Structural Model of Credit Risk: Hedging With Lévy Driven Processes

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Abstract

Empirical studies about structural models of credit risk show poor predictions of bond spreads. Within structural models framework Schaefer and Strebulaev [2008] studied the sensitivity of corporate bond returns to changes in equity value (hedge-ratios) assuming a normal distribution for bond returns. The aim of this paper is testing hedge-ratios on a different sample and in a more general context in order to take into account for extreme values. We consider USA fixed income straight bonds over a period of four years (from 2005 to 2009). Results obtained assuming normally distributed returns as in Schaefer and Strebulaev [2008] are compared with results obtained using Variance Gamma (VG) and Normal Inverse Gaussian distributions (NIG) to better capture extreme returns behaviour.

Keywords: Hedge Ratios, Corporate Bond Spreads, Spread Sensitivity, Variance Gamma, Normal Inverse Gaussian.

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1 Introduction

Within structural models framework developed by Merton [1974], Schaefer and Strebulaev [2008] studied the sensitivity of corporate bond returns to changes in equity value (hedge-ratios) for a sample of USA corporate bonds over the period 1997-2003. The aim of this paper is to test the hedge ratios obtained with structural models, for USA fixed income straight bonds considering a period of four years ranging from 2005 to 2009. Results obtained assuming normally distributed returns are compared with results obtained using Variance Gamma (VG) and Normal Inverse Gaussian distributions (NIG), in order to take into account for extreme values (Collin-Dufresne et al. [2001]).

Despite structural models fail in explaining the observed bond spreads (see Huang and Huang [2003] and Eom et al. [2004]), the empirical findings of Schaefer and Strebulaev [2008] proved that even with the simple Merton model they succeed in capturing bond spreads sensitivity over the stock excess return (apart for the AAA rated bonds). This suggests that in a medium-long run structural models correctly predict the credit risk of the bond but at the same time bond spreads depend on non credit related variables.

One of the assumption of Merton's model is that the underlying variable follows a Gaussian distribution. Since Equity can be seen as a European call option issued always in or at the money, results obtained by Schaefer and Strebulaev [2008] for the AAA rated bond could be explained by the low power of the normal distribution in capturing extreme values of returns. For this class of rating, the value of debt is considerably low, and thus the option is issued deeply in the money.

Our dataset consists of USA fixed income straight bonds. Data have been downloaded from DATASTREAM database. We restrict our sample on bonds having at least 7 years of quoted historical prices and issued by non financial institutions (the first two years are used as a moving sample to estimate the distribution parameters). We analyze six S&P long term rating classes and for each class we consider the monthly returns of i) bonds; ii) shares; and iii) 10 years constant maturity Government bond rates.

Hedge ratios of bonds are determined following Bakshi and Madan [2000] and the estimation of the VG and NIG distribution parameters is performed by the method of moments as discussed among others by Schoutens [2003], Seneta [2004], Tjetjep and Seneta [2006] and Finlay and Seneta [2008].

After having determined hedge ratios proposed by structural models, we test three different regression equations. Starting from a pooled regression on the entire period of time under analysis, from January 2005 to January 2009, we repeat the estimation taking out the last observation, that is taking out the last monthly observation until November 2007 (period from January 2005 to November 2007).

Our empirical results support the role of structural models in capturing the bond spread sensitivity in some period of time with a better estimation of the parameter for the AAA rated bond compared to Schaefer and Strebulaev [2008]. The estimated parameter seems to support the sensitivity predicted by structural models but we find a very poor indicator of the goodness of fit for our models. We then include time dummies in the regression obtaining greater adjusted coefficients of determination[1]. We find that the estimated parameters are particularly dependent on: i) period of time; ii) frequency of the data. Indeed moving from 2005 to 2009 we observe an increasing sensitivity of the bond spreads over the share spreads. This effect is particularly pronounced if we consider higher frequent data (i.e. moving from one month to one week rate of returns). The motivation of this behavior could rely on the fact that excess returns, both for bonds and shares, are negative for the first part of period, while they become positive in the last observations of the sample. This could suggests that bond spreads sensitivity has a different intensity depending on the sign of the excess return.

The paper is organized as follows: in Section 2 the main framework of structural model is introduced and the hedge ratios are determined for a general class of processes. In Section 3 the main characteristics of the Variance Gamma and Normal Inverse Gaussian distributions are detailed together with some technical tools about the risk neutral transformation and the parameters estimation. In Section 4 the models utilized to test the goodness of structural models are introduced and the results of regressions are discussed. Conclusions and further extensions are then included in Section 6.

[1]The time dummies are introduced only in the alternative regression equations proposed in the paper and not in the regression equation proposed by Schaefer and Strebulaev [2008] due to a multicollinearity problem.

2 Structural Models of Credit Risk

Due to the presence of non credit related variables in the price of bonds (Huang and Huang [2003] and Collin-Dufresne et al. [2001]) the price of a bond can be written in the following way:

$$D = D_C + D_{NC} \tag{1}$$

"D_C" is the fraction of the price driven by the risk of default and "D_{NC}" is the fraction of the price driven by non credit related variables. If we assume that the non credit part is unrelated to the corporate value and stock return, then we should have that, despite the pricing errors, the sensitivity of the bond prices to change of credit risk should be adequately considered in structural model (Schaefer and Strebulaev [2008]).
In particular "D_{NC}" contains what is effectively unrelated with the credit risk and in part contains also a valuation error that depends on the model used for the pricing of the "D_C" component. Given the observed distribution of rate of return, that are consistently different from a normal distribution, we decide to determine the sensitivity under the hypothesis that the overall corporate value follows a Variance Gamma and a Normal Inverse Gaussian process. This will let us to consider a better approximation of the corporate value return (given even the difficulties in estimating the parameters due to the non-traded nature of the variable). The main idea is that especially for AAA rated bonds, due to the low value of debt with respect to the firm value, Gaussian distribution fails in considering the extreme event that the overall corporate value can fall below the debt value and thus triggers the default event. Considering extreme values in the rate of return we can better capture this possibility and thus reduce the part of "D_{NC}" that depends on errors in the pricing model.
Introducing now the structural models for the pricing of corporate bonds we start considering that the overall corporate value dynamics "V", follows:

$$\frac{dV}{V} = \mu\, dt + \sigma\, dW \tag{2}$$

where "dW" is a Brownian motion.
Under the well known structural model (see Merton [1974]) we can write the equity value as:

$$E = V\Phi(x_1) - B^{-r\tau}\Phi(x_2) \tag{3}$$

$$\Phi(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{x} exp\Big(-\frac{1}{2}z^2\Big)dz \tag{4}$$

$$x_1 = \left[log\big(V/B\big) + \Big(r + \frac{1}{2}\sigma^2\Big)\tau\right] / \sigma\sqrt{\tau} \tag{5}$$

$$x_2 = x_1 - \sigma\sqrt{\tau} \tag{6}$$

Following Modigliani and Miller Modigliani and Miller [1958] it is possible then to write the value of the risky debt as the difference between the corporate value and the value of the stock just determined

(D=V-E). This will lead us to the following equation:

$$D = B^{-r\tau}\left(\Phi(h_2) + \frac{1}{d}\Phi(h_1)\right) \tag{7}$$

$$d = \frac{Be^{-r\tau}}{V} \tag{8}$$

$$h_1 = -\left(\frac{1}{2}\sigma^2\tau - log(d)\right)/\sigma\sqrt{\tau} \tag{9}$$

$$h_2 = -\left(\frac{1}{2}\sigma^2\tau + log(d)\right)/\sigma\sqrt{\tau} \tag{10}$$

These equations let us to determine easily the sensitivity of the risky debt price on the stock price. Indicating the elasticity of the debt price with respect to the stock price as:

$$h_e = \frac{\partial D}{D}\frac{E}{\partial E} \tag{11}$$

we can make use of equations (3) and (7) in order to obtain the following quantity:

$$h_e = \left(\frac{1}{\Delta_E} - 1\right)\left(\frac{V}{D} - 1\right) \tag{12}$$

where "$\Delta_E = \frac{\partial E}{\partial V}$". Using now Equation (3) we can rewrite the elasticity as:

$$h_e = \left(\frac{1}{\Phi(x_1)} - 1\right)\left(\frac{V}{D} - 1\right) \tag{13}$$

Given the definition of elasticity the above expression contained in Equation (13) should be equal to the ratio between the corporate debt return and the stock rate return.

Following Bakshi and Madan [2000] we can write the value of a European call option written on the underlying asset "S" with strike price "K" in the following general form:

$$C(K,T) = S_0\Pi_1 - Ke^{-rT}\Pi_2 \tag{14}$$

where

$$\Pi_1 = \frac{1}{2} + \frac{1}{\pi}\int_0^\infty Re\left(\frac{exp(-iu\,log(K))\phi(u-i)}{iu\phi(-i)}\right)du \tag{15}$$

$$\Pi_2 = \frac{1}{2} + \frac{1}{\pi}\int_0^\infty Re\left(\frac{exp(-iu\,log(K))\phi(u)}{iu}\right)du \tag{16}$$

and $i = \sqrt{-1}$, Re indicates the real part and $\phi(u)$ indicates the characteristic function of the process considered.
Since the equity value in structural model is equal to a call option written on the overall corporate value with strike price equal to the value of the debt "D" at maturity Merton [1974], through Equation (14) we obtain:

$$E_t = V_t\Pi_1 - D_T e^{-r(T-t)}\Pi_2 \tag{17}$$

The sensitivity of the corporate debt spread over the equity spread becomes:

$$h_e = \left(\frac{1}{\Pi_1} - 1\right)\left(\frac{V}{D} - 1\right) \tag{18}$$

The pricing equation of Bakshi and Madan [2000] allows us to determine other hedging measures under the assumptions that the overall corporate value follows a different stochastic process and in particular under the assumption that it follows pure jump processes where the characteristic function is known. The challenge is now to determine the value of Π_1 and given that a closed form solution for this variable is not always available we should recover to numerical techniques in order to determine the sensitivity measure.

3 Overall Corporate Rate of Return

In this section we describe the assumptions about the distribution of the overall corporate rate of return considering both Variance Gamma and Normal Inverse Gaussian distribution. We give also some technical details about the estimation of the parameters of such distribtutions.

3.1 Variance Gamma

The Variance Gamma (VG) process is like a Gamma time changed Brownian Motion with drift (Schoutens [2003]). In particular let $G = \{G_t,\, t \geq 0\}$ be a Gamma process, that is a process starting at zero and having stationary and independent Gamma distributed increments with:

$$f_{Gamma}(x;\, t/\nu,\, 1/\nu) = \frac{(1/\nu)^{(t/\nu)}}{\Gamma(t/\nu)} x^{(t/\nu - 1)} exp(-x/\nu), \quad x > 0 \tag{19}$$

and let $W = \{W_t,\, t \geq 0\}$ be a standard Brownian Motion. If we assume that $\sigma > 0$ and $\theta \in \Re$ then the process:

$$X_t = \theta\, G_t + \sigma W_{G_t} \tag{20}$$

follows a Variance Gamma process $VG(\sigma,\, \nu,\, \theta)$. Suppose that we model the stock continuously compounded rate of return as

$$\log\left(\frac{S_t}{S_0}\right) = \mu t + X_t \tag{21}$$

where "X_t" is a Variance Gamma process with characteristic function equal to:

$$\Phi_X^P(\omega) = \frac{1}{\left(1 - i\theta\nu\omega + \frac{1}{2}\sigma^2\nu\omega^2\right)^{\frac{t}{\nu}}} \tag{22}$$

then the continuously compounded stock return will have thus the following characteristic function:

$$\Phi_R^P(\omega) = \frac{e^{i\omega\mu\, t}}{\left(1 - i\theta\nu\omega + \frac{1}{2}\sigma^2\nu\omega^2\right)^{\frac{t}{\nu}}} \tag{23}$$

In order to obtain the risk neutral measure we will perform a mean correction (see Schoutens [2003]). In particular the risk-neutral characteristic function is obtained by:

$$\Phi^{Q}_{\frac{log(S_T)}{log(S_0)}}(\omega) = \Phi^{P}_{\frac{log(S_T)}{log(S_0)}}(\omega)e^{i\omega\, m} \tag{24}$$

For the VG process we will have:

$$m = r\,t + \frac{t}{\nu}\log\Big(1 - \theta\nu - \frac{1}{2}\sigma^2\nu\Big) \tag{25}$$

the risk neutral characteristic function of the log stock price becomes:

$$\Phi^{Q}_{log(S_t)}(\omega) = \frac{e^{i\omega(log(S_0)+rT)}e^{i\omega\frac{t}{\nu}log\left(1-\theta\nu-\frac{1}{2}\sigma^2\nu\right)}}{\Big(1 - i\omega\theta\nu - \frac{1}{2}\sigma^2\nu\omega^2\Big)^{\frac{t}{\nu}}} \tag{26}$$

Using now the pricing equation of Bakshi and Madan [2000] we can write the price of a European call option when the stock price return follows a $VG(\sigma,\, \nu,\, \theta)$ as:

$$\begin{aligned}
C_T &= \max\big(0, S_T - K\big) && (27)\\
C_0 &= S_0\Pi_1 - KB\Pi_2 && (28)\\
B &= e^{-rT} && (29)\\
\Pi_j &= \frac{1}{2} + \frac{1}{\pi}\int_0^{\infty} Re\left[\frac{e^{-\left(i\log(K)\omega\right)}f_j(\omega)}{i\omega}\right]d\omega, \quad j = 1, 2 && (30)\\
f_1 &= \frac{f_2\Big(1 - i\omega\theta\nu - \frac{1}{2}\sigma^2\nu\omega^2\Big)^{\frac{t}{\nu}}}{\Big(1 - \theta\nu(1+i\omega) + \frac{1}{2}\sigma^2\nu(\omega^2 - 1 - 2\omega\, i)\Big)^{\frac{t}{\nu}}} && (31)\\
f_2 &= \Phi^{Q}_{log(S_t)}(\omega) && (32)
\end{aligned}$$

