2_{st}, computed based on the same cut-offs (e.g., R^2_{st} is based on horizon 1 month to 41 months with an horizon cut-off of 3.5 years). Figures IA.1, IA.2, and IA.3 present the results, and indicate that main conclusions continue to hold. In the longer horizon portfolios, investment is positively related to R^2_{lt} and negatively to R^2_{st}. In contrast, investment is negatively related to R^2_{lt} and positively related to R^2_{st} in the shorter horizon portfolios.

6.3 Robustness to alternative measures of investment

This appendix shows that the results reported in Table III (Section IV.B) are robust to using other definitions of investment than capex. Specifically, we consider:

- R&D expenditures scaled by the stock of intangible capital.
- The sum of capex and R&D over lagged assets (as in Chen et al. (2007)).
- A binary variable that identifies whether a firm announces a business expansion (or several) in a given year (from Capital IQ's Key Developments). This data is only available since 2002.
- The number (in log) of business expansion announcements (in logs) in a given year (from Capital IQ's Key Developments). This data is only available since 2002.
- The growth of (net) property, plant, and equipment.
- The number of employees (in logs).
- SG&A expenses over lagged assets.
- Acquisition expenses over lagged assets.
- A binary variable that identifies whether a firm announces an acquisition (or several) in a given year (from Capital IQ's Key Developments). This data is only available since 2002.

Table IA.11 presents the results. Except for SG&A and acquisitions, our conclusions are qualitatively robust to alternative (and broader) definitions of investment. The estimated coefficients on the interaction between Project Horizon and R^2_{lt} are positive with all measures, and significant in six out of seven specifications. The estimated coefficients on the interaction between Project Horizon and R^2_{st} are negative with all measures, and significant in five out of seven specifications.

6.4 Bootstrapped standard errors

To ensure the robustness of our inference, we perform a bootstrapped analysis. Indeed, both R^2_{st} and R^2_{lt} are "statistics", and as such, could lead to biased inference if their sampling distribution is not properly accounted for. Following Chen, Hribar, and Melessa (2023), we perform a two-step (cluster) pairs bootstrap. The procedure is as follows:

1. We randomly draw with replacement a bootstrapped sample from our original sample of 49.9 millions of analyst-day-horizon $R^2_{a,t,h}$. We impose analyst-level clusters to preserve the structure of our original sample (given that sampling errors are likely to be specific to each analyst).

2. From this bootstrapped sample, we average $R^2_{a,t,h}$ across analysts for each year and horizon, and then average by horizon (12-23 months and 24-59 months) to obtain R^2_{st} and R^2_{lt}.

3. We randomly draw with replacement a bootstrapped sample from our original firm-year Compustat sample of 66'601 observations. Given that our main specification is estimated within firms, we impose firm-level clusters to preserve the original source of variation used in our tests.

4. We estimate our baseline specification (eq.(11)) on this bootstrapped sample, using the bootstrapped values of R^2_{st} and R^2_{lt} obtained in step (2) above. We store the coefficient estimates.

5. We repeat this procedure 1'000 times and use the standard deviation of the collected coefficient estimates as the bootstrapped standard errors.

Table IA.12 presents the results, and indicates that our conclusions are robust.

7 Multi-division firms sample descriptive statistics

Table IA.13 presents descriptive statistics for the main variables employed in Table IV (Section IV.C).

8 Robustness to division Capex normalization

This appendix checks that the results reported in Table IV (Section IV.C) continue to hold when we do not normalize division capex by depreciation and amortization. Results are in Table IA.14. In column 1, we normalize by the sum of capex across all divisions (item

CAPXS in Compustat Segment). In column 2, we normalize by the firm-level capex reported in Annual Compustat (item CAPX in Annual Compustat). In column 3, we normalize for the lagged of total assets by division (item IAS in Compustat Segment). In column 4, we do not normalize and use the log of division capex.

9 Confounding Factors and Alternative Channels

9.1 Controlling for macro-economic changes

Table IA.15 shows that our main results are unchanged when controlling for variations in macro-economic variables that might coincide with changes in R^2_{st} and/or R^2_{lt}. For that, we augment our baseline specification (eq.(11)) with interaction terms between Project Horizon and variables measuring US treasury bond yields at various horizons (Columns 1 and 4), real GDP growth, unemployment rate and inflation rate (Columns 2 and 4), the VIX and text-based measures of uncertainty from news data by topic (Economic Policy, Monetary Policy, Fiscal Policy, Trade Policy, Taxes, Government Spending, Health care, National Security, Entitlement programs, Regulation, Financial Regulation, and Sovereign debt) (Columns 3 and 4) from Baker, Bloom and Davis (See https://www.policyuncertainty.com/).

9.2 Controlling for firm-level uncertainty

Table IA.16 shows that our main conclusions are robust when controlling for variations in firm-level measures of uncertainty that might coincide with changes in R^2_{st} and/or R^2_{lt}. For that, we augment our baseline specification (eq.(11)) with interaction terms between Project Horizon and variables measuring uncertainty. Following Alfaro, Bloom, and Lin (2024), we use firms' realized stock return volatility (from CRSP) and their forward-365-day option-implied volatility (from OptionMetrics), as provided in their replication package.[8] We also consider the dispersion of analysts' forecasts to measure firms' uncertainty. In column (2), while positive, the coefficient on the interaction between Project Horizon and R^2_{lt} is positive but insignificant (with a t-statistic of 1.60).

[8]See `https://www.policyuncertainty.com/firm_uncertainty.html`.

9.3 Controlling for asset redeployability

Table IA.17 shows that our main results are unchanged when controlling for firms' asset redeployability that might coincide with the horizon of their business plan. For that, we augment our baseline specification (eq.(11)) with interaction terms between Project Horizon and three variables measuring asset redeployability. Following Kim and Kung (2017), we use Redeployability, Redeployability(R^2), and Redeployability(EW), defined at the SIC2-level based on the usability of assets within and across industries.

9.4 Controlling for trends by industry and geography

This appendix verifies that our main results are not due to unobserved trends by industry and geography. To this end, in Table IA.18, we interact the (fiscal) year fixed-effects with Fama-French 17 industry fixed effects (Columns 1 and 4), state of headquarters' location fixed effects (Columns 2 and 4), and state of incorporation fixed effects (Columns 3 and 4).

9.5 Is there any pre-trend?

To study the dynamic of capital reallocation after R^2 changes in year $t-1$ and check that there is no pre-trend between firms with long and short projects' horizon, we interact Project Horizon with leads and lags of annual variation in aggregate R^2_{st} (Column 1), and R^2_{lt} (Column 2). The specification we use controls for R^2 changes in *other* years, as when estimating the *dynamic* of the average effect of a reform in a generalized difference-in-differences setting with multiple reforms (e.g., Bertrand and Mullainathan (2003) Table 3, Column 5, or Dessaint, Golubov, and Volpin (2017), Table 3, Columns 2, among many others). Table IA.19 reveals no evidence of any pre-trend.

9.6 Improved incentives channel vs. cost of capital channel

This appendix further investigates whether our main results could be explained by a "cost of capital" channel, and assesses its prevalence compared to that of the "improved incentives" channel. In the paper, we augment our baseline specification (eq.(11)) with variables capturing aggregate variation in debt and equity yields for short and long-horizons, interacted with *Project Horizon*. We conclude that changes in the term-structure of expected returns for debt and equity do *not* seem to affect investment across firms with projects with short and long horizons.