3.2 Normal Inverse Gaussian

The Normal Inverse Gaussian (NIG) process is an Inverse Gaussian (IG) time changed Brownian motion. In particular if we let $W = \{W_t,\, t \geq 0\}$ be a standard Brownian motion and let $I = \{I_t,\, t \geq 0\}$ be an IG process, that is a process starting at zero and having independent and stationary Inverse Gaussian distributed increments with:

$$f_{IG} = (x;\, t,\, b) = \frac{t}{\sqrt{2\pi}}exp(tb)x^{-3/2}exp\Big(-\frac{1}{2}(t^2x^{-1} + b^2x)\Big), \quad x > 0 \tag{33}$$

where $b = \delta\sqrt{\alpha^2 - \beta^2}$. Assuming $\alpha > 0$, $-\alpha < \beta < \alpha$ and $\delta > 0$ we can show that the process:

$$X_t = \beta\delta^2\, I_t + \delta\, W_{I_t} \tag{34}$$

follows a $NIG(\alpha,\, \beta,\, \delta)$
The characteristic function of a normal inverse Gaussian random variable assumes the following form:

$$\Phi_{NIG}(\omega) = exp\Big(-t\delta\sqrt{\alpha^2 - (\beta + i\omega)^2} - \sqrt{\alpha^2 - \beta^2}\Big) \tag{35}$$

the characteristic function of the rate of return assumes thus:

$$\Phi_R^P(\omega) = exp\Big(i\omega\mu - t\delta\big(\sqrt{\alpha^2-(\beta+i\omega)^2}-\sqrt{\alpha^2-\beta^2}\big)\Big) \tag{36}$$

the risk neutral measure can be obtained as in the previous subsection. Thus the risk neutral characteristic function can be obtained by using:

$$m = rt - \mu\, t + t\delta\Big(\sqrt{\alpha^2-(\beta+1)^2}-\sqrt{\alpha^2-\beta^2}\Big) \tag{37}$$

this will let us to write the price of the European call option as:

$$\begin{aligned}
C_T &= \max\big(0, S_T - K\big) && (38)\\
C_0 &= S_0\Pi_1 - KB\Pi_2 && (39)\\
B &= e^{-rT} && (40)\\
\Pi_j &= \frac{1}{2} + \frac{1}{\pi}\int_0^\infty Re\left[\frac{e^{-\big(i\log(K)\omega\big)}\, f_j(\omega)}{i\omega}\right] d\omega, \quad j=1,2 && (41)\\
f_1 &= f_2 \exp\Big[t\delta\big(\sqrt{\alpha^2-(\beta+i\omega)^2}-\sqrt{\alpha^2-\beta^2}\big) + \\
&\quad + t\delta\big(\sqrt{\alpha^2-(\beta+1)^2}-\sqrt{\alpha^2-\beta^2}\big) + \\
&\quad - t\delta\big(\sqrt{\alpha^2-(\beta+i(\omega-i))^2}-\sqrt{\alpha^2-\beta^2}\big)\Big] && (42)\\
f_2 &= \exp\Big[i\omega\big(rt + log(S_0)\big) - t\delta\big(\sqrt{\alpha^2-(\beta+i\omega)^2}-\sqrt{\alpha^2-\beta^2}\big) + \\
&\quad + i\omega\, t\delta\big(\sqrt{\alpha^2-(\beta+1)^2}-\sqrt{\alpha^2-\beta^2}\big)\Big] && (43)
\end{aligned}$$

3.3 Estimation of the Distributions Parameters

In order to estimate the parameters of VG and NIG distributions we resort to the method of moments. The motivations are related to the simplicity and the weight of computation in using the Maximum Likelihood method, since for every month we estimate a new set of parameters adding each time the newest observation.

In particular the parameters are obtained by minimizing the following function:

$$\min_\gamma \Theta = \sum_{i=1}^{4}\left(\frac{M_T(i) - M_E(i)}{M_E(i)}\right)^2 \tag{44}$$

where γ is the set of parameters for each distribution, $M_T(i)$ is the theoretical $i-th$ moment and $M_E(i)$ is the empirical $i-th$ moment. Once determined the real world physical measure parameters we obtain the risk neutral measure by the mean correction procedure seen above. In particular we refer to the set of normalized moment contained in Table 1:

	$VG(\sigma,\, \nu,\, \theta)$	$NIG(\alpha,\, \beta,\, \delta)$
Mean	θ	$\delta\beta\sqrt{\alpha^2-\beta^2}$
Variance	$\sigma^2+\nu\theta^2$	$\alpha^2\delta(\alpha^2-\beta^2)^{-3/2}$
Skewness	$\theta\nu(3\sigma^2+2\nu\theta^2)(\sigma^2+\nu\theta^2)^{-3/2}$	$3\beta\alpha^{-1}\delta^{-1/2}(\alpha^2-\beta^2)^{-1/4}$
Kurtosis	$3\big(1+2\nu-\nu\sigma^4(\sigma^2+\nu\theta^2)^{-2}\big)$	$3\left(1+\frac{\alpha^2+4\beta^2}{\delta\alpha^2\sqrt{\alpha^2-\beta^2}}\right)$

Table 1: Normalized moments for the Variance Gamma and Normal Inverse Gaussian distributions.

4 Data Specifications

To test structural model in predicting debt spread sensitivity we downloaded from DATASTREAM the gross bond prices of the USA market from April 15th 2002 to April 15th 2009. Approximately the first two years are used for the estimation of the parameters of the distributions necessary to determine the first hedge ratio. Then we work with a moving sample that is obtained by adding a new observation for every period in order to update the hedge ratio. The estimation of the parameters of the distribution is conducted by summing up the market capitalization of companies and the overall market value of bonds. From the set above we test structural models with monthly rate of return from January 2005 to January 2009 with a total of 50 observations. Different specifications of the regression model have been considered starting from the model proposed by Schaefer and Strebulaev [2008] in particular we test:

Model Name	Regression Equation
Schaefer and Strebulaev [2008]	$\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$
Basic Model	$r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$
Basic Modified	$\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \Big(h_{E_{j,t}} r_{E_{j,t}} - rf \Big) + \epsilon_{j,t}$

Where:

- $\bar{r}_{D_{j,t}}$ is the excess return of the corporate bond over the monthly return of the 3-months USA treasury bill
- $\bar{r}_{E_{j,t}}$ is the excess return of the corporate stock over the monthly return of the 3-months USA treasury bill;
- $\bar{r}_{f_{10y,t}}$ is the excess return of the 10 years constant maturity treasury bond over the monthly return

of the 3-months USA treasury bill;

- $h_{E_{j,t}}$ is the sensitivity of the bond return over the stock return calculated following structural models approach.

The above mentioned variables without the upper bar refer to their value not considering their excess of return with respect to the risk free rate.
If structural models are able to capture the bond return sensitivity we should have the estimated coefficient β_E equal to 1 and statistically significant, while the other coefficients α_0 and β_{r_f} should not be statistically different from zero.

While the model of Schaefer and Strebulaev [2008] seems to well explain the behaviour for almost all the rating classes of bonds, it fails in explaining the credit spread for the AAA rated bonds. This result may be due to numerous factors and especially to the impact of non credit-risk related variables on bond spreads. The non credit component of the bond spread is strictly connected with liquidity risk and other macroeconomics variables that are not related to the specific credit risk of the company.
The basic statistics of the sample selected are indicated in Table (2).

	All	AAA	AA	A	BBB	BB	B
N. BONDS	259	7	15	85	125	18	8
N. ISSUERS	104	4	5	30	49	9	6
Mean time to maturity	205.43	183.14	222.87	213.53	197.47	224.97	212.3
Mean book leverage %	37.11	18.48	36.22	35.55	39.25	36.1	44.94
Mean return bond %	-0.42	0.04	-0.06	-0.2	-0.52	-0.99	-1.04
Mean variance bond	0.14	0.32	0.09	0.1	0.13	0.28	0.43
Mean kurtosis bond	8.24	5.79	5.02	6.46	9.3	11.15	13.15
Mean skewness bond	-1.09	0.18	-0.07	-0.53	-1.55	-1.61	-1.95
Mean return share %	-0.93	-0.42	0.12	-0.01	-1.39	-1.99	-3.54
Mean variance share	0.95	0.31	0.38	0.56	1.16	1.41	2.44
Mean kurtosis share	6.12	3.97	4.27	4.91	7	5.61	12.58
Mean skewness share	-1.05	-0.4	-0.59	-0.8	-1.25	-1.09	-2
Mean return corporate v. %	-0.16	-0.32	-0.03	0.2	-0.3	-0.48	-1.29
Mean variance corporate v.	0.75	0.35	0.38	0.64	0.73	1.5	1.47
Mean kurtosis corporate v.	6.46	6.95	6.9	5.56	6.77	6.77	10.1
Mean skewness corporate v.	-0.79	-0.71	0.03	-0.7	-0.9	-0.83	-1.58

Table 2: Sample statistics.

The idea of using different regression equations stems from the fact that following Equation (12) of the elasticity of the bond return over the stock return we should have that ratio between corporate bond return and stock return expressed in percentage should be equal to the hedge ratio so determined. The inclusion of other variables and the constant term (intecept) should not have any impact in explaining the corporate bond return, and indeed, in order to validate structural models, they should not be statistically different from zero.

The Basic model proposed is indeed the simplest model that directly comes from the definition of the elasticity with the inclusion of the constant term [2]. Indeed the ratio of the corporate bond return on the stock return should be equal to Equation 12:

$$\frac{r_{D_{j,t}}}{r_{E_{j,t}}} = h_{E_{j,t}} \tag{45}$$

from which we obtain the regression equation of the basic model.
The modified version of the basic model introduces the risk free rate of interest in such a way that it does not alter the power and the meaning of the regression equation. If the slope of the excess return of the stock return multiplied by the hedge ratio is 1 (that would validate structural models) then at the same time the role of the risk free rate would be zero. Indeed rearranging the equation we obtain:

$$r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + (1 - \beta_E) rf + \epsilon_{j,t} \tag{46}$$

The results of the empirical estimation for the total sample are contained in Tables 3, 4, 5, 6 and 7. The tables for each class of rating are instead contained in Appendix.

5 Empirical Results

Empirical results seem to support the role of structural models in predicting the corporate bond sensitivity only for some periods of time. With the model proposed by Schaefer and Strebulaev [2008] we can see from Table 3 that structural models are able to predict the credit spread sensitivity for the period between February 2008 to December 2008. With the Normal Inverse Gaussian distribution that performs better than the Normal Gaussian only for those bond having a sensitivity greater than 1. This is a common feature even if we consider results obtained from each single class of rating.

Comparing the performance of fat tailed distributions with the Normal distribution we can say that the first ones give us better results when the sensibility of the bond return over the stock return is greater.
The Variance Gamma distribution seems instead to poorly predict the elasticity of the bond return, perhaps because of our choise of using the method of moments to estimate the parameters of the distributions [3].

The basic model and the basic modified model (Tables 4 and 6) seem instead to better predict the sensitivity for the whole period showing lower standard errors of the estimated coefficients. Including time dummy variables (Tables 5 and 7) drastically increases the adjusted R^2 (Adj R^2), otherwise really low. This allows us to have a better fit of the model also if we observe that time dummies in the constant term (intercept) are almost all statistically significant, meaning that structural models alone are not able to capture the sensitivity of bond.

Both the basic model and the basic modified model with the inclusion of time dummies seem to support the role of structural models for the beginning and the central part of last months. The NIG distribution performs worse for coefficients lower than 1 and better otherwise, indicating the possibility

[2] This because we need to calculate the coefficient of determination in order to have a measure of the goodness of fit.
[3] For completeness we should compare our results with those obtained trhough a Maximum Likelihood or Empirical Characteristic Function (ECF) estimation.

of a different behaviour of the bond return.

Analyzing the data of each rating class we can observe what follows:

AAA though the sample size is quite small for this class, the original model of Schaefer and Strebulaev [2008] seems to support the role of structural models almost in every period, suggesting the good performance in predicting the sensitivity. Considering the basic model we obtain very poor performances while the modified version shows very good results when we include time dummies (in this case we obtain a great increase of the goodness of fit);

AA empirical rsults for these rated bonds support structural models when using the basic and the modified basic model. Including time dummies in these two cases increases the goodness of fit of the model but at the same time shows a reduction of the quality of structural models;

A we obtain results that seem to support structural models only if we consider the last monthly observations. This does not occur when using the regression in the basic modified model with Variance Gamma distribution. This fact seems to be in contrast with the behaviour observed with the other rating classes. Even in this case, including time dummies has the effect of increasing the goodness of fit and reducing the quality of structural models. What may be interesting to note is that the relation between the two rate of return seems to be closer to -1 considering the first periods;

BBB for this class of rating the basic model seems to support the quality of structural models even if we add time dummy variables. Considering other regression equations we can say that results suggest a behaviour very close to that one of A rated bonds.

BB all the regression equations seem to support the role of structural models, though only the modified basic one gives us good results also with the inclusion of time dummy variables;

B except for the case of the Variance Gamma distribution and the basic regression equation we obtain positive evidence of the quality of structural models.

Normal							
All	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.470	(0.000)	2.476	(0.000)	0.004
Dec-07	-0.005	(0.000)	-0.438	(0.000)	2.101	(0.000)	0.003
Jan-08	-0.005	(0.000)	-0.193	(0.000)	2.306	(0.000)	0.003
Feb-08	-0.005	(0.000)	0.496	(0.130)	1.350	(0.000)	0.003
Mar-08	-0.005	(0.000)	0.354	(0.033)	0.130	(0.611)	0.001
Apr-08	-0.005	(0.000)	0.353	(0.017)	-0.062	(0.761)	0.001
May-08	-0.005	(0.000)	0.465	(0.024)	-0.892	(0.000)	0.003
Jun-08	-0.005	(0.000)	0.392	(0.002)	-0.658	(0.000)	0.002
Jul-08	-0.005	(0.000)	0.357	(0.000)	-1.042	(0.000)	0.003
Aug-08	-0.005	(0.000)	0.391	(0.000)	-0.591	(0.000)	0.003
Sep-08	-0.005	(0.000)	0.771	(0.110)	-1.962	(0.000)	0.018
Oct-08	-0.003	(0.000)	1.807	(0.000)	-5.836	(0.000)	0.176
Nov-08	-0.003	(0.000)	0.930	(0.543)	-4.527	(0.000)	0.076
Dec-08	-0.003	(0.000)	0.667	(0.036)	-4.537	(0.000)	0.047
Jan-09	-0.003	(0.000)	0.042	(0.000)	-6.044	(0.000)	0.021

Normal Inverse Gaussian							
All	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.474	(0.000)	2.474	(0.000)	0.004
Dec-07	-0.005	(0.000)	-0.443	(0.000)	2.099	(0.000)	0.003
Jan-08	-0.005	(0.000)	-0.203	(0.000)	2.303	(0.000)	0.003
Feb-08	-0.005	(0.000)	0.468	(0.103)	1.346	(0.000)	0.002
Mar-08	-0.005	(0.000)	0.333	(0.025)	0.128	(0.617)	0.001
Apr-08	-0.005	(0.000)	0.334	(0.012)	-0.062	(0.761)	0.001
May-08	-0.005	(0.000)	0.445	(0.017)	-0.893	(0.000)	0.003
Jun-08	-0.005	(0.000)	0.376	(0.001)	-0.661	(0.000)	0.002
Jul-08	-0.005	(0.000)	0.343	(0.000)	-1.044	(0.000)	0.003
Aug-08	-0.005	(0.000)	0.377	(0.000)	-0.592	(0.000)	0.003
Sep-08	-0.005	(0.000)	0.755	(0.082)	-1.961	(0.000)	0.018
Oct-08	-0.003	(0.000)	1.789	(0.000)	-5.812	(0.000)	0.176
Nov-08	-0.003	(0.000)	0.929	(0.535)	-4.494	(0.000)	0.076
Dec-08	-0.003	(0.000)	0.682	(0.041)	-4.477	(0.000)	0.048
Jan-09	-0.003	(0.000)	0.076	(0.000)	-5.961	(0.000)	0.022