To further rule out the cost of capital channel, we investigate whether R^2_{lt} and R^2_{st} vary with firms' access to external funds. They should according to the cost of capital channel. We use data on financial constraints assembled by Hoberg and Maksimovic (2014) from the text of firms' annual reports (available at `https://faculty.marshall.usc.edu/Gerard-Hoberg/MaxDataSite/index.html`). We focus on three variables, "delaycon", "equitydelaycon", and "debtdelaycon", that capture whether firms indicate that they are at risk of delaying their investments due difficulty in accessing liquidity in general, or more specifically from the equity or debt markets. Larger values of these variables indicate tighter financial constraints. We estimate a specification similar to our baseline investment equation (eq.(11)), replacing investment by firms' financial constraints proxies. Table IA.20 presents the results, that are overall inconclusive. Focusing on within-firm variation, "delaycon" and "equitydelaycon" appear insensitive to variation in R^2_{lt} and R^2_{st} for all firms. In columns (10) to (12), consistent with the cost of capital channel, we detect a weak decrease in "debtdelaycon" for firms with longer horizon projects when the informativeness of investors' long-term signals improves (i.e., when R^2_{lt} increases). However, the overall picture emerging from Table IA.20 does not support the cost of capital channel.

9.7 Improved incentives channel vs. learning channel

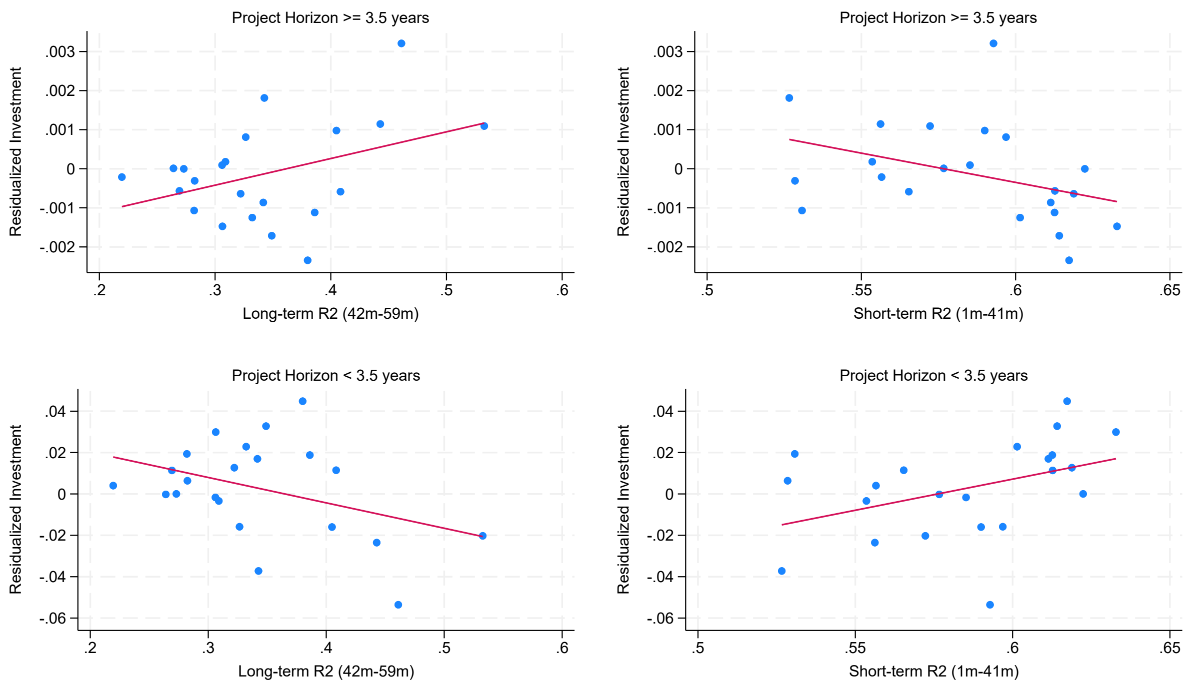
This appendix investigates whether our results could stem from the learning channel. To isolate this channel, in the paper, we control for the investment-to-Q sensitivity (one interpretation for this sensitivity being that managers are learning from the stock price of their firm) and most importantly for how this sensitivity varies with *Project Horizon*, with R^2_{st} and R^2_{lt}, and with the interaction between *Project Horizon* and both R^2_{st} and R^2_{lt}. If the change in investment that we document arises solely because managers learn from Q but differently so when *Project Horizon*, R^2_{st} and/or R^2_{lt} changes, then these additional controls should absorb all variation in investment related to the learning channel, and our main results should disappear. This is not the case.

In Table IA.21 we further include the average industry stock price (Q) and its interactions with project horizon, R^2_{lt}, and R^2_{st} to assess the possibility that firms can learn from the stock prices of their industry peers (e.g., Foucault and Fresard (2014). Our main conclusion continues to hold, although its statistical significance decreases slightly. The interaction between Project Horizon and R^2_{lt} remains positive and significant, whereas the interaction between Project horizon and R^2_{st} remains negative and significant.

10 Aggregate trends in projects' horizon

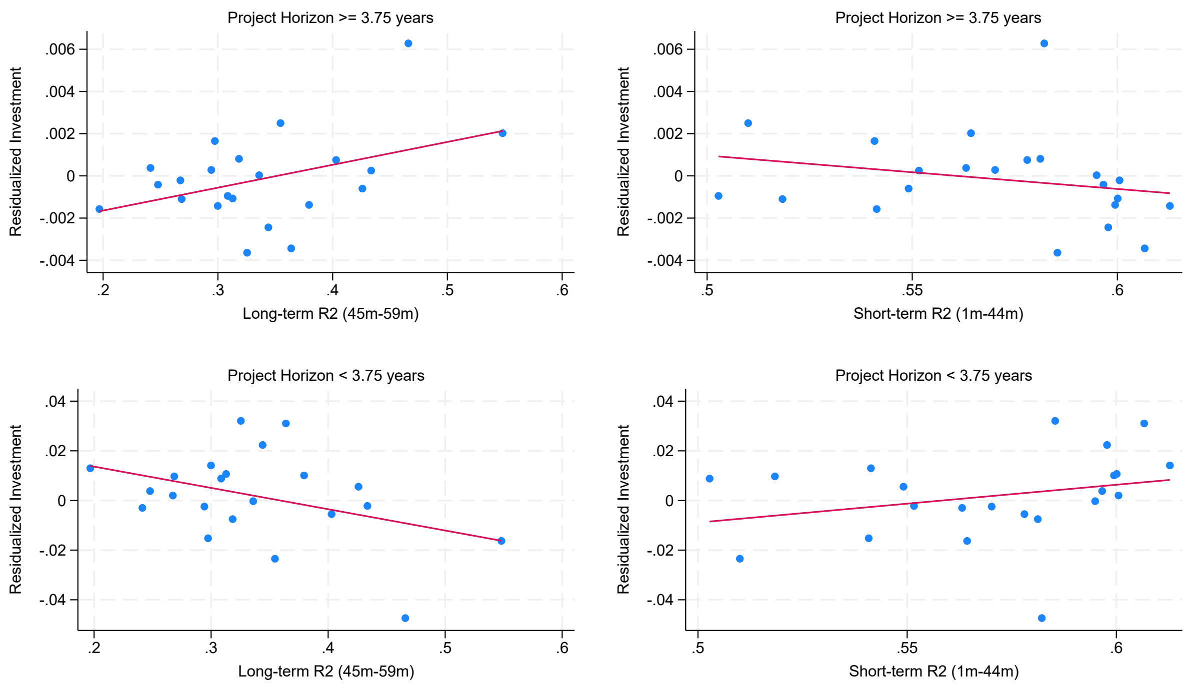
Table IA.22 focuses on M&A projects. It shows that both the horizon at which managers expect deal synergies to materialize (Panel A) and the horizon at which they expect the deal to be EPS-accretive (Panel B) have been declining over time. Data about the expected horizon of synergy realization, and EPS accretion is from Thomson SDC. Table IA.23 provides more general evidence for the allocation of tangible capital across industries with different project horizon. We regress $Capex_{i,t}$ on *Project Horizon* interacted with a year counter variable (*Year Trend*) that increments by one every year. The negative coefficient reported in Table IA.23 indicates that there has been relatively more investment over time in industries with short horizon projects compared to industries with long horizon projects.