Variance Gamma							
All	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.025	(0.000)	2.499	(0.000)	0.003
Dec-07	-0.005	(0.000)	-0.024	(0.000)	2.126	(0.000)	0.002
Jan-08	-0.005	(0.000)	-0.020	(0.000)	2.338	(0.000)	0.003
Feb-08	-0.005	(0.000)	0.004	(0.000)	1.203	(0.000)	0.001
Mar-08	-0.005	(0.000)	0.001	(0.000)	0.062	(0.817)	0.000
Apr-08	-0.005	(0.000)	0.003	(0.000)	-0.071	(0.735)	0.000
May-08	-0.005	(0.000)	0.010	(0.000)	-0.940	(0.000)	0.001
Jun-08	-0.005	(0.000)	0.012	(0.000)	-0.814	(0.000)	0.000
Jul-08	-0.005	(0.000)	0.013	(0.000)	-1.197	(0.000)	0.001
Aug-08	-0.005	(0.000)	0.016	(0.000)	-0.704	(0.000)	0.000
Sep-08	-0.004	(0.000)	0.063	(0.000)	-2.547	(0.000)	0.007
Oct-08	-0.002	(0.000)	0.389	(0.049)	-9.095	(0.000)	0.084
Nov-08	-0.003	(0.000)	0.274	(0.000)	-6.569	(0.000)	0.043
Dec-08	-0.003	(0.000)	0.239	(0.000)	-5.732	(0.000)	0.028
Jan-09	-0.003	(0.000)	0.046	(0.000)	-6.044	(0.000)	0.021

Table 3: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
All	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.003	(0.000)	0.360	(0.000)	0.001
Dec-07	-0.004	(0.000)	0.285	(0.000)	0.000
Jan-08	-0.003	(0.000)	0.408	(0.001)	0.001
Feb-08	-0.002	(0.035)	0.835	(0.553)	0.006
Mar-08	-0.003	(0.000)	0.557	(0.091)	0.003
Apr-08	-0.003	(0.000)	0.503	(0.030)	0.003
May-08	-0.004	(0.000)	0.522	(0.021)	0.003
Jun-08	-0.004	(0.000)	0.479	(0.004)	0.003
Jul-08	-0.004	(0.000)	0.412	(0.000)	0.003
Aug-08	-0.004	(0.000)	0.448	(0.000)	0.003
Sep-08	-0.003	(0.000)	0.789	(0.132)	0.013
Oct-08	-0.001	(0.116)	1.978	(0.000)	0.138
Nov-08	-0.003	(0.000)	1.091	(0.472)	0.061
Dec-08	-0.004	(0.000)	0.768	(0.153)	0.035
Jan-09	-0.007	(0.000)	0.049	(0.000)	0.001

Normal Inverse Gaussian					
All	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.003	(0.000)	0.320	(0.000)	0.001
Dec-07	-0.004	(0.000)	0.249	(0.000)	0.000
Jan-08	-0.003	(0.000)	0.372	(0.000)	0.001
Feb-08	-0.002	(0.021)	0.795	(0.454)	0.005
Mar-08	-0.003	(0.000)	0.530	(0.069)	0.003
Apr-08	-0.003	(0.000)	0.481	(0.021)	0.003
May-08	-0.004	(0.000)	0.503	(0.015)	0.003
Jun-08	-0.004	(0.000)	0.461	(0.003)	0.003
Jul-08	-0.004	(0.000)	0.398	(0.000)	0.002
Aug-08	-0.004	(0.000)	0.434	(0.000)	0.003
Sep-08	-0.003	(0.000)	0.775	(0.103)	0.013
Oct-08	-0.001	(0.094)	1.961	(0.000)	0.139
Nov-08	-0.003	(0.000)	1.090	(0.474)	0.062
Dec-08	-0.004	(0.000)	0.784	(0.174)	0.036
Jan-09	-0.007	(0.000)	0.089	(0.000)	0.003

Variance Gamma					
All	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.004	(0.000)	-0.003	(0.000)	0.000
Dec-07	-0.005	(0.000)	-0.004	(0.000)	0.000
Jan-08	-0.004	(0.000)	0.001	(0.000)	0.000
Feb-08	-0.005	(0.000)	0.019	(0.000)	0.000
Mar-08	-0.005	(0.000)	0.012	(0.000)	0.000
Apr-08	-0.005	(0.000)	0.013	(0.000)	0.000
May-08	-0.005	(0.000)	0.016	(0.000)	0.000
Jun-08	-0.005	(0.000)	0.018	(0.000)	0.000
Jul-08	-0.005	(0.000)	0.018	(0.000)	0.000
Aug-08	-0.005	(0.000)	0.023	(0.000)	0.000
Sep-08	-0.006	(0.000)	0.063	(0.000)	0.001
Oct-08	-0.007	(0.000)	0.422	(0.091)	0.024
Nov-08	-0.006	(0.000)	0.329	(0.003)	0.015
Dec-08	-0.006	(0.000)	0.278	(0.000)	0.010
Jan-09	-0.007	(0.000)	0.055	(0.000)	0.001

Table 4: Regression results of the model named Basic Modified ($\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E\Big(h_{E_{j,t}} r_{E_{j,t}} - rf\Big) + \epsilon_{j,t}$). The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
All	β_E	p-value	Adj R^2
Nov-07	0.265	(0.000)	0.460
Dec-07	0.222	(0.000)	0.458
Jan-08	0.378	(0.000)	0.445
Feb-08	0.908	(0.761)	0.433
Mar-08	0.757	(0.375)	0.424
Apr-08	0.728	(0.267)	0.413
May-08	0.757	(0.274)	0.408
Jun-08	0.699	(0.130)	0.401
Jul-08	0.594	(0.020)	0.395
Aug-08	0.546	(0.007)	0.390
Sep-08	0.622	(0.010)	0.388
Oct-08	0.870	(0.390)	0.501
Nov-08	0.755	(0.025)	0.467
Dec-08	0.384	(0.000)	0.394
Jan-09	0.010	(0.000)	0.362

Normal Inverse Gaussian			
All	β_E	p-value	Adj R^2
Nov-07	0.253	(0.000)	0.460
Dec-07	0.212	(0.000)	0.458
Jan-08	0.364	(0.000)	0.445
Feb-08	0.880	(0.688)	0.433
Mar-08	0.736	(0.327)	0.424
Apr-08	0.710	(0.228)	0.413
May-08	0.741	(0.234)	0.408
Jun-08	0.685	(0.107)	0.401
Jul-08	0.582	(0.015)	0.395
Aug-08	0.535	(0.005)	0.390
Sep-08	0.612	(0.007)	0.388
Oct-08	0.863	(0.353)	0.501
Nov-08	0.753	(0.022)	0.468
Dec-08	0.395	(0.000)	0.394
Jan-09	0.022	(0.000)	0.362

Variance Gamma			
All	β_E	p-value	Adj R^2
Nov-07	0.007	(0.000)	0.460
Dec-07	0.007	(0.000)	0.457
Jan-08	0.011	(0.000)	0.444
Feb-08	0.030	(0.000)	0.428
Mar-08	0.029	(0.000)	0.420
Apr-08	0.030	(0.000)	0.409
May-08	0.034	(0.000)	0.403
Jun-08	0.037	(0.000)	0.396
Jul-08	0.038	(0.000)	0.391
Aug-08	0.037	(0.000)	0.386
Sep-08	0.053	(0.000)	0.382
Oct-08	0.141	(0.000)	0.485
Nov-08	0.197	(0.000)	0.451
Dec-08	0.124	(0.000)	0.389
Jan-09	0.012	(0.000)	0.362

Table 5: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E\Big(h_{E_{j,t}} r_{E_{j,t}} - rf\Big) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

6 Conclusions

Concluding we can stress out that the role of structural models in predicting the bond return sensitivity strictly depends on the time period we choose to consider. We know that our sample is different from that one chose by Schaefer and Strebulaev [2008]; trying to make a comparison with their work we can note that the main difference appears to be the poor role of the 10 years treasury note spread in predicting the bond spreads.

Results suggest that including this variable does not produce the same effect as they discovered and poorly help in explaining the bond returns.

Considering different kind of distributions of the overall corporate value seems to improve the quality of structural models in capturing the bond return only in the case of an over sensibility (apart for the AAA rating class). Perhaps working with weekly data could increase drastically the role of these distributions in predicting the real probability of bankruptcy.

Further extensions of the work, in terms of a better specification of the regression equation, could include other microeconomics variables (this could help even to overcome the multicollinearity problem in the Schaefer and Strebulaev [2008] model when adding time dummies), for example relating the 10 years treasury rate spread to a corporate index (i.e. the average duration of the corporate investments). Obviously in order to obtain more robust results we must increase the sample size and the length of the time series.

Normal					
All	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.008	(0.000)	1.179	(0.346)	0.004
Dec-07	0.009	(0.000)	1.186	(0.306)	0.004
Jan-08	0.008	(0.000)	0.970	(0.854)	0.003
Feb-08	0.006	(0.000)	0.759	(0.068)	0.002
Mar-08	0.007	(0.000)	0.860	(0.246)	0.003
Apr-08	0.004	(0.000)	0.185	(0.000)	0.000
May-08	0.003	(0.000)	0.142	(0.000)	0.000
Jun-08	0.003	(0.000)	0.127	(0.000)	0.000
Jul-08	0.003	(0.000)	0.132	(0.000)	0.000
Aug-08	0.002	(0.000)	-0.041	(0.000)	0.000
Sep-08	0.002	(0.000)	-0.060	(0.000)	0.000
Oct-08	0.003	(0.000)	0.383	(0.000)	0.005
Nov-08	0.003	(0.000)	0.393	(0.000)	0.008
Dec-08	0.002	(0.000)	0.300	(0.000)	0.006
Jan-09	0.001	(0.000)	0.029	(0.000)	0.001

Normal Inverse Gaussian					
All	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.008	(0.000)	1.139	(0.452)	0.004
Dec-07	0.008	(0.000)	1.144	(0.414)	0.004
Jan-08	0.008	(0.000)	0.939	(0.702)	0.003
Feb-08	0.006	(0.000)	0.737	(0.041)	0.002
Mar-08	0.007	(0.000)	0.836	(0.163)	0.003
Apr-08	0.004	(0.000)	0.180	(0.000)	0.000
May-08	0.003	(0.000)	0.141	(0.000)	0.000
Jun-08	0.003	(0.000)	0.126	(0.000)	0.000
Jul-08	0.003	(0.000)	0.129	(0.000)	0.000
Aug-08	0.002	(0.000)	-0.040	(0.000)	0.000
Sep-08	0.002	(0.000)	-0.058	(0.000)	0.000
Oct-08	0.003	(0.000)	0.380	(0.000)	0.005
Nov-08	0.003	(0.000)	0.392	(0.000)	0.008
Dec-08	0.002	(0.000)	0.305	(0.000)	0.007
Jan-09	0.001	(0.000)	0.047	(0.000)	0.001

Variance Gamma					
All	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	0.089	(0.000)	0.001
Dec-07	0.005	(0.000)	0.091	(0.000)	0.001
Jan-08	0.005	(0.000)	0.089	(0.000)	0.001
Feb-08	0.004	(0.000)	0.085	(0.000)	0.001
Mar-08	0.005	(0.000)	0.094	(0.000)	0.001
Apr-08	0.003	(0.000)	0.068	(0.000)	0.000
May-08	0.003	(0.000)	0.066	(0.000)	0.000
Jun-08	0.003	(0.000)	0.066	(0.000)	0.000
Jul-08	0.003	(0.000)	0.069	(0.000)	0.000
Aug-08	0.003	(0.000)	0.055	(0.000)	0.000
Sep-08	0.003	(0.000)	0.051	(0.000)	0.000
Oct-08	0.002	(0.000)	0.128	(0.000)	0.002
Nov-08	0.002	(0.000)	0.171	(0.000)	0.004
Dec-08	0.002	(0.000)	0.157	(0.000)	0.004
Jan-09	0.001	(0.000)	0.045	(0.000)	0.001

Table 6: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
All	β_E	p-value	Adj R^2
Nov-07	1.034	(0.900)	0.403
Dec-07	0.974	(0.918)	0.402
Jan-08	0.770	(0.259)	0.402
Feb-08	0.561	(0.007)	0.406
Mar-08	0.503	(0.001)	0.406
Apr-08	0.446	(0.000)	0.422
May-08	0.419	(0.000)	0.426
Jun-08	0.354	(0.000)	0.424
Jul-08	0.299	(0.000)	0.425
Aug-08	0.299	(0.000)	0.426
Sep-08	0.191	(0.000)	0.424
Oct-08	0.128	(0.000)	0.432
Nov-08	0.093	(0.000)	0.436
Dec-08	0.077	(0.000)	0.435
Jan-09	0.009	(0.000)	0.433

Normal Inverse Gaussian			
All	β_E	p-value	Adj R^2
Nov-07	1.001	(0.997)	0.403
Dec-07	0.943	(0.816)	0.402
Jan-08	0.747	(0.200)	0.402
Feb-08	0.545	(0.004)	0.406
Mar-08	0.489	(0.000)	0.406
Apr-08	0.435	(0.000)	0.422
May-08	0.409	(0.000)	0.426
Jun-08	0.347	(0.000)	0.424
Jul-08	0.293	(0.000)	0.425
Aug-08	0.293	(0.000)	0.426
Sep-08	0.189	(0.000)	0.424
Oct-08	0.128	(0.000)	0.432
Nov-08	0.093	(0.000)	0.436
Dec-08	0.079	(0.000)	0.435
Jan-09	0.014	(0.000)	0.433

Variance Gamma			
All	β_E	p-value	Adj R^2
Nov-07	0.044	(0.000)	0.401
Dec-07	0.044	(0.000)	0.401
Jan-08	0.044	(0.000)	0.400
Feb-08	0.041	(0.000)	0.405
Mar-08	0.042	(0.000)	0.405
Apr-08	0.043	(0.000)	0.421
May-08	0.043	(0.000)	0.425
Jun-08	0.042	(0.000)	0.424
Jul-08	0.043	(0.000)	0.424
Aug-08	0.043	(0.000)	0.426
Sep-08	0.039	(0.000)	0.423
Oct-08	0.039	(0.000)	0.432
Nov-08	0.040	(0.000)	0.436
Dec-08	0.040	(0.000)	0.435
Jan-09	0.014	(0.000)	0.433

Table 7: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

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A Tables for Different Rating Classes

Normal							
AAA	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.004	(0.000)	1.529	(0.634)	2.884	(0.008)	-0.0001
Dec-07	-0.004	(0.000)	1.598	(0.593)	2.579	(0.015)	-0.0008
Jan-08	-0.004	(0.000)	0.752	(0.805)	3.545	(0.009)	0.0016
Feb-08	-0.004	(0.000)	0.840	(0.866)	3.113	(0.001)	0.0005
Mar-08	-0.004	(0.000)	0.501	(0.489)	1.222	(0.221)	-0.0057
Apr-08	-0.004	(0.000)	0.749	(0.717)	0.881	(0.347)	-0.0058
May-08	-0.004	(0.000)	1.017	(0.977)	-0.525	(0.472)	-0.0054
Jun-08	-0.004	(0.000)	0.603	(0.433)	0.015	(0.984)	-0.0062
Jul-08	-0.004	(0.000)	0.658	(0.566)	0.023	(0.973)	-0.006
Aug-08	-0.004	(0.000)	0.768	(0.651)	-0.074	(0.880)	-0.0056
Sep-08	-0.004	(0.000)	0.803	(0.651)	-0.031	(0.931)	-0.0054
Oct-08	-0.002	(0.000)	0.831	(0.795)	-3.604	(0.005)	0.0146
Nov-08	-0.003	(0.000)	-2.281	(0.043)	-0.477	(0.772)	0.0046
Dec-08	-0.003	(0.000)	0.278	(0.074)	1.718	(0.172)	-0.0031
Jan-09	-0.003	(0.000)	1.505	(0.182)	1.562	(0.168)	0.0023

Normal Inverse Gaussian							
AAA	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.004	(0.000)	1.274	(0.799)	2.883	(0.007)	-0.0005
Dec-07	-0.004	(0.000)	1.378	(0.726)	2.580	(0.014)	-0.0011
Jan-08	-0.004	(0.000)	0.561	(0.650)	3.538	(0.009)	0.0014
Feb-08	-0.004	(0.000)	0.616	(0.675)	3.106	(0.001)	0.0003
Mar-08	-0.004	(0.000)	0.373	(0.391)	1.224	(0.220)	-0.0058
Apr-08	-0.004	(0.000)	0.617	(0.594)	0.880	(0.349)	-0.0059
May-08	-0.004	(0.000)	0.964	(0.954)	-0.509	(0.487)	-0.0053
Jun-08	-0.004	(0.000)	0.585	(0.440)	0.028	(0.970)	-0.0062
Jul-08	-0.004	(0.000)	0.652	(0.573)	0.037	(0.958)	-0.0059
Aug-08	-0.004	(0.000)	0.751	(0.647)	-0.063	(0.899)	-0.0055
Sep-08	-0.004	(0.000)	0.786	(0.652)	-0.019	(0.958)	-0.0053
Oct-08	-0.002	(0.000)	0.947	(0.940)	-3.548	(0.005)	0.0152
Nov-08	-0.003	(0.000)	-2.205	(0.032)	-0.511	(0.759)	0.0046
Dec-08	-0.003	(0.000)	0.330	(0.089)	1.739	(0.169)	-0.003
Jan-09	-0.003	(0.000)	1.498	(0.160)	1.598	(0.159)	0.0027

Variance Gamma							
AAA	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.004	(0.000)	1.551	(0.619)	2.884	(0.007)	0.000
Dec-07	-0.004	(0.000)	1.621	(0.578)	2.579	(0.015)	-0.001
Jan-08	-0.004	(0.000)	0.778	(0.827)	3.546	(0.008)	0.002
Feb-08	-0.004	(0.000)	0.866	(0.889)	3.114	(0.001)	0.001
Mar-08	-0.004	(0.000)	0.539	(0.528)	1.223	(0.220)	-0.006
Apr-08	-0.004	(0.000)	0.784	(0.757)	0.883	(0.345)	-0.006
May-08	-0.004	(0.000)	1.055	(0.928)	-0.522	(0.474)	-0.005
Jun-08	-0.004	(0.000)	0.635	(0.477)	0.020	(0.978)	-0.006
Jul-08	-0.004	(0.000)	0.687	(0.604)	0.027	(0.969)	-0.006
Aug-08	-0.004	(0.000)	0.798	(0.697)	-0.071	(0.884)	-0.006
Sep-08	-0.004	(0.000)	0.833	(0.702)	-0.029	(0.935)	-0.005
Oct-08	-0.002	(0.000)	0.859	(0.832)	-3.597	(0.005)	0.015
Nov-08	-0.003	(0.000)	-2.265	(0.045)	-0.465	(0.778)	0.004
Dec-08	-0.003	(0.000)	0.297	(0.082)	1.722	(0.171)	-0.003
Jan-09	-0.003	(0.000)	1.524	(0.164)	1.565	(0.167)	0.002

Table 8: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period of time (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
AAA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.009	(0.000)	3.598	(0.000)	0.025
Dec-07	0.008	(0.000)	3.402	(0.000)	0.022
Jan-08	0.009	(0.000)	3.476	(0.000)	0.023
Feb-08	0.008	(0.000)	3.197	(0.000)	0.021
Mar-08	0.003	(0.042)	1.965	(0.017)	0.007
Apr-08	0.003	(0.096)	1.842	(0.044)	0.006
May-08	0.000	(0.805)	1.289	(0.430)	0.001
Jun-08	0.001	(0.576)	1.335	(0.274)	0.002
Jul-08	0.000	(0.812)	1.242	(0.500)	0.002
Aug-08	0.000	(0.962)	1.182	(0.502)	0.002
Sep-08	0.000	(0.734)	1.088	(0.645)	0.001
Oct-08	-0.005	(0.015)	0.005	(0.030)	-0.003
Nov-08	-0.003	(0.455)	0.120	(0.355)	-0.003
Dec-08	0.004	(0.043)	2.029	(0.055)	0.013
Jan-09	0.005	(0.001)	2.468	(0.000)	0.024

Normal Inverse Gaussian					
AAA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.009	(0.000)	3.331	(0.000)	0.023
Dec-07	0.008	(0.000)	3.176	(0.000)	0.020
Jan-08	0.008	(0.000)	3.201	(0.000)	0.021
Feb-08	0.007	(0.000)	2.961	(0.000)	0.019
Mar-08	0.003	(0.088)	1.845	(0.048)	0.006
Apr-08	0.002	(0.164)	1.749	(0.099)	0.006
May-08	0.000	(0.815)	1.285	(0.471)	0.001
Jun-08	0.001	(0.614)	1.320	(0.338)	0.002
Jul-08	0.000	(0.829)	1.235	(0.551)	0.002
Aug-08	0.000	(0.973)	1.175	(0.575)	0.002
Sep-08	0.000	(0.762)	1.087	(0.693)	0.002
Oct-08	-0.004	(0.018)	0.136	(0.044)	-0.003
Nov-08	-0.003	(0.429)	0.066	(0.324)	-0.003
Dec-08	0.004	(0.049)	1.994	(0.061)	0.013
Jan-09	0.005	(0.001)	2.437	(0.000)	0.024

Variance Gamma					
AAA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.009	(0.000)	3.609	(0.000)	0.025
Dec-07	0.008	(0.000)	3.413	(0.000)	0.022
Jan-08	0.009	(0.000)	3.488	(0.000)	0.024
Feb-08	0.008	(0.000)	3.208	(0.000)	0.021
Mar-08	0.003	(0.037)	1.979	(0.014)	0.007
Apr-08	0.003	(0.088)	1.855	(0.040)	0.006
May-08	0.000	(0.781)	1.302	(0.405)	0.001
Jun-08	0.001	(0.549)	1.348	(0.251)	0.002
Jul-08	0.000	(0.792)	1.254	(0.479)	0.002
Aug-08	0.000	(0.937)	1.193	(0.476)	0.002
Sep-08	0.000	(0.760)	1.098	(0.596)	0.001
Oct-08	-0.005	(0.016)	0.015	(0.032)	-0.003
Nov-08	-0.002	(0.468)	0.143	(0.368)	-0.003
Dec-08	0.004	(0.041)	2.048	(0.051)	0.014
Jan-09	0.005	(0.001)	2.485	(0.000)	0.024

Table 9: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E\Big(h_{E_{j,t}} r_{E_{j,t}} - rf\Big) + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the coefficient of determination adjusted.

Normal			
AAA	β_E	p-value	Adj R^2
Nov-07	1.560	(0.009)	0.618
Dec-07	1.530	(0.016)	0.614
Jan-08	0.515	(0.409)	0.589
Feb-08	0.573	(0.466)	0.578
Mar-08	0.730	(0.654)	0.568
Apr-08	0.921	(0.898)	0.564
May-08	0.643	(0.547)	0.567
Jun-08	0.812	(0.747)	0.565
Jul-08	0.893	(0.865)	0.560
Aug-08	1.074	(0.903)	0.549
Sep-08	1.089	(0.896)	0.541
Oct-08	-2.503	(0.000)	0.529
Nov-08	-2.615	(0.001)	0.624
Dec-08	-1.344	(0.054)	0.609
Jan-09	0.017	(0.469)	0.598

Normal Inverse Gaussian			
AAA	β_E	p-value	Adj R^2
Nov-07	1.653	(0.001)	0.618
Dec-07	1.667	(0.001)	0.615
Jan-08	0.568	(0.370)	0.589
Feb-08	0.552	(0.370)	0.578
Mar-08	0.715	(0.563)	0.568
Apr-08	0.928	(0.897)	0.564
May-08	0.740	(0.596)	0.567
Jun-08	0.891	(0.824)	0.565
Jul-08	0.996	(0.994)	0.561
Aug-08	1.177	(0.738)	0.549
Sep-08	1.190	(0.759)	0.541
Oct-08	-2.295	(0.001)	0.527
Nov-08	-2.477	(0.001)	0.623
Dec-08	-1.209	(0.066)	0.608
Jan-09	0.123	(0.506)	0.598

Variance Gamma			
AAA	β_E	p-value	Adj R^2
Nov-07	1.581	(0.009)	0.618
Dec-07	1.553	(0.015)	0.614
Jan-08	0.537	(0.443)	0.589
Feb-08	0.595	(0.502)	0.578
Mar-08	0.764	(0.693)	0.568
Apr-08	0.953	(0.939)	0.564
May-08	0.681	(0.587)	0.566
Jun-08	0.842	(0.784)	0.565
Jul-08	0.920	(0.898)	0.560
Aug-08	1.103	(0.864)	0.549
Sep-08	1.119	(0.858)	0.541
Oct-08	-2.474	(0.000)	0.528
Nov-08	-2.607	(0.001)	0.624
Dec-08	-1.329	(0.056)	0.609
Jan-09	0.035	(0.478)	0.598

Table 10: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E\Big(h_{E_{j,t}} r_{E_{j,t}} - rf\Big) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
AAA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.001	(0.818)	38.227	(0.016)	0.106
Dec-07	0.001	(0.660)	37.917	(0.016)	0.105
Jan-08	0.002	(0.567)	36.867	(0.013)	0.102
Feb-08	0.001	(0.625)	36.920	(0.012)	0.103
Mar-08	0.002	(0.599)	34.598	(0.009)	0.095
Apr-08	0.001	(0.627)	34.127	(0.004)	0.097
May-08	0.001	(0.540)	33.392	(0.003)	0.096
Jun-08	0.002	(0.068)	26.221	(0.000)	0.074
Jul-08	0.002	(0.108)	25.608	(0.000)	0.073
Aug-08	0.002	(0.096)	25.383	(0.000)	0.072
Sep-08	0.001	(0.257)	23.681	(0.000)	0.066
Oct-08	0.002	(0.002)	12.145	(0.009)	0.037
Nov-08	0.002	(0.001)	10.961	(0.004)	0.037
Dec-08	0.001	(0.006)	8.696	(0.015)	0.028
Jan-09	0.001	(0.000)	6.431	(0.034)	0.021

Normal Inverse Gaussian					
AAA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.001	(0.735)	33.048	(0.034)	0.093
Dec-07	0.002	(0.568)	32.738	(0.033)	0.092
Jan-08	0.002	(0.476)	31.828	(0.030)	0.089
Feb-08	0.002	(0.512)	31.827	(0.028)	0.090
Mar-08	0.002	(0.486)	29.895	(0.024)	0.083
Apr-08	0.002	(0.514)	29.667	(0.016)	0.085
May-08	0.002	(0.413)	29.113	(0.012)	0.085
Jun-08	0.002	(0.038)	23.536	(0.002)	0.067
Jul-08	0.002	(0.064)	23.012	(0.002)	0.067
Aug-08	0.002	(0.058)	22.787	(0.002)	0.066
Sep-08	0.002	(0.182)	21.385	(0.002)	0.061
Oct-08	0.002	(0.001)	11.729	(0.007)	0.037
Nov-08	0.002	(0.001)	10.548	(0.003)	0.036
Dec-08	0.001	(0.003)	8.310	(0.017)	0.027
Jan-09	0.001	(0.000)	6.177	(0.039)	0.020

Variance Gamma					
AAA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.001	(0.816)	38.444	(0.016)	0.108
Dec-07	0.001	(0.657)	38.137	(0.015)	0.106
Jan-08	0.002	(0.565)	37.085	(0.012)	0.103
Feb-08	0.001	(0.623)	37.136	(0.012)	0.104
Mar-08	0.002	(0.596)	34.794	(0.008)	0.096
Apr-08	0.001	(0.623)	34.306	(0.004)	0.098
May-08	0.001	(0.536)	33.572	(0.003)	0.096
Jun-08	0.002	(0.067)	26.418	(0.000)	0.074
Jul-08	0.002	(0.108)	25.804	(0.000)	0.074
Aug-08	0.002	(0.096)	25.577	(0.000)	0.073
Sep-08	0.001	(0.256)	23.871	(0.000)	0.066
Oct-08	0.002	(0.002)	12.261	(0.010)	0.038
Nov-08	0.002	(0.001)	11.067	(0.004)	0.037
Dec-08	0.001	(0.006)	8.782	(0.015)	0.028
Jan-09	0.001	(0.000)	6.508	(0.035)	0.021

Table 11: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. TThe last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
AAA	β_E	p-value	Adj R^2
Nov-07	37.634	(0.000)	0.274
Dec-07	37.514	(0.000)	0.274
Jan-08	35.887	(0.000)	0.270
Feb-08	35.709	(0.000)	0.271
Mar-08	31.895	(0.000)	0.262
Apr-08	30.467	(0.000)	0.264
May-08	29.479	(0.000)	0.263
Jun-08	22.236	(0.000)	0.247
Jul-08	21.466	(0.000)	0.246
Aug-08	21.102	(0.000)	0.246
Sep-08	19.098	(0.000)	0.241
Oct-08	8.026	(0.060)	0.225
Nov-08	7.244	(0.039)	0.225
Dec-08	6.079	(0.032)	0.223
Jan-09	4.927	(0.038)	0.221

Normal Inverse Gaussian			
AAA	β_E	p-value	Adj R^2
Nov-07	32.811	(0.001)	0.263
Dec-07	32.709	(0.001)	0.263
Jan-08	31.177	(0.001)	0.260
Feb-08	30.901	(0.001)	0.261
Mar-08	27.535	(0.000)	0.253
Apr-08	26.408	(0.000)	0.255
May-08	25.700	(0.000)	0.254
Jun-08	20.128	(0.000)	0.242
Jul-08	19.412	(0.000)	0.242
Aug-08	19.056	(0.000)	0.241
Sep-08	17.273	(0.000)	0.237
Oct-08	7.695	(0.057)	0.224
Nov-08	6.924	(0.037)	0.225
Dec-08	5.760	(0.035)	0.222
Jan-09	4.670	(0.041)	0.220

Variance Gamma			
AAA	β_E	p-value	Adj R^2
Nov-07	37.905	(0.000)	0.275
Dec-07	37.786	(0.000)	0.275
Jan-08	36.150	(0.000)	0.271
Feb-08	35.968	(0.000)	0.272
Mar-08	32.117	(0.000)	0.263
Apr-08	30.665	(0.000)	0.265
May-08	29.679	(0.000)	0.263
Jun-08	22.443	(0.000)	0.248
Jul-08	21.674	(0.000)	0.247
Aug-08	21.308	(0.000)	0.246
Sep-08	19.293	(0.000)	0.241
Oct-08	8.125	(0.060)	0.225
Nov-08	7.333	(0.038)	0.226
Dec-08	6.148	(0.032)	0.223
Jan-09	4.986	(0.036)	0.221