Figure IA 1: Portfolio Approach (horizon cut-off: 3.5 years)



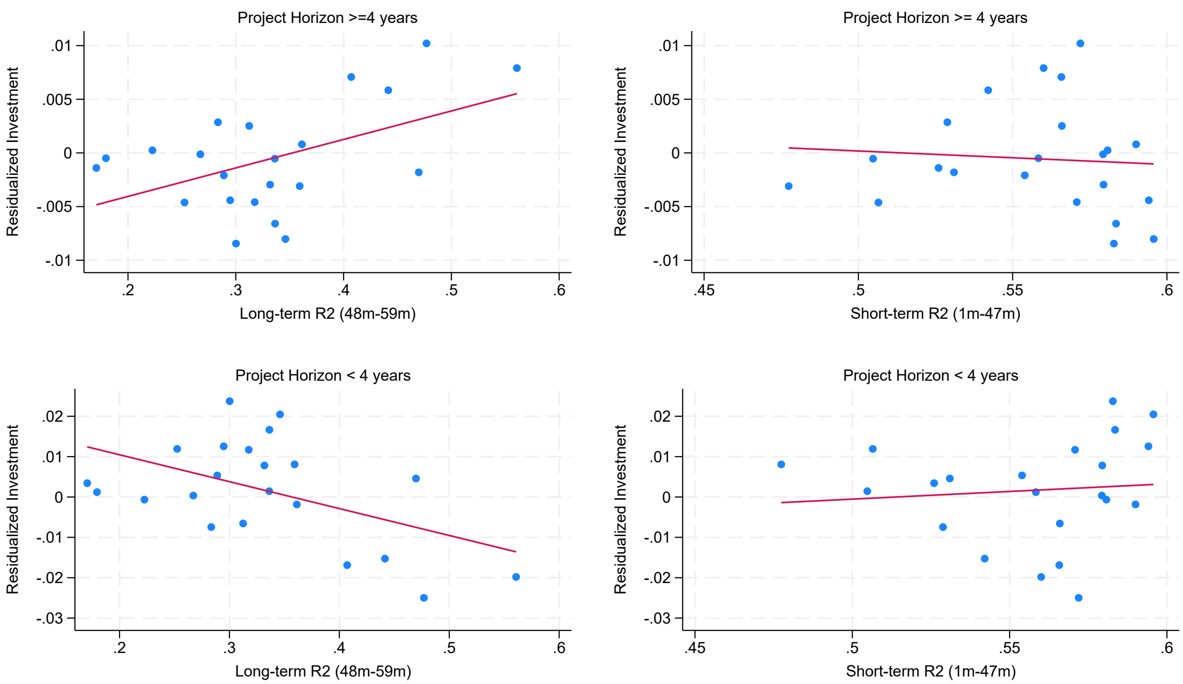
This figure shows the relationship between annual (residualized) investment and R^2_{lt} or R^2_{st} across two portfolios based on whether firms' project horizon is longer (or equal) to 3.5 years. We obtain "residualized" investment for each firm-year as the residual of a regression of investment on our baseline controls and fixed effects (see eq.(11) of the paper). We then average the (residualized) investment for each portfolio and year. For every year, R^2_{lt} and R^2_{st} are defined based on the same horizon cut-off (3.5 years), that is, R^2_{lt} is based on horizons 42 to 59 months and R^2_{st} is based on horizons 1 to 41 months.

Figure IA 2: Portfolio Approach (horizon cut-off: 3.75 years)



This figure shows the relationship between annual (residualized) investment and R^2_{lt} or R^2_{st} across two portfolios based on whether firms' project horizon is longer (or equal) to 3.75 years. We obtain "residualized" investment for each firm-year as the residual of a regression of investment on our baseline controls and fixed effects (see eq.(11) of the paper). We then average the (residualized) investment for each portfolio and year. For every year, R^2_{lt} and R^2_{st} are defined based on the same horizon cut-off (3.75 years), that is, R^2_{lt} is based on horizons 45 to 59 months and R^2_{st} is based on horizons 1 to 44 months.

Figure IA 3: Portfolio Approach (horizon cut-off: 4.00 years)



This figure shows the relationship between annual (residualized) investment and R^2_{lt} or R^2_{st} across two portfolios based on whether firms' project horizon is longer (or equal) to 4 years. We obtain "residualized" investment for each firm-year as the residual of a regression of investment on our baseline controls and fixed effects (see eq.(11) of the paper). We then average the (residualized) investment for each portfolio and year. For every year, R^2_{lt} and R^2_{st} are defined based on the same horizon cut-off (4 years), that is, R^2_{lt} is based on horizons 48 to 59 months and R^2_{st} is based on horizons 1 to 47 months.

Table IA 1: The Persistence of Business Plan Horizon: Fixed Effects

This table reports regressions of business plan horizon on a constant with fixed effects. Column (1) includes firm fixed effects, and Column (2) includes firm and year fixed effects. The sample consists of 13,908 observations of business plan horizon mentioned in the text of SEC filings of 3,925 firms between 1994 and 2020. Out 3,925 firms with available business plan horizon, 2,335 only report in one year, and are thus excluded from the regressions.

Dep. variable:	Business plan horizon (h)	
	(1)	(2)
Constant	4.559***	4.559***
	(297.77)	(299.90)
Firm FE	Yes	Yes
Year FE fixed effects	No	Yes
R^2	0.763	0.768
Adj. R^2	0.678	0.683
N	6,001	6,001

Table IA 2: Business Plan Horizon: Transition Matrices

This table reports transition matrices of firms business plan horizon quintiles. Quintiles are computed within year based on the distribution of business plan horizon across firms. Panel A reports one-year transitions and Panel B reports three-year transitions. Each entry is the row percentage of firms moving from a given quintile in year $t-1$ (or $t-3$) to a quintile in year t. The sample consists of 13,908 observations of business plan horizon mentioned in the text of SEC filings of 3,925 firms between 1994 and 2020.

Panel A: 1-year transitions

Lagged quintile (q_{t-1})	Q1	Q2	Q3	Q4	Q5
Q1	56.37	33.88	5.70	1.80	2.25
Q2	35.42	41.07	15.52	4.08	3.92
Q3	8.03	11.50	28.98	33.23	18.27
Q4	1.73	5.06	31.36	37.72	24.13
Q5	1.45	3.73	14.70	20.96	59.16

Panel B: 3-year transitions

Lagged quintile (q_{t-3})	Q1	Q2	Q3	Q4	Q5
Q1	55.05	31.50	6.12	1.83	5.50
Q2	36.71	37.66	12.03	4.43	9.18
Q3	13.41	14.86	28.62	27.17	15.94
Q4	4.00	7.33	32.67	37.67	18.33
Q5	4.72	5.90	16.51	15.80	57.08

Table IA 3: Mean business plan horizon by Fama-French 49 industry

This table shows the top-15 industries with longest business plan horizon, and the top-15 ones with shortest business plan horizon. Mean business plan horizon by Fama-French 49 industry is calculated from a sample of 13,908 observations of business plan horizon mentioned in the text of the SEC filings of 3,925 firms between 1994 and 2020.

FF49 Industries with Longest Business Plan Horizon

Rank	Industry	Mean Business Plan Horizon
1	Utilities	7.15
2	Mining	5.88
3	Steel Works	5.58
4	Shipbuilding, Railroad Equipment	5.56
5	Coal	5.48
6	Business Supplies	4.94
7	Chemicals	4.93
8	Petroleum and Natural Gas	4.92
9	Communication	4.88
10	Shipping Containers	4.85
11	Personal Services	4.84
12	Construction Materials	4.79
13	Electronic Equipment	4.75
14	Aircraft	4.72
15	Construction	4.68

FF49 Industries with Shortest Business Plan Horizon

Rank	Industry	Mean Business Plan Horizon
1	Defense	3.12
2	Candy & Soda	3.36
3	Banking	3.37
4	Health Services	3.39
5	Consumer Goods	3.54
6	Printing and Publishing	3.59
7	Tobacco Products	3.60
8	Apparel	3.66
9	Retail	3.85
10	Food Products	3.89
11	Restaurants, Hotels, Motels	3.89
12	Insurance	3.90
13	Recreation	3.91
14	Textiles	3.96
15	Wholesale	4.00

Table IA 4: Average informativeness of analysts' forecasts (R^2) by year

This table reports time series for $R^2_{st,t}$ and $R^2_{lt,t}$. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in I/B/E/S in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in I/B/E/S in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. Both $R^2_{st,t}$ and $R^2_{lt,t}$ are constructed by averaging the measure of analysts' forecasts informativeness by horizon developed by Dessaint, Foucault, and Fresard (2024) across all US analysts by (fiscal) year. Dessaint, Foucault, and Fresard (2024) measures forecasts informativeness by analyst-day-horizon using the R^2 of a regression of realized earnings on forecasted earnings. A higher R^2 indicates that the forecasts of an analyst explain a larger fraction of the variation in realized earnings at this horizon.

Year	R^2_{st}	R^2_{lt}
1993	61.5%	44.9%
1994	57.2%	43.8%
1995	57.6%	47.4%
1996	58.7%	48.5%
1997	55.8%	35.7%
1998	55.2%	32.4%
1999	56.6%	42.8%
2000	54.7%	34.7%
2001	54.1%	32.3%
2002	58.0%	41.6%
2003	63.6%	42.8%
2004	61.4%	41.4%
2005	61.0%	39.9%
2006	61.4%	38.6%
2007	52.9%	36.0%
2008	50.6%	35.2%
2009	60.7%	38.3%
2010	63.0%	40.1%
2011	61.8%	36.9%
2012	65.2%	37.4%
2013	67.3%	39.1%
2014	64.6%	41.0%

Table IA 5: Economic Magnitude

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. Controls include $1/PPENT_{t-1}$, $Size_{t-1}$, $CashFlow_{t-1}$, and Q_{t-1}. All variables are normalized by their within-firm standard deviation (except Project Horizon$_i$). All variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. To assess the economic magnitude of our main results, we normalize all variables by their within-firm standard deviation (except *Project Horizon*). t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable: Specification	$\text{Capex}_{i,t}$ (1)
Project Horizon$_i$× $R^2_{lt,t-1}$	0.054***
	(3.57)
Project Horizon$_i$× $R^2_{st,t-1}$	-0.040**
	(-2.41)
$1/\text{PPENT}_{i,t-1}$	0.249***
	(12.43)
$\text{Q}_{i,t-1}$	0.329**
	(13.63)
Cash $\text{Flow}_{i,t-1}$	0.135***
	(10.29)
$\text{Size}_{i,t-1}$	0.022
	(0.59)
Year FE	Yes
Firm FE	Yes
N	66,601

Table IA 6: Robustness - Alternative measures of R^2

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. All other variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. The sample only includes firms with fiscal year ending in December. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:			Capex$_{i,t}$		
Specification	(1)	(2)	(3)	(4)	(5)
Project Horizon$_i \times R^2_{lt,t-2}$	0.20*				
	(4.85)				
Project Horizon$_i \times R^2_{lt,t-3}$		0.23**			
		(2.10)			
Project Horizon$_i \times R^2_{lt,t-4}$			0.26***		
			(2.93)		
Project Horizon$_i \times R^2_{lt,t-5}$				0.18**	
				(2.67)	
Project Horizon$_i \times R^2_{lt,t-6}$					0.08**
					(2.43)
Project Horizon$_i \times R^2_{st,t-1}$	-0.33***	-0.22*	-0.21*	-0.22**	-0.22*
	(-3.12)	(-1.91)	(-1.97)	(-2.09)	(-2.00)
1/PPENT$_{i,t-1}$	0.94***	0.94***	0.94***	0.94***	0.94***
	(14.56)	(14.55)	(14.53)	(14.52)	(14.54)
Q$_{i,t-1}$	0.08***	0.08***	0.08***	0.08***	0.08***
	(12.75)	(12.76)	(12.84)	(12.78)	(12.78)
Cash Flow$_{i,t-1}$	0.30***	0.30***	0.30***	0.30***	0.31***
	(8.60)	(8.58)	(8.55)	(8.58)	(8.59)
Size$_{i,t-1}$	0.01	0.01	0.01	0.01	0.01
	(0.75)	(0.76)	(0.75)	(0.74)	(0.74)
Year x Fama-French 17 FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
N	42,076	42,076	42,076	42,076	42,076

Table IA 7: Robustness - Alternative definitions of R^2

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between (1) 1-23 months, (2) 1-35 months, (3) 1-47 months, (4) 12-23 months, (5) 12-35 months, and (6) 12-47 months. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between (1 and 4) 24-59 months, (2 and 5) 36-59 months, (3 and 6) 48-59 months. All other variables are defined in Appendix I. Explanatory variables that are absorbed by the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$					
Def. of R^2_{lt}:	24m/59m	36m/59m	48m/59m	24m/59m	36m/59m	48m/59m
Def. of R^2_{st}:	1m/23m	1m/35m	1m/47m	12m/23m (baseline)	12m/35m	12m/47m
	(1)	(2)	(3)	(4)	(5)	(6)
Project Horizon$_i$ × $R^2_{lt,t-1}$	0.294***	0.225***	0.117***	0.338***	0.232***	0.117***
	(3.36)	(3.40)	(3.19)	(3.57)	(3.38)	(3.20)
Project Horizon$_i$ × $R^2_{st,t-1}$	-0.295*	-0.218*	-0.019	-0.290**	-0.190*	-0.003
	(-2.06)	(-1.87)	(-0.18)	(-2.41)	(-1.95)	(-0.03)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	66,601	66,601	66,601	66,601	66,601	66,601