Table 12: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of the time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal							
AA	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	0.402	(0.194)	3.538	(0.000)	0.0051
Dec-07	-0.005	(0.000)	0.476	(0.242)	3.137	(0.000)	0.0037
Jan-08	-0.005	(0.000)	-0.332	(0.000)	4.060	(0.000)	0.0082
Feb-08	-0.005	(0.000)	-0.287	(0.000)	3.361	(0.000)	0.0055
Mar-08	-0.005	(0.000)	-0.173	(0.000)	2.942	(0.000)	0.0042
Apr-08	-0.005	(0.000)	-0.173	(0.000)	2.513	(0.000)	0.0031
May-08	-0.005	(0.000)	-0.168	(0.000)	0.868	(0.005)	-0.0021
Jun-08	-0.005	(0.000)	-0.218	(0.000)	1.138	(0.003)	-0.0012
Jul-08	-0.005	(0.000)	-0.216	(0.000)	0.897	(0.005)	-0.0015
Aug-08	-0.005	(0.000)	-0.012	(0.001)	1.657	(0.000)	0.0003
Sep-08	-0.005	(0.000)	-0.178	(0.000)	0.960	(0.001)	-0.0012
Oct-08	-0.003	(0.000)	1.406	(0.531)	-2.931	(0.000)	0.0356
Nov-08	-0.004	(0.000)	-0.718	(0.001)	-0.921	(0.252)	0.0028
Dec-08	-0.004	(0.000)	0.281	(0.009)	1.482	(0.000)	0
Jan-09	-0.004	(0.000)	0.598	(0.220)	0.847	(0.045)	0.0032

Normal Inverse Gaussian							
AA	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	0.401	(0.183)	3.539	(0.000)	0.0051
Dec-07	-0.005	(0.000)	0.472	(0.228)	3.140	(0.000)	0.0037
Jan-08	-0.005	(0.000)	-0.321	(0.000)	4.058	(0.000)	0.0082
Feb-08	-0.005	(0.000)	-0.278	(0.000)	3.359	(0.000)	0.0054
Mar-08	-0.005	(0.000)	-0.170	(0.000)	2.942	(0.000)	0.0043
Apr-08	-0.005	(0.000)	-0.168	(0.000)	2.513	(0.000)	0.0031
May-08	-0.005	(0.000)	-0.162	(0.000)	0.868	(0.005)	-0.0021
Jun-08	-0.005	(0.000)	-0.211	(0.000)	1.137	(0.003)	-0.0012
Jul-08	-0.005	(0.000)	-0.210	(0.000)	0.897	(0.005)	-0.0015
Aug-08	-0.005	(0.000)	-0.010	(0.001)	1.657	(0.000)	0.0003
Sep-08	-0.005	(0.000)	-0.169	(0.000)	0.962	(0.001)	-0.0012
Oct-08	-0.003	(0.000)	1.387	(0.542)	-2.914	(0.000)	0.0359
Nov-08	-0.004	(0.000)	-0.697	(0.001)	-0.917	(0.254)	0.0026
Dec-08	-0.004	(0.000)	0.282	(0.008)	1.489	(0.000)	0
Jan-09	-0.004	(0.000)	0.595	(0.211)	0.861	(0.042)	0.0034

Variance Gamma							
AA	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	0.425	(0.218)	3.534	(0.000)	0.005
Dec-07	-0.005	(0.000)	0.500	(0.270)	3.134	(0.000)	0.004
Jan-08	-0.005	(0.000)	-0.322	(0.000)	4.060	(0.000)	0.008
Feb-08	-0.005	(0.000)	-0.278	(0.000)	3.362	(0.000)	0.005
Mar-08	-0.005	(0.000)	-0.167	(0.000)	2.945	(0.000)	0.004
Apr-08	-0.005	(0.000)	-0.165	(0.000)	2.516	(0.000)	0.003
May-08	-0.005	(0.000)	-0.160	(0.000)	0.871	(0.005)	-0.002
Jun-08	-0.005	(0.000)	-0.210	(0.000)	1.140	(0.003)	-0.001
Jul-08	-0.005	(0.000)	-0.210	(0.000)	0.900	(0.005)	-0.002
Aug-08	-0.005	(0.000)	-0.005	(0.001)	1.659	(0.000)	0.000
Sep-08	-0.005	(0.000)	-0.172	(0.000)	0.963	(0.001)	-0.001
Oct-08	-0.003	(0.000)	1.427	(0.512)	-2.908	(0.000)	0.036
Nov-08	-0.003	(0.000)	-0.706	(0.001)	-0.911	(0.260)	0.003
Dec-08	-0.004	(0.000)	0.289	(0.010)	1.490	(0.000)	0.000
Jan-09	-0.004	(0.000)	0.610	(0.239)	0.863	(0.043)	0.003

Table 13: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
AA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.002	(0.389)	1.605	(0.274)	0.012
Dec-07	0.001	(0.564)	1.549	(0.305)	0.011
Jan-08	-0.002	(0.284)	0.634	(0.419)	0.001
Feb-08	-0.002	(0.213)	0.596	(0.355)	0.001
Mar-08	-0.002	(0.092)	0.493	(0.201)	0.001
Apr-08	-0.002	(0.071)	0.462	(0.174)	0.000
May-08	-0.003	(0.003)	0.315	(0.056)	-0.001
Jun-08	-0.003	(0.005)	0.301	(0.051)	-0.001
Jul-08	-0.004	(0.001)	0.220	(0.015)	-0.001
Aug-08	-0.002	(0.028)	0.477	(0.126)	0.001
Sep-08	-0.003	(0.000)	0.222	(0.010)	-0.001
Oct-08	-0.001	(0.594)	1.445	(0.419)	0.019
Nov-08	-0.005	(0.012)	-0.319	(0.024)	0.000
Dec-08	-0.001	(0.359)	0.641	(0.292)	0.005
Jan-09	-0.001	(0.562)	0.870	(0.732)	0.011

Normal Inverse Gaussian					
AA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.001	(0.423)	1.564	(0.294)	0.012
Dec-07	0.001	(0.609)	1.509	(0.327)	0.010
Jan-08	-0.002	(0.232)	0.600	(0.360)	0.001
Feb-08	-0.002	(0.172)	0.565	(0.303)	0.001
Mar-08	-0.002	(0.070)	0.467	(0.165)	0.000
Apr-08	-0.002	(0.054)	0.439	(0.144)	0.000
May-08	-0.003	(0.002)	0.300	(0.046)	-0.001
Jun-08	-0.003	(0.003)	0.285	(0.040)	-0.001
Jul-08	-0.004	(0.000)	0.206	(0.011)	-0.001
Aug-08	-0.002	(0.021)	0.458	(0.104)	0.001
Sep-08	-0.003	(0.000)	0.214	(0.008)	-0.001
Oct-08	-0.001	(0.584)	1.440	(0.420)	0.020
Nov-08	-0.005	(0.011)	-0.312	(0.021)	0.000
Dec-08	-0.001	(0.335)	0.630	(0.271)	0.005
Jan-09	-0.001	(0.541)	0.859	(0.708)	0.011

Variance Gamma					
AA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.002	(0.370)	1.630	(0.260)	0.012
Dec-07	0.001	(0.538)	1.572	(0.289)	0.011
Jan-08	-0.002	(0.302)	0.645	(0.438)	0.001
Feb-08	-0.002	(0.227)	0.607	(0.373)	0.001
Mar-08	-0.002	(0.097)	0.500	(0.210)	0.001
Apr-08	-0.002	(0.076)	0.470	(0.183)	0.000
May-08	-0.003	(0.004)	0.322	(0.061)	-0.001
Jun-08	-0.003	(0.005)	0.308	(0.054)	-0.001
Jul-08	-0.003	(0.001)	0.226	(0.016)	-0.001
Aug-08	-0.002	(0.030)	0.483	(0.132)	0.001
Sep-08	-0.003	(0.001)	0.228	(0.011)	-0.001
Oct-08	-0.001	(0.628)	1.467	(0.400)	0.020
Nov-08	-0.005	(0.013)	-0.307	(0.026)	0.000
Dec-08	-0.001	(0.377)	0.649	(0.306)	0.006
Jan-09	-0.001	(0.589)	0.881	(0.756)	0.012

Table 14: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
AA	β_E	p-value	Adj R^2
Nov-07	0.136	(0.080)	0.605
Dec-07	0.134	(0.078)	0.598
Jan-08	-0.204	(0.001)	0.597
Feb-08	-0.182	(0.001)	0.584
Mar-08	-0.113	(0.003)	0.581
Apr-08	-0.122	(0.003)	0.574
May-08	-0.154	(0.002)	0.576
Jun-08	-0.214	(0.001)	0.572
Jul-08	-0.236	(0.000)	0.567
Aug-08	-0.217	(0.000)	0.563
Sep-08	-0.498	(0.000)	0.554
Oct-08	-0.113	(0.014)	0.607
Nov-08	-0.199	(0.004)	0.645
Dec-08	-0.215	(0.000)	0.647
Jan-09	0.006	(0.000)	0.636

Normal Inverse Gaussian			
AA	β_E	p-value	Adj R^2
Nov-07	0.126	(0.074)	0.605
Dec-07	0.122	(0.072)	0.598
Jan-08	-0.205	(0.001)	0.597
Feb-08	-0.184	(0.001)	0.584
Mar-08	-0.116	(0.002)	0.581
Apr-08	-0.123	(0.002)	0.574
May-08	-0.155	(0.002)	0.576
Jun-08	-0.214	(0.001)	0.572
Jul-08	-0.236	(0.000)	0.567
Aug-08	-0.219	(0.000)	0.563
Sep-08	-0.487	(0.000)	0.554
Oct-08	-0.118	(0.012)	0.607
Nov-08	-0.203	(0.003)	0.645
Dec-08	-0.217	(0.000)	0.647
Jan-09	0.000	(0.000)	0.636

Variance Gamma			
AA	β_E	p-value	Adj R^2
Nov-07	0.156	(0.090)	0.605
Dec-07	0.154	(0.088)	0.598
Jan-08	-0.190	(0.001)	0.597
Feb-08	-0.168	(0.002)	0.584
Mar-08	-0.103	(0.003)	0.580
Apr-08	-0.110	(0.003)	0.573
May-08	-0.143	(0.002)	0.576
Jun-08	-0.203	(0.001)	0.572
Jul-08	-0.228	(0.000)	0.567
Aug-08	-0.209	(0.000)	0.563
Sep-08	-0.490	(0.000)	0.554
Oct-08	-0.104	(0.016)	0.607
Nov-08	-0.193	(0.005)	0.645
Dec-08	-0.212	(0.000)	0.647
Jan-09	0.015	(0.000)	0.636

Table 15: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
AA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.003	(0.000)	0.760	(0.495)	-0.001
Dec-07	0.003	(0.000)	0.713	(0.405)	-0.001
Jan-08	0.003	(0.000)	0.755	(0.463)	0.000
Feb-08	0.003	(0.000)	0.818	(0.577)	0.001
Mar-08	0.003	(0.000)	0.753	(0.341)	0.001
Apr-08	0.002	(0.000)	0.881	(0.721)	0.002
May-08	0.002	(0.000)	0.977	(0.947)	0.003
Jun-08	0.002	(0.000)	0.995	(0.990)	0.003
Jul-08	0.002	(0.000)	0.771	(0.573)	0.002
Aug-08	0.002	(0.000)	0.502	(0.161)	0.000
Sep-08	0.002	(0.000)	0.377	(0.058)	-0.001
Oct-08	0.001	(0.000)	1.081	(0.846)	0.007
Nov-08	0.001	(0.001)	1.257	(0.509)	0.016
Dec-08	0.000	(0.160)	0.701	(0.387)	0.006
Jan-09	0.000	(0.111)	0.618	(0.192)	0.005

Normal Inverse Gaussian					
AA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.003	(0.000)	0.769	(0.502)	-0.001
Dec-07	0.003	(0.000)	0.724	(0.412)	-0.001
Jan-08	0.003	(0.000)	0.752	(0.445)	0.000
Feb-08	0.003	(0.000)	0.812	(0.552)	0.001
Mar-08	0.003	(0.000)	0.749	(0.321)	0.001
Apr-08	0.002	(0.000)	0.877	(0.707)	0.002
May-08	0.002	(0.000)	0.973	(0.937)	0.003
Jun-08	0.002	(0.000)	0.990	(0.977)	0.003
Jul-08	0.002	(0.000)	0.769	(0.564)	0.002
Aug-08	0.002	(0.000)	0.504	(0.153)	0.000
Sep-08	0.002	(0.000)	0.380	(0.054)	-0.001
Oct-08	0.001	(0.000)	1.071	(0.862)	0.007
Nov-08	0.001	(0.001)	1.247	(0.520)	0.016
Dec-08	0.000	(0.159)	0.703	(0.386)	0.007
Jan-09	0.000	(0.110)	0.618	(0.185)	0.006

Variance Gamma					
AA	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.003	(0.000)	0.779	(0.532)	-0.001
Dec-07	0.003	(0.000)	0.731	(0.439)	-0.001
Jan-08	0.003	(0.000)	0.765	(0.483)	0.000
Feb-08	0.003	(0.000)	0.828	(0.598)	0.001
Mar-08	0.003	(0.000)	0.765	(0.366)	0.001
Apr-08	0.002	(0.000)	0.899	(0.763)	0.002
May-08	0.002	(0.000)	0.995	(0.988)	0.003
Jun-08	0.002	(0.000)	1.013	(0.972)	0.003
Jul-08	0.002	(0.000)	0.788	(0.606)	0.002
Aug-08	0.002	(0.000)	0.517	(0.177)	0.000
Sep-08	0.002	(0.000)	0.390	(0.066)	-0.001
Oct-08	0.001	(0.000)	1.096	(0.819)	0.007
Nov-08	0.001	(0.001)	1.271	(0.489)	0.016
Dec-08	0.000	(0.157)	0.713	(0.411)	0.007
Jan-09	0.000	(0.109)	0.626	(0.202)	0.006

Table 16: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
AA	β_E	p-value	Adj R^2
Nov-07	0.000	(0.021)	0.761
Dec-07	0.010	(0.020)	0.755
Jan-08	0.150	(0.035)	0.754
Feb-08	0.047	(0.017)	0.754
Mar-08	0.423	(0.056)	0.748
Apr-08	0.412	(0.045)	0.755
May-08	0.428	(0.052)	0.755
Jun-08	0.438	(0.070)	0.750
Jul-08	0.427	(0.074)	0.750
Aug-08	0.423	(0.066)	0.749
Sep-08	0.300	(0.029)	0.743
Oct-08	0.396	(0.030)	0.747
Nov-08	0.216	(0.002)	0.746
Dec-08	0.006	(0.001)	0.739
Jan-09	0.002	(0.001)	0.737

Normal Inverse Gaussian			
AA	β_E	p-value	Adj R^2
Nov-07	-0.014	(0.016)	0.761
Dec-07	-0.003	(0.016)	0.755
Jan-08	0.137	(0.028)	0.754
Feb-08	0.035	(0.013)	0.754
Mar-08	0.405	(0.043)	0.748
Apr-08	0.394	(0.034)	0.755
May-08	0.410	(0.040)	0.755
Jun-08	0.419	(0.055)	0.750
Jul-08	0.409	(0.059)	0.750
Aug-08	0.404	(0.051)	0.749
Sep-08	0.285	(0.022)	0.743
Oct-08	0.382	(0.023)	0.746
Nov-08	0.212	(0.002)	0.746
Dec-08	0.008	(0.001)	0.739
Jan-09	0.003	(0.000)	0.737