Table IA 8: Robustness - Alternative measures of horizon

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average equity duration measure of Goncalves (2021) by SIC2 (Column 1) and that of Weber (2018) by SIC2 (Column 2), the average sales growth by SIC2 (column 3), and the inverse of the average depreciation rate by SIC2 (column 4). In all columns Project Horizon$_i$ is constant by SIC2-industry. All other variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$			
Proxy for Project Horizon by SIC2	Duration Gonçalves (2021)	Duration Weber (2018)	Avg. Sales Growth	Inverse Avg. Dep. Rate
Specification	(1)	(2)	(3)	(4)
Project Horizon$_i$ × $R^2_{lt,t-1}$	0.01***	0.08***	4.54***	0.23*
	(6.24)	(3.14)	(3.60)	(1.90)
Project Horizon$_i$ × $R^2_{st,t-1}$	-0.01***	-0.08***	-3.86**	-0.19*
	(-3.36)	(-3.37)	(-2.33)	(-2.02)
1/PPENT$_{i,t-1}$	0.83***	0.83***	0.83***	0.83***
	(12.15)	(12.25)	(12.43)	(12.41)
Q$_{i,t-1}$	0.08***	0.08***	0.08***	0.08***
	(13.66)	(11.72)	(13.95)	(13.54)
Cash Flow$_{i,t-1}$	0.32***	0.32***	0.32***	0.32***
	(10.01)	(9.11)	(10.18)	(10.19)
Size$_{i,t-1}$	0.01	0.01	0.01	0.01
	(0.61)	(0.56)	(0.67)	(0.61)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Controls Interacted	No	No	No	No
Estimation Method	OLS	OLS	OLS	OLS
N	66,514	66,601	66,601	66,601

Table IA 9: Robustness - Discrete Long Horizon Specification

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Long Horizon is a binary variables that equals one if Project Horizon$_i$ is larger (or equal) than a threshold ranging from 3.5 to 4.75 years. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. All other variables are defined in Appendix I. Explanatory variables that are absorbed by the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. We indicate at the bottom of the table the fraction of observations for which Long Horizon is equal to one.

Dep. variable:	Capex$_{i,t}$					
Def. of Longer Horizon (in yrs):	$\geq$ 3.50	$\geq$ 3.75	$\geq$ 4.00	$\geq$ 4.25	$\geq$ 4.50	$\geq$ 4.75
	(1)	(2)	(3)	(4)	(5)	(6)
Longer Horizon × $R^2_{lt,t-1}$	0.336**	0.284**	0.347***	0.330***	0.151	0.412***
	(2.14)	(2.09)	(5.25)	(4.82)	(1.26)	(2.94)
Longer Horizon × $R^2_{st,t-1}$	-0.475***	-0.350**	-0.334**	-0.289**	-0.193*	-0.374*
	(-3.13)	(-2.43)	(-2.76)	(-2.82)	(-1.81)	(-1.87)
% Longer Horizon = 1	94.9%	89.6%	71.9%	61.4%	35.9%	14.5%
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	66,601	66,601	66,601	66,601	66,601	66,601

Table IA 10: Robustness - Horizon Matching

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Long Horizon is a binary variables that equals one if Project Horizon$_i$ is larger (or equal) than a threshold ranging from 3.5 to 4.25 years. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between (1) 1-41 months, (2) 1-44 months, (3) 1-47 months, and (4) 12-50 months. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between (1) 42-59 months, (2) 45-59 months, (3) 48-59 months, and (4) 51-59 months. All other variables are defined in Appendix I. Explanatory variables that are absorbed by the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:		$\text{Capex}_{i,t}$		
Def. of Longer Horizon (in yrs):	≥ 3.50	≥ 3.75	≥ 4.00	≥ 4.25
Def. of R^2_{lt}:	42m/59m	45m/59m	48m/59m	51m/59m
Def. of R^2_{st}:	1m/41m	1m/44m	1m/47m	1m/50m
	(1)	(2)	(3)	(4)
Longer Horizon × $R^2_{lt,t-1}$	0.182***	0.133**	0.109***	0.061**
	(3.44)	(2.62)	(3.34)	(2.12)
Longer Horizon × $R^2_{st,t-1}$	-0.424**	-0.213	-0.040	0.051
	(-2.46)	(-1.53)	(-0.27)	(0.33)
% Longer Horizon = 1	94.9%	89.6%	71.9%	61.4%
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N	66,601	66,601	66,601	66,601

Table IA 11: Robustness: Alternative measures of investment

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variables are, respectively (1) capital expenditures scaled by lagged PPENT, (2) R&D expenditures scaled by the stock of intangible capital, (3) The sum of capex and R&D over lagged assets, (4) a binary variable that identifies whether a firm announces a business expansion (or several) in a given year (from Capital IQ's Key Developments, since 2002), (5) the number (in log) of business expansion announcements (in logs) in a given year (from Capital IQ's Key Developments, since 2002), (6) the growth of (net) property, plant, and equipment, (7) the number of employees (in logs), (8) SG&A expenses over lagged assets, (9) acquisition expenses over lagged assets, and (10) a binary variable that identifies whether a firm announces an acquisition (or several) in a given year (from Capital IQ's Key Developments, since 2002).Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. All other variables are defined in Appendix I. Explanatory variables that are absorbed by the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex (baseline) (1)	R&D (2)	Capex +R&D (3)	Business Expansion (4)	log(#Bus. Exp.) (5)	ΔPPE (6)	log(Emp) (7)	SG&A (8)	Acq. expenses (9)	Acq. announcement (10)
Project Horizon$_i$ × $R^2_{lt,t-1}$	0.338***	0.187**	0.091	0.450**	0.885**	0.283**	0.462**	-0.088*	-0.086**	-0.313**
	(3.57)	(2.10)	(1.53)	(2.65)	(2.62)	(2.29)	(2.25)	(-1.89)	(-2.62)	(-2.63)
Project Horizon$_i$ × $R^2_{st,t-1}$	-0.290**	-0.264**	-0.109*	-0.306	-0.727**	-0.245	-0.379*	0.116*	0.022	0.034
	(-2.41)	(-2.22)	(-1.99)	(-1.63)	(-2.16)	(-1.49)	(-1.87)	(1.74)	(0.86)	(0.23)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	66,601	41,486	41,489	36,707	36,732	66,592	65,863	66,601	66,601	36,707

Table IA 12: Robustness - Bootstrapped Standard Errors

This table presents estimates of firm-level investment specifications (eq.(11)) with bootstrapped standard errors. The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. All other variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. The sample only includes firms with fiscal year ending in December. We report average coefficients from 1,000 bootstrapped estimations. t-statistics in parentheses are based on standard errors corresponding to the standard deviation of the bootstrapped coefficients. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$			
	(1)	(2)	(3)	(4)
Project Horizon$_i \times R^2_{lt,t-1}$	0.26***	0.26***	0.22***	0.21***
	(2.74)	(2.79)	(2.79)	(2.68)
Project Horizon$_i \times R^2_{st,t-1}$	-0.24***	-0.26***	-0.21***	-0.20***
	(-3.08)	(-3.53)	(-3.24)	(-3.02)
Year FE	Yes	Yes	Yes	Yes
Firm FE	No	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Interacted Controls	No	No	No	Yes
N (bootstrapped samples)	1'000	1'000	1'000	1'000

Table IA 13: Multi-division firms sample descriptive statistics

This table presents descriptive statistics for the main employed variables to estimate specification (12). The sample includes 17,417 firm-division-year observations for 1,231 distinct non-financial non-utility US multi-division firms in Compustat between 1994 and 2015. Detailed variable definitions are in Appendix II.

	N	Mean	STDV	P10	P25	P50	P75	P90
Division Capex	17,416	1.21	1.12	0.29	0.56	0.92	1.45	2.32
R^2_{st}	17,416	0.59	0.04	0.54	0.56	0.59	0.62	0.65
R^2_{lt}	17,416	0.40	0.05	0.35	0.36	0.40	0.44	0.47
Project Horizon	17,416	4.36	0.56	3.70	3.99	4.32	4.58	4.92
Division Q	17,416	1.89	0.54	1.35	1.51	1.78	2.15	2.58
Division Size	17,416	5.35	2.22	2.41	3.84	5.44	6.92	8.14
Division Assets	17,416	1,345	3,213	12	47	231	1,011	3,417
Division Cash Flow	17,416	0.13	0.21	-0.04	0.05	0.13	0.22	0.35

Table IA 14: Robustness to normalization of division Capex

This table presents estimates of division-level investment specification (eq.(12)). The dependent variable is division capex scaled by (i) total capital expenditures (Column 1), (ii) firm-level capital expenditures from Annual Compustat (Column 2), and (iii) division lagged total assets (Column 3), and is log-transformed in Column 4. Project Horizon$_{d,i}$ is the average horizon of investment projects by division, which we proxy by the average horizon of the business plan that firms use in the industry of the division. Project Horizon$_{d,i}$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across divisions operating different SIC2 industries. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. i indexes firm and t indexes fiscal year. All variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Div. Capex / Tot. Capex	Div. Capex / Firm Capex	Div. Capex / Lagged Div. Assets	Log Div. Capex
Specification	(1)	(2)	(3)	(4)
Project Horizon$_{d,i}\times R^2_{lt,t-1}$	0.47***	0.44***	0.14***	1.30***
	(3.88)	(3.95)	(5.11)	(4.29)
Project Horizon$_{d,i}\times R^2_{st,t-1}$	-0.24*	-0.20*	-0.07**	-1.03***
	(-2.02)	(-2.03)	(-2.24)	(-2.98)
Project Horizon$_{d,i}$	-0.03	-0.04	-0.01	0.22
	(-0.57)	(-1.09)	(-0.39)	(1.11)
Division Q$_{d,i,t-1}$	0.01	0.01	0	0.08
	(1.23)	(0.97)	(0.95)	(1.61)
Division Cash Flow$_{d,i,t-1}$	0.06	0.07**	0.01	0.23*
	(1.70)	(2.06)	(1.50)	(1.91)
Division Size$_{d,i,t-1}$	0.24***	0.24***	-0.00**	1.01***
	(47.35)	(41.80)	(-2.62)	(55.13)
Firm × Year FE	Yes	Yes	Yes	Yes
Controls Interacted	No	No	Yes	No
Estimation Method	OLS	OLS	OLS	OLS
N	17,414	17,414	17,416	17,239

Table IA 15: Controlling for macro-economic changes

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. We add variables capturing changes in the macroeconomic environment: US treasury bond yields at various horizons, real GDP growth, unemployment rate, inflation rate, the VIX, and text-based measures of uncertainty from news data by topic (Economic Policy, Monetary Policy, Fiscal Policy, Trade Policy, Taxes, Government Spending, Health care, National Security, Entitlement programs, Regulation, Financial Regulation, and Sovereign debt). i indexes firm and t indexes fiscal year. All variables are defined in Appendix I. All variables are normalized by their within-firm standard deviation (except Project Horizon$_i$). Explanatory variables that are collinear with the fixed effects are omitted from the regression. Controls include $1/PPENT_{t-1}$, $Size_{t-1}$, $CashFlow_{t-1}$, and Q_{t-1}. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$							
Specification	(1)		(2)		(3)		(4)	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Project Horizon$_i\times R^2_{lt,t-1}$	0.011***	(2.96)	0.012***	(2.93)	0.012*	(1.95)	0.063***	(3.59)
Project Horizon$_i\times R^2_{st,t-1}$	-0.007*	(-2.00)	-0.010**	(-2.19)	-0.027***	(-5.03)	-0.065***	(-2.94)
Project Horizon$_i$ × 1-year Treasury Bond Yield$_{t-1}$	0.018	(0.85)					0.009	(0.66)
Project Horizon$_i$ × 3-year Treasury Bond Yield$_{t-1}$	0.049	(1.14)					0.219***	(4.51)
Project Horizon$_i$ × 5-year Treasury Bond Yield$_{t-1}$	-0.112	(-1.21)					-0.454***	(-4.55)
Project Horizon$_i$ × 7-year Treasury Bond Yield$_{t-1}$	-0.008	(-0.10)					0.121*	(1.94)
Project Horizon$_i$ × 10-year Treasury Bond Yield$_{t-1}$	0.061**	(2.62)					0.099	(1.62)
Project Horizon$_i$ × GDP Growth$_{t-1}$			0.001	(0.15)			-0.027*	(-1.89)
Project Horizon$_i$ × Unemployment$_{t-1}$			0.001	(0.31)			0.020	(1.52)
Project Horizon$_i$ × Inflation$_{t-1}$			0.005	(1.23)			-0.041**	(-2.48)
Project Horizon$_i$ × VIX$_{t-1}$					-0.013*	(-1.78)	-0.055***	(-4.19)
Project Horizon$_i$ × EPU Economic Policy$_{t-1}$					0.012	(1.14)	0.005	(0.21)
Project Horizon$_i$ × EPU Monetary Policy$_{t-1}$					-0.009***	(-3.36)	0.029	(1.33)
Project Horizon$_i$ × EPU Fiscal Policy$_{t-1}$					-0.168***	(-33.18)	-0.405***	(-3.10)
Project Horizon$_i$ × EPU Taxes$_{t-1}$					0.089***	(11.99)	0.318***	(3.20)
Project Horizon$_i$ × EPU Government Spending$_{t-1}$					0.049**	(2.53)	0.006	(0.28)
Project Horizon$_i$ × EPU Health care$_{t-1}$					0.011	(1.22)	0.057***	(3.82)
Project Horizon$_i$ × EPU National Security$_{t-1}$					0.005	(1.07)	0.028***	(2.68)
Project Horizon$_i$ × EPU Entitlement programs$_{t-1}$					0017	(1.56)	0.019	(1.23)
Project Horizon$_i$ × EPU Regulation$_{t-1}$					0.012*	(1.89)	-0.014	(-1.41)
Project Horizon$_i$ × EPU Financial Regulation$_{t-1}$					-0.007**	(-2.21)	-0.050**	(-2.53)
Project Horizon$_i$ × EPU Trade Policy$_{t-1}$					-0.005	(-0.62)	-0.030***	(-3.69)
Project Horizon$_i$ × EPU Sovereign debt$_{t-1}$					0.001	(0.40)	0.028***	(2.69)
Year FE	Yes		Yes		Yes		Yes	
Firm FE	Yes		Yes		Yes		Yes	
Controls	Yes		Yes		Yes		Yes	
N	66,343		66,601		66,601		66,343	