Variance Gamma			
AA	β_E	p-value	Adj R^2
Nov-07	0.001	(0.021)	0.761
Dec-07	0.011	(0.020)	0.755
Jan-08	0.150	(0.035)	0.754
Feb-08	0.047	(0.017)	0.754
Mar-08	0.425	(0.056)	0.748
Apr-08	0.414	(0.044)	0.755
May-08	0.431	(0.052)	0.755
Jun-08	0.440	(0.070)	0.750
Jul-08	0.428	(0.074)	0.750
Aug-08	0.424	(0.065)	0.749
Sep-08	0.301	(0.029)	0.743
Oct-08	0.397	(0.029)	0.747
Nov-08	0.221	(0.002)	0.746
Dec-08	0.009	(0.001)	0.739
Jan-09	0.004	(0.001)	0.737

Table 17: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal							
A	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-1.647	(0.000)	3.271	(0.000)	0.0142
Dec-07	-0.005	(0.000)	-1.630	(0.000)	2.812	(0.000)	0.0125
Jan-08	-0.005	(0.000)	-1.440	(0.000)	3.102	(0.000)	0.013
Feb-08	-0.005	(0.000)	-1.288	(0.000)	2.627	(0.000)	0.0108
Mar-08	-0.005	(0.000)	-1.240	(0.000)	1.391	(0.000)	0.0074
Apr-08	-0.005	(0.000)	-1.066	(0.000)	1.061	(0.000)	0.0055
May-08	-0.005	(0.000)	-0.882	(0.000)	-0.037	(0.857)	0.0032
Jun-08	-0.005	(0.000)	-0.818	(0.000)	-0.041	(0.849)	0.0037
Jul-08	-0.005	(0.000)	-0.624	(0.000)	-0.560	(0.009)	0.0024
Aug-08	-0.005	(0.000)	-0.551	(0.000)	0.160	(0.350)	0.0019
Sep-08	-0.004	(0.000)	0.668	(0.108)	-1.870	(0.000)	0.0104
Oct-08	-0.003	(0.000)	2.256	(0.000)	-5.083	(0.000)	0.1292
Nov-08	-0.003	(0.000)	0.381	(0.021)	-3.347	(0.000)	0.0148
Dec-08	-0.003	(0.000)	0.967	(0.870)	-0.920	(0.006)	0.0214
Jan-09	-0.003	(0.000)	0.882	(0.518)	-1.429	(0.000)	0.021

Normal Inverse Gaussian							
A	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-1.606	(0.000)	3.268	(0.000)	0.0143
Dec-07	-0.005	(0.000)	-1.592	(0.000)	2.811	(0.000)	0.0127
Jan-08	-0.005	(0.000)	-1.415	(0.000)	3.098	(0.000)	0.0132
Feb-08	-0.005	(0.000)	-1.268	(0.000)	2.628	(0.000)	0.0111
Mar-08	-0.005	(0.000)	-1.219	(0.000)	1.390	(0.000)	0.0077
Apr-08	-0.005	(0.000)	-1.055	(0.000)	1.062	(0.000)	0.0058
May-08	-0.005	(0.000)	-0.878	(0.000)	-0.034	(0.866)	0.0034
Jun-08	-0.005	(0.000)	-0.812	(0.000)	-0.042	(0.846)	0.0039
Jul-08	-0.005	(0.000)	-0.620	(0.000)	-0.564	(0.009)	0.0025
Aug-08	-0.005	(0.000)	-0.548	(0.000)	0.156	(0.364)	0.002
Sep-08	-0.004	(0.000)	0.642	(0.075)	-1.873	(0.000)	0.0103
Oct-08	-0.003	(0.000)	2.194	(0.000)	-5.092	(0.000)	0.1278
Nov-08	-0.003	(0.000)	0.370	(0.016)	-3.353	(0.000)	0.0147
Dec-08	-0.004	(0.000)	0.946	(0.782)	-0.922	(0.007)	0.0211
Jan-09	-0.003	(0.000)	0.865	(0.454)	-1.426	(0.000)	0.0208

Variance Gamma							
A	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-1.406	(0.000)	3.157	(0.000)	0.009
Dec-07	-0.005	(0.000)	-1.418	(0.000)	2.701	(0.000)	0.008
Jan-08	-0.005	(0.000)	-1.154	(0.000)	3.087	(0.000)	0.008
Feb-08	-0.005	(0.000)	-1.004	(0.000)	2.590	(0.000)	0.007
Mar-08	-0.005	(0.000)	-0.954	(0.000)	1.387	(0.000)	0.003
Apr-08	-0.005	(0.000)	-0.789	(0.000)	0.947	(0.000)	0.002
May-08	-0.005	(0.000)	-0.642	(0.000)	-0.106	(0.589)	0.001
Jun-08	-0.005	(0.000)	-0.699	(0.000)	-0.025	(0.907)	0.001
Jul-08	-0.005	(0.000)	-0.461	(0.000)	-0.496	(0.018)	0.000
Aug-08	-0.005	(0.000)	-0.417	(0.000)	0.203	(0.211)	0.000
Sep-08	-0.004	(0.000)	0.954	(0.861)	-1.797	(0.000)	0.012
Oct-08	-0.003	(0.000)	2.373	(0.000)	-5.354	(0.000)	0.114
Nov-08	-0.003	(0.000)	-0.017	(0.000)	-4.016	(0.000)	0.012
Dec-08	-0.003	(0.000)	0.745	(0.268)	-1.337	(0.009)	0.012
Jan-09	-0.003	(0.000)	0.671	(0.115)	-1.835	(0.000)	0.013

Table 18: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
A	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.003	(0.001)	0.237	(0.002)	0.000
Dec-07	-0.004	(0.000)	0.056	(0.000)	0.000
Jan-08	-0.004	(0.000)	0.147	(0.001)	0.000
Feb-08	-0.004	(0.000)	0.102	(0.000)	0.000
Mar-08	-0.005	(0.000)	-0.126	(0.000)	0.000
Apr-08	-0.005	(0.000)	-0.125	(0.000)	0.000
May-08	-0.005	(0.000)	-0.206	(0.000)	0.000
Jun-08	-0.006	(0.000)	-0.272	(0.000)	0.000
Jul-08	-0.006	(0.000)	-0.231	(0.000)	0.000
Aug-08	-0.005	(0.000)	-0.103	(0.000)	0.000
Sep-08	-0.003	(0.000)	0.697	(0.120)	0.006
Oct-08	0.001	(0.528)	2.375	(0.000)	0.081
Nov-08	-0.003	(0.000)	0.653	(0.186)	0.007
Dec-08	-0.001	(0.247)	1.175	(0.368)	0.028
Jan-09	-0.001	(0.020)	1.076	(0.671)	0.024

Normal Inverse Gaussian					
A	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.003	(0.000)	0.170	(0.001)	0.000
Dec-07	-0.004	(0.000)	-0.004	(0.000)	0.000
Jan-08	-0.004	(0.000)	0.083	(0.000)	0.000
Feb-08	-0.004	(0.000)	0.041	(0.000)	0.000
Mar-08	-0.005	(0.000)	-0.167	(0.000)	0.000
Apr-08	-0.005	(0.000)	-0.159	(0.000)	0.000
May-08	-0.005	(0.000)	-0.233	(0.000)	0.000
Jun-08	-0.006	(0.000)	-0.292	(0.000)	0.000
Jul-08	-0.006	(0.000)	-0.246	(0.000)	0.000
Aug-08	-0.005	(0.000)	-0.122	(0.000)	0.000
Sep-08	-0.003	(0.000)	0.678	(0.092)	0.006
Oct-08	0.001	(0.626)	2.327	(0.000)	0.080
Nov-08	-0.003	(0.000)	0.640	(0.160)	0.007
Dec-08	-0.001	(0.188)	1.150	(0.433)	0.027
Jan-09	-0.001	(0.014)	1.057	(0.747)	0.024

Variance Gamma					
A	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.001	(0.651)	1.285	(0.442)	0.004
Dec-07	-0.001	(0.445)	0.956	(0.899)	0.002
Jan-08	-0.001	(0.698)	1.036	(0.923)	0.003
Feb-08	-0.001	(0.473)	0.953	(0.894)	0.003
Mar-08	-0.002	(0.013)	0.545	(0.125)	0.001
Apr-08	-0.003	(0.000)	0.451	(0.032)	0.001
May-08	-0.004	(0.000)	0.244	(0.003)	0.000
Jun-08	-0.004	(0.000)	0.118	(0.000)	0.000
Jul-08	-0.004	(0.000)	0.114	(0.000)	0.000
Aug-08	-0.004	(0.000)	0.222	(0.000)	0.000
Sep-08	-0.002	(0.001)	0.911	(0.698)	0.007
Oct-08	0.001	(0.389)	2.406	(0.000)	0.060
Nov-08	-0.005	(0.000)	0.279	(0.006)	0.001
Dec-08	-0.001	(0.097)	0.981	(0.933)	0.016
Jan-09	-0.002	(0.009)	0.885	(0.574)	0.014

Table 19: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
A	β_E	p-value	Adj R^2
Nov-07	0.121	(0.000)	0.613
Dec-07	0.026	(0.000)	0.609
Jan-08	0.049	(0.000)	0.595
Feb-08	0.043	(0.000)	0.586
Mar-08	-0.016	(0.000)	0.577
Apr-08	0.120	(0.000)	0.568
May-08	0.137	(0.000)	0.565
Jun-08	0.010	(0.000)	0.557
Jul-08	0.039	(0.000)	0.548
Aug-08	-0.065	(0.000)	0.545
Sep-08	0.246	(0.000)	0.548
Oct-08	0.817	(0.598)	0.607
Nov-08	0.385	(0.009)	0.630
Dec-08	0.399	(0.003)	0.614
Jan-09	0.295	(0.000)	0.596

Normal Inverse Gaussian			
A	β_E	p-value	Adj R^2
Nov-07	0.126	(0.000)	0.613
Dec-07	0.037	(0.000)	0.609
Jan-08	0.054	(0.000)	0.595
Feb-08	0.040	(0.000)	0.586
Mar-08	-0.013	(0.000)	0.577
Apr-08	0.116	(0.000)	0.568
May-08	0.136	(0.000)	0.565
Jun-08	0.016	(0.000)	0.557
Jul-08	0.040	(0.000)	0.548
Aug-08	-0.061	(0.000)	0.545
Sep-08	0.238	(0.000)	0.548
Oct-08	0.779	(0.513)	0.607
Nov-08	0.365	(0.006)	0.629
Dec-08	0.369	(0.001)	0.613
Jan-09	0.273	(0.000)	0.595

Variance Gamma			
A	β_E	p-value	Adj R^2
Nov-07	0.281	(0.001)	0.613
Dec-07	0.141	(0.000)	0.609
Jan-08	0.165	(0.033)	0.595
Feb-08	0.202	(0.031)	0.587
Mar-08	0.222	(0.031)	0.577
Apr-08	0.374	(0.059)	0.568
May-08	0.328	(0.040)	0.565
Jun-08	0.130	(0.001)	0.557
Jul-08	0.225	(0.001)	0.548
Aug-08	-0.014	(0.000)	0.545
Sep-08	0.184	(0.000)	0.548
Oct-08	0.275	(0.005)	0.601
Nov-08	-0.003	(0.000)	0.628
Dec-08	0.067	(0.000)	0.612
Jan-09	-0.008	(0.000)	0.594

Table 20: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
A	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	-1.003	(0.000)	0.001
Dec-07	0.005	(0.000)	-0.999	(0.000)	0.001
Jan-08	0.004	(0.000)	-0.812	(0.000)	0.001
Feb-08	0.004	(0.000)	-0.678	(0.000)	0.001
Mar-08	0.004	(0.000)	-0.698	(0.000)	0.001
Apr-08	0.003	(0.000)	-1.400	(0.000)	0.005
May-08	0.003	(0.000)	-1.169	(0.000)	0.003
Jun-08	0.003	(0.000)	-0.892	(0.000)	0.003
Jul-08	0.003	(0.000)	-0.934	(0.000)	0.003
Aug-08	0.002	(0.000)	-0.999	(0.000)	0.004
Sep-08	0.002	(0.000)	-0.532	(0.000)	0.002
Oct-08	0.002	(0.000)	0.534	(0.000)	0.004
Nov-08	0.001	(0.000)	0.775	(0.008)	0.012
Dec-08	0.001	(0.000)	0.691	(0.000)	0.011
Jan-09	0.001	(0.000)	0.614	(0.000)	0.010

Normal Inverse Gaussian					
A	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	-0.940	(0.000)	0.001
Dec-07	0.005	(0.000)	-0.929	(0.000)	0.001
Jan-08	0.004	(0.000)	-0.752	(0.000)	0.001
Feb-08	0.004	(0.000)	-0.637	(0.000)	0.001
Mar-08	0.004	(0.000)	-0.662	(0.000)	0.001
Apr-08	0.003	(0.000)	-1.340	(0.000)	0.005
May-08	0.003	(0.000)	-1.122	(0.000)	0.003
Jun-08	0.003	(0.000)	-0.861	(0.000)	0.003
Jul-08	0.003	(0.000)	-0.906	(0.000)	0.003
Aug-08	0.002	(0.000)	-0.971	(0.000)	0.004
Sep-08	0.002	(0.000)	-0.523	(0.000)	0.002
Oct-08	0.002	(0.000)	0.523	(0.000)	0.004
Nov-08	0.001	(0.000)	0.762	(0.005)	0.012
Dec-08	0.001	(0.000)	0.681	(0.000)	0.011
Jan-09	0.001	(0.000)	0.606	(0.000)	0.010

Variance Gamma					
A	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	-1.049	(0.000)	0.001
Dec-07	0.005	(0.000)	-1.008	(0.000)	0.001
Jan-08	0.004	(0.000)	-0.853	(0.000)	0.001
Feb-08	0.004	(0.000)	-0.523	(0.000)	0.000
Mar-08	0.004	(0.000)	-0.472	(0.000)	0.000
Apr-08	0.003	(0.000)	-0.956	(0.000)	0.001
May-08	0.003	(0.000)	-0.688	(0.000)	0.000
Jun-08	0.003	(0.000)	-0.600	(0.000)	0.000
Jul-08	0.003	(0.000)	-0.611	(0.000)	0.001
Aug-08	0.002	(0.000)	-0.752	(0.000)	0.001
Sep-08	0.002	(0.000)	-0.368	(0.000)	0.000
Oct-08	0.002	(0.000)	0.800	(0.086)	0.006
Nov-08	0.002	(0.000)	0.972	(0.787)	0.016
Dec-08	0.001	(0.000)	0.839	(0.061)	0.014
Jan-09	0.001	(0.000)	0.733	(0.001)	0.012

Table 21: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
A	β_E	p-value	Adj R^2
Nov-07	-0.525	(0.000)	0.644
Dec-07	-0.525	(0.000)	0.644
Jan-08	-0.494	(0.000)	0.643
Feb-08	-0.416	(0.000)	0.647
Mar-08	-0.454	(0.000)	0.648
Apr-08	-0.475	(0.000)	0.659
May-08	-0.424	(0.000)	0.660
Jun-08	-0.337	(0.000)	0.658
Jul-08	-0.301	(0.000)	0.656
Aug-08	-0.292	(0.000)	0.657
Sep-08	-0.153	(0.000)	0.653
Oct-08	0.044	(0.000)	0.659
Nov-08	0.160	(0.000)	0.661
Dec-08	0.156	(0.000)	0.659
Jan-09	0.112	(0.000)	0.657

Normal Inverse Gaussian			
A	β_E	p-value	Adj R^2
Nov-07	-0.486	(0.000)	0.644
Dec-07	-0.487	(0.000)	0.644
Jan-08	-0.462	(0.000)	0.643
Feb-08	-0.389	(0.000)	0.647
Mar-08	-0.426	(0.000)	0.648
Apr-08	-0.449	(0.000)	0.659
May-08	-0.397	(0.000)	0.660
Jun-08	-0.317	(0.000)	0.658
Jul-08	-0.282	(0.000)	0.656
Aug-08	-0.275	(0.000)	0.657
Sep-08	-0.147	(0.000)	0.653
Oct-08	0.045	(0.000)	0.659
Nov-08	0.157	(0.000)	0.661
Dec-08	0.154	(0.000)	0.659
Jan-09	0.110	(0.000)	0.657

Variance Gamma			
A	β_E	p-value	Adj R^2
Nov-07	0.257	(0.103)	0.644
Dec-07	0.216	(0.069)	0.644
Jan-08	0.155	(0.021)	0.643
Feb-08	0.169	(0.018)	0.647
Mar-08	0.034	(0.004)	0.648
Apr-08	0.027	(0.001)	0.659
May-08	0.043	(0.001)	0.660
Jun-08	-0.024	(0.000)	0.658
Jul-08	0.036	(0.000)	0.656
Aug-08	0.013	(0.000)	0.656
Sep-08	0.007	(0.000)	0.653
Oct-08	0.116	(0.000)	0.659
Nov-08	0.223	(0.000)	0.662
Dec-08	0.209	(0.000)	0.659
Jan-09	0.150	(0.000)	0.657

Table 22: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal							
BBB	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.988	(0.000)	2.192	(0.000)	0.008
Dec-07	-0.005	(0.000)	-0.888	(0.000)	1.804	(0.000)	0.006
Jan-08	-0.005	(0.000)	-0.811	(0.000)	1.994	(0.000)	0.006
Feb-08	-0.005	(0.000)	-0.495	(0.000)	0.817	(0.019)	0.002
Mar-08	-0.005	(0.000)	-0.527	(0.000)	-0.512	(0.185)	0.002
Apr-08	-0.005	(0.000)	-0.382	(0.000)	-0.591	(0.051)	0.001
May-08	-0.005	(0.000)	-0.196	(0.000)	-1.293	(0.000)	0.001
Jun-08	-0.005	(0.000)	-0.210	(0.000)	-1.260	(0.000)	0.001
Jul-08	-0.005	(0.000)	-0.148	(0.000)	-1.600	(0.000)	0.002
Aug-08	-0.005	(0.000)	-0.044	(0.000)	-1.136	(0.000)	0.001
Sep-08	-0.005	(0.000)	0.357	(0.000)	-2.276	(0.000)	0.009
Oct-08	-0.003	(0.000)	1.681	(0.003)	-6.152	(0.000)	0.183
Nov-08	-0.003	(0.000)	0.755	(0.022)	-5.776	(0.000)	0.082
Dec-08	-0.003	(0.000)	0.675	(0.001)	-5.616	(0.000)	0.076
Jan-09	-0.002	(0.000)	0.027	(0.000)	-7.680	(0.000)	0.035

Normal Inverse Gaussian							
BBB	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.979	(0.000)	2.188	(0.000)	0.008
Dec-07	-0.005	(0.000)	-0.882	(0.000)	1.800	(0.000)	0.006
Jan-08	-0.005	(0.000)	-0.806	(0.000)	1.988	(0.000)	0.007
Feb-08	-0.005	(0.000)	-0.501	(0.000)	0.810	(0.020)	0.002
Mar-08	-0.005	(0.000)	-0.531	(0.000)	-0.516	(0.182)	0.002
Apr-08	-0.005	(0.000)	-0.387	(0.000)	-0.591	(0.051)	0.001
May-08	-0.005	(0.000)	-0.203	(0.000)	-1.294	(0.000)	0.001
Jun-08	-0.005	(0.000)	-0.216	(0.000)	-1.265	(0.000)	0.001
Jul-08	-0.005	(0.000)	-0.154	(0.000)	-1.605	(0.000)	0.002
Aug-08	-0.005	(0.000)	-0.051	(0.000)	-1.139	(0.000)	0.001
Sep-08	-0.005	(0.000)	0.346	(0.000)	-2.280	(0.000)	0.009
Oct-08	-0.003	(0.000)	1.667	(0.003)	-6.130	(0.000)	0.183
Nov-08	-0.003	(0.000)	0.756	(0.022)	-5.746	(0.000)	0.082
Dec-08	-0.003	(0.000)	0.688	(0.001)	-5.557	(0.000)	0.077
Jan-09	-0.002	(0.000)	0.050	(0.000)	-7.619	(0.000)	0.036

Variance Gamma							
BBB	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.825	(0.000)	2.168	(0.000)	0.006
Dec-07	-0.005	(0.000)	-0.739	(0.000)	1.782	(0.000)	0.005
Jan-08	-0.005	(0.000)	-0.693	(0.000)	2.002	(0.000)	0.005
Feb-08	-0.005	(0.000)	-0.410	(0.000)	0.841	(0.014)	0.001
Mar-08	-0.005	(0.000)	-0.487	(0.000)	-0.531	(0.168)	0.002
Apr-08	-0.005	(0.000)	-0.363	(0.000)	-0.607	(0.046)	0.001
May-08	-0.005	(0.000)	-0.174	(0.000)	-1.300	(0.000)	0.001
Jun-08	-0.005	(0.000)	-0.185	(0.000)	-1.250	(0.000)	0.001
Jul-08	-0.005	(0.000)	-0.135	(0.000)	-1.592	(0.000)	0.002
Aug-08	-0.005	(0.000)	-0.060	(0.000)	-1.143	(0.000)	0.001
Sep-08	-0.005	(0.000)	0.361	(0.000)	-2.310	(0.000)	0.009
Oct-08	-0.003	(0.000)	1.524	(0.022)	-7.174	(0.000)	0.153
Nov-08	-0.003	(0.000)	0.611	(0.000)	-6.519	(0.000)	0.067
Dec-08	-0.003	(0.000)	0.580	(0.000)	-6.135	(0.000)	0.063
Jan-09	-0.002	(0.000)	0.036	(0.000)	-7.664	(0.000)	0.035

Table 23: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
BBB	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.198	(0.000)	0.000
Dec-07	-0.005	(0.000)	-0.213	(0.000)	0.000
Jan-08	-0.005	(0.000)	-0.198	(0.000)	0.000
Feb-08	-0.005	(0.000)	-0.092	(0.000)	0.000
Mar-08	-0.006	(0.000)	-0.294	(0.000)	0.001
Apr-08	-0.006	(0.000)	-0.209	(0.000)	0.000
May-08	-0.006	(0.000)	-0.114	(0.000)	0.000
Jun-08	-0.006	(0.000)	-0.123	(0.000)	0.000
Jul-08	-0.006	(0.000)	-0.093	(0.000)	0.000
Aug-08	-0.006	(0.000)	0.005	(0.000)	0.000
Sep-08	-0.005	(0.000)	0.378	(0.000)	0.003
Oct-08	-0.002	(0.059)	1.860	(0.000)	0.145
Nov-08	-0.004	(0.000)	0.916	(0.486)	0.059
Dec-08	-0.005	(0.000)	0.776	(0.037)	0.055
Jan-09	-0.008	(0.000)	0.030	(0.000)	0.001

Normal Inverse Gaussian					
BBB	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.225	(0.000)	0.000
Dec-07	-0.006	(0.000)	-0.237	(0.000)	0.000
Jan-08	-0.005	(0.000)	-0.221	(0.000)	0.000
Feb-08	-0.005	(0.000)	-0.115	(0.000)	0.000
Mar-08	-0.006	(0.000)	-0.307	(0.000)	0.001
Apr-08	-0.006	(0.000)	-0.219	(0.000)	0.000
May-08	-0.006	(0.000)	-0.123	(0.000)	0.000
Jun-08	-0.006	(0.000)	-0.131	(0.000)	0.000
Jul-08	-0.006	(0.000)	-0.100	(0.000)	0.000
Aug-08	-0.006	(0.000)	-0.003	(0.000)	0.000
Sep-08	-0.005	(0.000)	0.369	(0.000)	0.003
Oct-08	-0.002	(0.050)	1.846	(0.000)	0.146
Nov-08	-0.004	(0.000)	0.916	(0.486)	0.060
Dec-08	-0.005	(0.000)	0.791	(0.045)	0.056
Jan-09	-0.008	(0.000)	0.058	(0.000)	0.003

Variance Gamma					
BBB	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.005	(0.000)	-0.099	(0.000)	0.000
Dec-07	-0.005	(0.000)	-0.118	(0.000)	0.000
Jan-08	-0.005	(0.000)	-0.108	(0.000)	0.000
Feb-08	-0.005	(0.000)	-0.024	(0.000)	0.000
Mar-08	-0.006	(0.000)	-0.261	(0.000)	0.000
Apr-08	-0.006	(0.000)	-0.192	(0.000)	0.000
May-08	-0.006	(0.000)	-0.095	(0.000)	0.000
Jun-08	-0.006	(0.000)	-0.101	(0.000)	0.000
Jul-08	-0.006	(0.000)	-0.083	(0.000)	0.000
Aug-08	-0.006	(0.000)	-0.009	(0.000)	0.000
Sep-08	-0.005	(0.000)	0.366	(0.000)	0.003
Oct-08	-0.002	(0.002)	1.682	(0.005)	0.105
Nov-08	-0.005	(0.000)	0.767	(0.033)	0.039
Dec-08	-0.005	(0.000)	0.676	(0.001)	0.039
Jan-09	-0.008	(0.000)	0.041	(0.000)	0.001

Table 24: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
BBB	β_E	p-value	Adj R^2
Nov-07	-0.302	(0.000)	0.427
Dec-07	-0.293	(0.000)	0.426
Jan-08	-0.289	(0.000)	0.414
Feb-08	-0.140	(0.000)	0.408
Mar-08	-0.126	(0.000)	0.402
Apr-08	-0.012	(0.000)	0.388
May-08	0.085	(0.000)	0.383
Jun-08	0.043	(0.000)	0.375
Jul-08	0.041	(0.000)	0.370
Aug-08	0.069	(0.000)	0.365
Sep-08	0.256	(0.000)	0.356
Oct-08	0.693	(0.051)	0.493
Nov-08	0.492	(0.000)	0.457
Dec-08	0.447	(0.000)	0.430
Jan-09	0.007	(0.000)	0.390

Normal Inverse Gaussian			
BBB	β_E	p-value	Adj R^2
Nov-07	-0.299	(0.000)	0.427
Dec-07	-0.290	(0.000)	0.426
Jan-08	-0.288	(0.000)	0.414
Feb-08	-0.144	(0.000)	0.408
Mar-08	-0.129	(0.000)	0.402
Apr-08	-0.016	(0.000)	0.388
May-08	0.080	(0.000)	0.383
Jun-08	0.038	(0.000)	0.375
Jul-08	0.037	(0.000)	0.370
Aug-08	0.065	(0.000)	0.365
Sep-08	0.251	(0.000)	0.356
Oct-08	0.689	(0.047)	0.493
Nov-08	0.491	(0.000)	0.457
Dec-08	0.455	(0.000)	0.430
Jan-09	0.016	(0.000)	0.390

Variance Gamma			
BBB	β_E	p-value	Adj R^2
Nov-07	-0.174	(0.000)	0.427
Dec-07	-0.189	(0.000)	0.425
Jan-08	-0.209	(0.000)	0.414
Feb-08	-0.087	(0.000)	0.407
Mar-08	-0.140	(0.000)	0.402
Apr-08	-0.037	(0.000)	0.388
May-08	0.059	(0.000)	0.383
Jun-08	0.026	(0.000)	0.375
Jul-08	0.025	(0.000)	0.370
Aug-08	0.036	(0.000)	0.364
Sep-08	0.273	(0.000)	0.356
Oct-08	0.557	(0.004)	0.488
Nov-08	0.422	(0.000)	0.454
Dec-08	0.408	(0.000)	0.428
Jan-09	0.011	(0.000)	0.390

Table 25: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
BBB	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	1.048	(0.849)	0.003
Dec-07	0.005	(0.000)	0.934	(0.779)	0.003
Jan-08	0.004	(0.000)	0.879	(0.546)	0.003
Feb-08	0.004	(0.000)	1.066	(0.727)	0.004
Mar-08	0.004	(0.000)	1.029	(0.863)	0.005
Apr-08	0.003	(0.000)	0.568	(0.004)	0.002
May-08	0.003	(0.000)	0.705	(0.055)	0.003
Jun-08	0.003	(0.000)	0.592	(0.001)	0.003
Jul-08	0.003	(0.000)	0.423	(0.000)	0.002
Aug-08	0.002	(0.000)	0.274	(0.000)	0.001
Sep-08	0.002	(0.000)	0.157	(0.000)	0.000
Oct-08	0.002	(0.000)	0.430	(0.000)	0.009
Nov-08	0.002	(0.000)	0.379	(0.000)	0.013
Dec-08	0.002	(0.000)	0.291	(0.000)	0.010
Jan-09	0.001	(0.000)	0.022	(0.000)	0.001

Normal Inverse Gaussian					
BBB	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	1.014	(0.954)	0.003
Dec-07	0.005	(0.000)	0.905	(0.676)	0.002
Jan-08	0.004	(0.000)	0.853	(0.449)	0.003
Feb-08	0.004	(0.000)	1.037	(0.840)	0.004
Mar-08	0.004	(0.000)	1.005	(0.978)	0.005
Apr-08	0.003	(0.000)	0.553	(0.003)	0.002
May-08	0.003	(0.000)	0.689	(0.038)	0.003
Jun-08	0.003	(0.000)	0.579	(0.001)	0.003
Jul-08	0.003	(0.000)	0.415	(0.000)	0.002
Aug-08	0.002	(0.000)	0.270	(0.000)	0.001
Sep-08	0.002	(0.000)	0.155	(0.000)	0.000
Oct-08	0.002	(0.000)	0.427	(0.000)	0.009
Nov-08	0.002	(0.000)	0.378	(0.000)	0.013
Dec-08	0.002	(0.000)	0.297	(0.000)	0.010
Jan-09	0.001	(0.000)	0.036	(0.000)	0.001