Table IA 16: Controlling for firm-level uncertainty

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon_i is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon_i is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. We add variables capturing changes in firm-level uncertainty: realized stock return volatility (from CRSP), their forward-365-day option-implied volatility (from OptionMetrics), and the dispersion of analysts' forecasts. i indexes firm and t indexes fiscal year. All variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	$\text{Capex}_{i,t}$			
	(1)	(2)	(3)	(4)
Project $\text{Horizon}_i \times R^2_{lt,t-1}$	0.238***	0.104	0.358***	0.112*
	(3.42)	(1.60)	(3.13)	(1.78)
Project $\text{Horizon}_i \times R^2_{st,t-1}$ t	-0.229***	-0.142**	-0.250**	-0.174**
	(-2.85)	(-2.21)	(-2.11)	(-2.37)
Realized $\text{Vol}_{i,t}$	-0.036			0.013
	(-0.54)			(0.11)
Project $\text{Horizon}_i \times$ Realized $\text{Vol}_{i,t}$	-0.006			0.002
	(-0.41)			(0.07)
Implied $\text{Vol}_{i,t}$		0.067		0.042
		(1.34)		(0.43)
Project $\text{Horizon}_i \times$ Implied $\text{Vol}_{i,t}$		-0.027**		-0.027
		(-2.34)		(-1.41)
Forecast $\text{Dispersion}_{i,t}$			0.001	-0.079*
			(0.02)	(-1.79)
Project $\text{Horizon}_i \times$ Forecast $\text{Dispersion}_{i,t}$			-0.002	0.015
			(-0.20)	(1.49)
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
N	54,607	27,018	48,537	25,754

Table IA 17: Controlling for asset redeployability

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. We add variables capturing asset redeplpoyability: Redeployability, Redeployability(R^2), and Redeployability(EW) are SIC2-level measures of "asset redeployability" developed by Kim and Kung (2006) based on the usability of assets within and across industries. i indexes firm and t indexes fiscal year. All variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:		$Capex_{i,t}$	
	(1)	(2)	(3)
Project Horizon$_i$ × $R^2_{lt,t-1}$	0.333***	0.331***	0.321***
	(3.30)	(3.30)	(3.16)
Project Horizon$_i$ × $R^2_{st,t-1}$	-0.325**	-0.323**	-0.314**
	(-2.47)	(-2.46)	(-2.39)
Redeployability$_i$ × $R^2_{lt,t-1}$	-0.149		
	(-0.20)		
Redeployability$_i$ × $R^2_{st,t-1}$	-0.780		
	(-1.56)		
Redeployability(R^2)$_i$ × $R^2_{lt,t-1}$		-0.397	
		(-0.28)	
Redeployability(R^2)$_i$ × $R^2_{st,t-1}$		-1.807	
		(-1.03)	
Redeployability(EW)$_i$ × $R^2_{lt,t-1}$			-1.409
			(-1.55)
Redeployability(EW)$_i$ × $R^2_{st,t-1}$			-0.650
			(-1.50)
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Controls	Yes	Yes	Yes
N	66,601	66,601	66,601

Table IA 18: Controlling for trends by industry and geography

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. i indexes firm and t indexes fiscal year. All variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$			
Specification	(1)	(2)	(3)	(4)
Project Horizon$_i$× $R^2_{lt,t-1}$	0.39***	0.33***	0.33***	0.36***
	(3.48)	(3.54)	(3.70)	(3.31)
Project Horizon$_i$× $R^2_{st,t-1}$	-0.45***	-0.30**	-0.27**	-0.43***
	(-3.07)	(-2.45)	(-2.35)	(-2.95)
1/PPENT$_{i,t-1}$	0.83***	0.84***	0.84***	0.85***
	(12.44)	(12.68)	(12.90)	(13.06)
Q$_{i,t-1}$	0.08***	0.08***	0.08***	0.07***
	(13.63)	(14.45)	(13.94)	(14.85)
Cash Flow$_{i,t-1}$	0.31***	0.32***	0.32***	0.31***
	(10.31)	(9.94)	(10.37)	(10.21)
Size$_{i,t-1}$	0.01	0.01	0.01	0.01
	(0.66)	(0.77)	(0.72)	(0.90)
Year × Fama-French 17 FE	Yes	No	No	Yes
Year × Location State FE	No	Yes	No	Yes
Year × Incorporation State FE	No	No	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
N	66,601	66,601	66,418	66,418

Table IA 19: Capital allocation dynamic

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. $\delta R^2_{lt,t+n}$ measures the change in R^2_{lt} between $t-2$ and $t-1$ occurred n years ago. $\delta R^2_{st,t+n}$ measures the change in R^2_{st} between $t-2$ and $t-1$ occurred n years ago. i indexes firm and t indexes fiscal year. All variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. Controls include $1/PPENT_{i,t-1}$, $Size_{i,t-1}$, $CashFlow_{i,t-1}$, and $Q_{i,t-1}$. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$			
Specification	(1)		(2)	
	Coef.	t-stat	Coef.	t-stat
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t-3}$ $(= R^2_{lt,t+2} - R^2_{lt,t+1})$	0.03	(0.54)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t-2}$ $(= R^2_{lt,t+1} - R^2_{lt,t})$	0.00	(-0.04)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t+0}$ $(= R^2_{lt,t-1} - R^2_{lt,t-2})$	0.27***	(8.38)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t+1}$ $(= R^2_{lt,t-2} - R^2_{lt,t-3})$	0.38***	(2.91)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t+2}$ $(= R^2_{lt,t-3} - R^2_{lt,t-4})$	0.47***	(4.05)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t+3}$ $(= R^2_{lt,t-4} - R^2_{lt,t-5})$	0.51***	(3.23)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t+4}$ $(= R^2_{lt,t-5} - R^2_{lt,t-6})$	0.52***	(3.36)		
Project Horizon$_i$ $\times$ $\delta R^2_{lt,t++}$ $(= R^2_{lt,t-6})$	0.45**	(2.54)		
Project Horizon$_i$ $\times$ $\delta R^2_{st,t-3}$ $(= R^2_{st,t+2} - R^2_{st,t+1})$			0.05	(0.69)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t-2}$ $(= R^2_{st,t+1} - R^2_{st,t})$			-0.03	(-0.35)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t+0}$ $(= R^2_{st,t-1} - R^2_{st,t-2})$			-0.41***	(-2.85)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t+1}$ $(= R^2_{st,t-2} - R^2_{st,t-3})$			-0.33**	(-2.65)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t+2}$ $(= R^2_{st,t-3} - R^2_{st,t-4})$			-0.35**	(-2.54)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t+3}$ $(= R^2_{st,t-4} - R^2_{st,t-5})$			-0.34*	(-2.02)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t+4}$ $(= R^2_{st,t-5} - R^2_{st,t-6})$			-0.41**	(-2.17)
Project Horizon$_i$ $\times$ $\delta R^2_{st,t++}$ $(= R^2_{st,t-6})$			-0.58**	(-2.21)
Project Horizon$_i$ $\times$ $R^2_{st,t-1}$	-0.28**	(-2.56)		
Project Horizon$_i$ $\times$ $R^2_{lt,t-1}$			0.32***	(3.67)
Controls	Yes		Yes	
Year FE	Yes		Yes	
Firm FE	Yes		Yes	
N	66,601		66,601	

Table IA 20: Robustness: Text-based Financial constraints

The dependent variables are measures of firms' financial constraints, measured by Hoberg and Maksimovic (2015) from firms' annual report. In columns (1)-(4), the dependent variable is "delaycon": higher values indicate that firms are more at risk of delaying their investments due to issues with liquidity. In columns (5)-(8), the dependent variable is "equitydelaycon": higher values indicate that firms are more at risk of delaying their investments due to liquidity issues and plan to issue equity. In columns (9)-(12), the dependent variable is "debtdelaycon": higher values indicate that firms are more at risk of delaying their investments due to liquidity issues and plan to issue debt.Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. The control variables are defined in Appendix I. Explanatory variables that are absorbed by the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	delaycon				equitydelaycon				debtdelaycon			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Project Horizon$_i$ × $R^2_{lt,t-1}$	-0.027***	-0.020	-0.022	-0.021	-0.008*	-0.005	-0.008	-0.008	-0.030***	-0.033*	-0.031*	-0.028*
	(-4.66)	(-1.04)	(-1.41)	(-1.33)	(-1.98)	(-0.31)	(-0.57)	(-0.56)	(-4.57)	(-1.84)	(-1.83)	(-1.83)
Project Horizon$_i$ × $R^2_{st,t-1}$	0.010	0.002	0.006	0.003	-0.028***	-0.033	-0.029	-0.030	0.013	0.015	0.013	0.012
	(1.17)	(0.08)	(0.24)	(0.12)	(-9.15)	(-1.16)	(-1.06)	(-1.17)	(0.98)	(0.62)	(0.54)	(0.51)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Controls	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes	Yes
Interacted Controls	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes
N	46,415	46,415	46,415	46,415	46,415	46,415	46,415	46,415	46,415	46,415	46,415	46,415

Table IA 21: Improved incentives channel vs. learning channel (peers)

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon$_i$ is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon$_i$ is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. $R^2_{st,t}$ measures the average informativeness of the short-term forecasts made by all US analysts in a given year. Short-term forecasts are forecasts with horizon between 1 and 2 years. $R^2_{lt,t}$ measures the average informativeness of the long-term forecasts made by all US analysts in a given year. Long-term forecasts are forecasts with horizon between 2 and 5 years. i indexes firm and t indexes fiscal year. All variables are defined in Appendix I of the paper. Explanatory variables that are collinear with the fixed effects are omitted from the regression. Controls include $1/PPENT_{i,t-1}$, $Size_{i,t-1}$, and $CashFlow_{i,t-1}$. In column 2, $Q_{SIC,t-1}$ is the average value of Q in firm i's industry (excluding firm i). t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	Capex$_{i,t}$	
Specification	(1)	(2)
Project Horizon$_i\times$ $R^2_{lt,t-1}$	0.481***	0.616*
	(3.33)	(1.82)
Project Horizon$_i\times$ $R^2_{st,t-1}$	-0.346*	-0.522*
	(-1.80)	(-1.78)
Project Horizon$_i\times$ $R^2_{lt,t-1}\times$ Q$_{i,t-1}$	0.028	0.026
	(0.27)	(0.26)
Project Horizon$_i\times$ $R^2_{st,t-1}\times$ Q$_{i,t-1}$	-0.083	-0.057
	(-1.23)	(-0.89)
Q$_{i,t-1}$	0.073	0.112
	(0.43)	(0.69)
Project Horizon$_i\times$ Q$_{i,t-1}$	0.009	-0.003
	(0.24)	(-0.09)
$R^2_{lt,t-1}\times$ Q$_{i,t-1}$	0.616*	0.512*
	(2.03)	(1.79)
$R^2_{st,t-1}\times$ Q$_{i,t-1}$	-0.363	-0.341
	(-0.77)	(-0.76)
Project Horizon$_i\times$ $R^2_{lt,t-1}\times$ Q$_{SIC2,t-1}$		-0.120
		(-0.64)
Project Horizon$_i\times$ $R^2_{st,t-1}\times$ Q$_{SIC2,t-1}$		0.117
		(0.84)
Q$_{SIC2,t-1}$		0.116
		(0.35)
Project Horizon$_i\times$ Q$_{SIC2,t-1}$		-0.003
		(-0.05)
$R^2_{lt,t-1}\times$ Q$_{SIC2,t-1}$		0.343
		(0.44)
$R^2_{st,t-1}\times$ Q$_{SIC2,t-1}$		-0.500
		(-0.81)
Controls	Yes	Yes
Year FE	Yes	Yes
Firm FE	Yes	Yes
N	65,612	66,554

Table IA 22: Trend in (M&A) Project Horizon

This table presents estimates of deal-level regressions. The dependent variable is the horizon (in number of years) expected by the manager of the bidding firm for deal synergies to materialize (Panel A), and for the deal to be EPS-accretive (Panel B). Year Trend is a year counter variable that equals zero before 2001 and increments by one every year after. *Bidder CAR[t-1;t+1]* is the cumulative abnormal return of the bidder's stock over the three-day window around the bid announcement (i.e., from $t = -1$ to $t = +1$ for a bid announced on date t). Abnormal returns are market adjusted returns using the CRSP value weighted portfolio as the market proxy. *Project NPV* is the amount of dollar gains (*Bidder CAR[t-1;t+1]*× Bidder Market Cap. at t-2) scaled by deal value. d indexes deal and t indexes announcement dates. t-statistics in parentheses are based on standard errors clustered by SIC2-industry. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Estimation Method Specification	OLS (1)	OLS (2)	OLS (3)	EW GMM (4)
Panel A: Dep. Var. = Horizon of Synergy Realization				
Year Trend	-0.06*** (-6.54)	-0.05*** (-4.47)	-0.05*** (-4.57)	-0.04*** (-3.50)
Bidder CAR[-1,+1]		-0.68 (-1.02)		
Project NPV			-0.03 (-0.91)	-0.37*** (-5.46)
Constant	2.61*** (21.12)	2.56*** (19.96)	2.56*** (19.82)	
Target SIC2 FE	No	No	No	Yes
N	1,064	801	801	801
Panel B: Dep. Var. = Horizon of EPS Accretion				
Year Trend	-0.03*** (-5.35)	-0.03*** (-5.55)	-0.03*** (-5.80)	-0.03*** (-6.09)
Bidder CAR[-1,+1]		-1.22*** (-3.39)		
Project NPV			-0.03** (-2.47)	-0.02*** (-4.07)
Constant	1.53*** (20.24)	1.65*** (19.77)	1.66*** (20.01)	
Target SIC2 FE	No	No	No	Yes
N	2,809	1,918	1,918	1,918

Table IA 23: Trend in Capex by Project Horizon

This table presents estimates of firm-level investment specifications (eq.(11)). The dependent variable is $Capex_{i,t}$ defined as capital expenditures scaled by lagged PPENT. Project Horizon_i is the average horizon of firms' projects, which we proxy by the average horizon of the business plan that firms use in the industry. Project Horizon_i is constant by SIC2-industry and is aimed to capture structural differences in project horizon across firms. Year Trend_t is a year counter variable, which is equal to 0 before 2001 and increments by one every year after. i indexes firm and t indexes fiscal year. All other variables are defined in Appendix I. Explanatory variables that are collinear with the fixed effects are omitted from the regression. t-statistics in parentheses are based on standard errors clustered in two ways, by SIC2-industry and by fiscal year. Symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dep. variable:	$\text{Capex}_{i,t}$			
Specification	(1)	(2)	(3)	(4)
Project Horizon_i × Year Trend_t	-0.002*	-0.003**	-0.002**	-0.002**
	(-1.78)	(-2.09)	(-2.14)	(-2.21)
Project Horizon_i	0.012			
	(0.53)			
$\text{Q}_{i,t-1}$			0.078***	0.156***
			(13.60)	(47.01)
Cash $\text{Flow}_{i,t-1}$			0.320***	0.218***
			(10.25)	(14.51)
$\text{Size}_{i,t-1}$			0.009	0.032***
			(0.59)	(7.40)
Year FE	Yes	Yes	Yes	Yes
Firm FE	No	Yes	Yes	Yes
Estimation Method	OLS	OLS	OLS	EW GMM
N	66,601	66,601	66,601	66,601

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