Variance Gamma					
BBB	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.004	(0.000)	0.854	(0.681)	0.002
Dec-07	0.005	(0.000)	0.761	(0.451)	0.002
Jan-08	0.004	(0.000)	0.721	(0.302)	0.002
Feb-08	0.004	(0.000)	0.911	(0.747)	0.003
Mar-08	0.004	(0.000)	0.876	(0.592)	0.004
Apr-08	0.003	(0.000)	0.450	(0.000)	0.001
May-08	0.003	(0.000)	0.618	(0.033)	0.002
Jun-08	0.003	(0.000)	0.516	(0.001)	0.002
Jul-08	0.003	(0.000)	0.383	(0.000)	0.001
Aug-08	0.002	(0.000)	0.252	(0.000)	0.000
Sep-08	0.002	(0.000)	0.146	(0.000)	0.000
Oct-08	0.002	(0.000)	0.375	(0.000)	0.006
Nov-08	0.002	(0.000)	0.349	(0.000)	0.010
Dec-08	0.002	(0.000)	0.271	(0.000)	0.008
Jan-09	0.001	(0.000)	0.031	(0.000)	0.001

Table 26: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
BBB	β_E	p-value	Adj R^2
Nov-07	1.082	(0.802)	0.434
Dec-07	1.045	(0.883)	0.433
Jan-08	0.906	(0.709)	0.431
Feb-08	0.828	(0.451)	0.436
Mar-08	0.743	(0.189)	0.434
Apr-08	0.620	(0.021)	0.450
May-08	0.615	(0.013)	0.455
Jun-08	0.532	(0.001)	0.453
Jul-08	0.416	(0.000)	0.453
Aug-08	0.406	(0.000)	0.454
Sep-08	0.259	(0.000)	0.451
Oct-08	0.158	(0.000)	0.458
Nov-08	0.105	(0.000)	0.461
Dec-08	0.082	(0.000)	0.459
Jan-09	0.008	(0.000)	0.457

Normal Inverse Gaussian			
BBB	β_E	p-value	Adj R^2
Nov-07	1.054	(0.866)	0.434
Dec-07	1.020	(0.947)	0.433
Jan-08	0.884	(0.636)	0.431
Feb-08	0.811	(0.394)	0.436
Mar-08	0.730	(0.157)	0.434
Apr-08	0.610	(0.016)	0.450
May-08	0.605	(0.009)	0.455
Jun-08	0.525	(0.000)	0.453
Jul-08	0.411	(0.000)	0.453
Aug-08	0.401	(0.000)	0.454
Sep-08	0.257	(0.000)	0.451
Oct-08	0.158	(0.000)	0.458
Nov-08	0.105	(0.000)	0.461
Dec-08	0.085	(0.000)	0.459
Jan-09	0.012	(0.000)	0.457

Variance Gamma			
BBB	β_E	p-value	Adj R^2
Nov-07	0.653	(0.447)	0.432
Dec-07	0.678	(0.461)	0.431
Jan-08	0.614	(0.288)	0.430
Feb-08	0.570	(0.177)	0.435
Mar-08	0.535	(0.076)	0.433
Apr-08	0.474	(0.020)	0.449
May-08	0.482	(0.019)	0.454
Jun-08	0.405	(0.001)	0.452
Jul-08	0.337	(0.000)	0.452
Aug-08	0.318	(0.000)	0.454
Sep-08	0.196	(0.000)	0.451
Oct-08	0.080	(0.000)	0.457
Nov-08	0.065	(0.000)	0.460
Dec-08	0.058	(0.000)	0.459
Jan-09	0.010	(0.000)	0.457

Table 27: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal							
BB	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.006	(0.000)	1.035	(0.919)	0.900	(0.434)	0.0091
Dec-07	-0.006	(0.000)	0.873	(0.733)	0.961	(0.356)	0.0064
Jan-08	-0.006	(0.000)	1.429	(0.093)	0.111	(0.887)	0.0317
Feb-08	-0.006	(0.000)	2.583	(0.001)	-2.546	(0.011)	0.1408
Mar-08	-0.006	(0.000)	2.413	(0.003)	-3.193	(0.020)	0.1292
Apr-08	-0.006	(0.000)	2.278	(0.003)	-2.650	(0.001)	0.1173
May-08	-0.006	(0.000)	2.094	(0.013)	-2.540	(0.001)	0.1065
Jun-08	-0.006	(0.000)	1.935	(0.009)	-1.881	(0.050)	0.1097
Jul-08	-0.006	(0.000)	1.724	(0.039)	-3.069	(0.000)	0.1013
Aug-08	-0.006	(0.000)	1.702	(0.044)	-2.893	(0.000)	0.0986
Sep-08	-0.005	(0.000)	1.725	(0.025)	-4.175	(0.003)	0.133
Oct-08	-0.004	(0.000)	2.860	(0.000)	-7.343	(0.000)	0.3971
Nov-08	-0.004	(0.000)	2.475	(0.000)	-7.116	(0.000)	0.3799
Dec-08	-0.003	(0.000)	1.673	(0.005)	-10.992	(0.000)	0.2326
Jan-09	-0.003	(0.000)	1.459	(0.237)	-8.386	(0.000)	0.1562

Normal Inverse Gaussian							
BB	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.006	(0.000)	1.010	(0.977)	0.893	(0.438)	0.0091
Dec-07	-0.006	(0.000)	0.848	(0.680)	0.957	(0.359)	0.0063
Jan-08	-0.006	(0.000)	1.397	(0.119)	0.103	(0.895)	0.0317
Feb-08	-0.006	(0.000)	2.530	(0.001)	-2.571	(0.009)	0.1411
Mar-08	-0.006	(0.000)	2.367	(0.003)	-3.203	(0.019)	0.1296
Apr-08	-0.006	(0.000)	2.235	(0.003)	-2.658	(0.001)	0.1177
May-08	-0.006	(0.000)	2.056	(0.013)	-2.549	(0.001)	0.1069
Jun-08	-0.006	(0.000)	1.902	(0.010)	-1.898	(0.047)	0.1101
Jul-08	-0.006	(0.000)	1.696	(0.042)	-3.079	(0.000)	0.1016
Aug-08	-0.006	(0.000)	1.675	(0.047)	-2.900	(0.000)	0.099
Sep-08	-0.005	(0.000)	1.696	(0.028)	-4.187	(0.003)	0.1332
Oct-08	-0.004	(0.000)	2.809	(0.000)	-7.410	(0.000)	0.3953
Nov-08	-0.004	(0.000)	2.438	(0.000)	-7.161	(0.000)	0.3788
Dec-08	-0.003	(0.000)	1.657	(0.005)	-10.980	(0.000)	0.2328
Jan-09	-0.003	(0.000)	1.448	(0.240)	-8.363	(0.000)	0.1566

Variance Gamma							
BB	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.006	(0.000)	1.071	(0.843)	0.872	(0.451)	0.006
Dec-07	-0.006	(0.000)	0.877	(0.745)	0.956	(0.361)	0.004
Jan-08	-0.006	(0.000)	1.544	(0.044)	0.088	(0.909)	0.030
Feb-08	-0.006	(0.000)	2.836	(0.000)	-2.253	(0.025)	0.149
Mar-08	-0.006	(0.000)	2.630	(0.001)	-2.889	(0.042)	0.135
Apr-08	-0.006	(0.000)	2.420	(0.002)	-2.402	(0.003)	0.118
May-08	-0.006	(0.000)	2.276	(0.006)	-2.146	(0.010)	0.110
Jun-08	-0.006	(0.000)	2.065	(0.005)	-1.489	(0.134)	0.112
Jul-08	-0.006	(0.000)	1.812	(0.030)	-2.791	(0.000)	0.102
Aug-08	-0.006	(0.000)	1.783	(0.034)	-2.661	(0.001)	0.099
Sep-08	-0.005	(0.000)	1.788	(0.021)	-3.891	(0.006)	0.133
Oct-08	-0.004	(0.000)	2.936	(0.000)	-6.728	(0.000)	0.400
Nov-08	-0.004	(0.000)	2.522	(0.000)	-6.606	(0.000)	0.381
Dec-08	-0.003	(0.000)	1.690	(0.005)	-10.746	(0.000)	0.232
Jan-09	-0.003	(0.000)	1.470	(0.238)	-8.193	(0.000)	0.156

Table 28: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
BB	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.002	(0.092)	1.229	(0.420)	0.016
Dec-07	-0.002	(0.031)	1.068	(0.831)	0.013
Jan-08	-0.001	(0.250)	1.522	(0.022)	0.038
Feb-08	0.002	(0.241)	2.663	(0.002)	0.137
Mar-08	0.001	(0.600)	2.436	(0.006)	0.120
Apr-08	0.000	(0.859)	2.240	(0.007)	0.110
May-08	0.000	(0.746)	2.052	(0.020)	0.099
Jun-08	-0.001	(0.605)	1.952	(0.010)	0.105
Jul-08	-0.002	(0.092)	1.708	(0.048)	0.091
Aug-08	-0.002	(0.057)	1.659	(0.063)	0.089
Sep-08	-0.003	(0.042)	1.781	(0.019)	0.115
Oct-08	0.001	(0.376)	3.159	(0.000)	0.365
Nov-08	0.000	(0.894)	2.805	(0.000)	0.356
Dec-08	-0.004	(0.004)	1.968	(0.000)	0.190
Jan-09	-0.004	(0.038)	1.675	(0.075)	0.135

Normal Inverse Gaussian					
BB	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.002	(0.069)	1.197	(0.485)	0.016
Dec-07	-0.002	(0.022)	1.036	(0.910)	0.013
Jan-08	-0.001	(0.192)	1.488	(0.033)	0.038
Feb-08	0.002	(0.263)	2.609	(0.002)	0.137
Mar-08	0.001	(0.641)	2.392	(0.006)	0.121
Apr-08	0.000	(0.921)	2.201	(0.007)	0.111
May-08	-0.001	(0.685)	2.018	(0.021)	0.100
Jun-08	-0.001	(0.547)	1.919	(0.011)	0.106
Jul-08	-0.002	(0.075)	1.681	(0.051)	0.091
Aug-08	-0.002	(0.046)	1.634	(0.067)	0.089
Sep-08	-0.003	(0.033)	1.752	(0.021)	0.115
Oct-08	0.001	(0.449)	3.106	(0.000)	0.363
Nov-08	0.000	(0.990)	2.766	(0.000)	0.355
Dec-08	-0.004	(0.004)	1.949	(0.000)	0.190
Jan-09	-0.004	(0.035)	1.661	(0.075)	0.136

Variance Gamma					
BB	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.001	(0.218)	1.326	(0.280)	0.014
Dec-07	-0.002	(0.072)	1.136	(0.678)	0.011
Jan-08	0.000	(0.620)	1.648	(0.009)	0.037
Feb-08	0.003	(0.133)	2.929	(0.001)	0.146
Mar-08	0.002	(0.403)	2.662	(0.003)	0.127
Apr-08	0.001	(0.638)	2.388	(0.004)	0.111
May-08	0.000	(0.880)	2.247	(0.010)	0.104
Jun-08	0.000	(0.929)	2.096	(0.005)	0.109
Jul-08	-0.002	(0.209)	1.806	(0.036)	0.092
Aug-08	-0.002	(0.133)	1.746	(0.049)	0.090
Sep-08	-0.002	(0.098)	1.855	(0.015)	0.116
Oct-08	0.002	(0.203)	3.241	(0.000)	0.372
Nov-08	0.000	(0.565)	2.855	(0.000)	0.360
Dec-08	-0.004	(0.009)	1.993	(0.000)	0.191
Jan-09	-0.004	(0.054)	1.691	(0.075)	0.135

Table 29: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
BB	β_E	p-value	Adj R^2
Nov-07	0.612	(0.363)	0.364
Dec-07	0.430	(0.190)	0.360
Jan-08	1.121	(0.755)	0.365
Feb-08	2.017	(0.047)	0.419
Mar-08	1.862	(0.040)	0.399
Apr-08	1.662	(0.085)	0.381
May-08	1.471	(0.221)	0.373
Jun-08	1.488	(0.159)	0.370
Jul-08	1.333	(0.304)	0.367
Aug-08	1.291	(0.366)	0.360
Sep-08	1.107	(0.762)	0.369
Oct-08	1.243	(0.550)	0.584
Nov-08	1.339	(0.368)	0.567
Dec-08	0.098	(0.050)	0.465
Jan-09	0.067	(0.002)	0.436

Normal Inverse Gaussian			
BB	β_E	p-value	Adj R^2
Nov-07	0.599	(0.338)	0.364
Dec-07	0.417	(0.171)	0.360
Jan-08	1.097	(0.799)	0.365
Feb-08	1.980	(0.047)	0.420
Mar-08	1.831	(0.041)	0.399
Apr-08	1.635	(0.091)	0.381
May-08	1.449	(0.233)	0.374
Jun-08	1.464	(0.172)	0.370
Jul-08	1.312	(0.327)	0.367
Aug-08	1.272	(0.391)	0.360
Sep-08	1.090	(0.798)	0.369
Oct-08	1.209	(0.604)	0.584
Nov-08	1.306	(0.413)	0.566
Dec-08	0.096	(0.047)	0.465
Jan-09	0.065	(0.002)	0.436

Variance Gamma			
BB	β_E	p-value	Adj R^2
Nov-07	0.438	(0.234)	0.362
Dec-07	0.260	(0.099)	0.359
Jan-08	1.140	(0.693)	0.363
Feb-08	2.160	(0.038)	0.420
Mar-08	1.967	(0.039)	0.399
Apr-08	1.679	(0.101)	0.377
May-08	1.546	(0.195)	0.372
Jun-08	1.549	(0.134)	0.369
Jul-08	1.370	(0.278)	0.365
Aug-08	1.323	(0.341)	0.358
Sep-08	1.120	(0.749)	0.368
Oct-08	1.251	(0.559)	0.583
Nov-08	1.349	(0.377)	0.566
Dec-08	0.061	(0.047)	0.465
Jan-09	0.040	(0.001)	0.436

Table 30: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
BB	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.005	(0.000)	1.111	(0.818)	0.003
Dec-07	0.005	(0.000)	1.051	(0.910)	0.003
Jan-08	0.005	(0.000)	0.744	(0.481)	0.002
Feb-08	0.005	(0.000)	0.601	(0.063)	0.002
Mar-08	0.005	(0.000)	0.568	(0.032)	0.002
Apr-08	0.005	(0.000)	0.386	(0.003)	0.000
May-08	0.004	(0.000)	0.298	(0.001)	0.000
Jun-08	0.004	(0.000)	0.246	(0.000)	0.000
Jul-08	0.004	(0.000)	0.259	(0.000)	0.000
Aug-08	0.004	(0.000)	0.240	(0.000)	0.000
Sep-08	0.004	(0.000)	0.152	(0.000)	-0.001
Oct-08	0.004	(0.000)	0.483	(0.000)	0.009
Nov-08	0.004	(0.000)	0.544	(0.000)	0.017
Dec-08	0.003	(0.000)	0.441	(0.000)	0.013
Jan-09	0.003	(0.000)	0.392	(0.000)	0.012

Normal Inverse Gaussian					
BB	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.005	(0.000)	1.070	(0.882)	0.003
Dec-07	0.005	(0.000)	1.009	(0.983)	0.003
Jan-08	0.005	(0.000)	0.720	(0.425)	0.002
Feb-08	0.005	(0.000)	0.583	(0.045)	0.002
Mar-08	0.005	(0.000)	0.551	(0.022)	0.002
Apr-08	0.005	(0.000)	0.373	(0.002)	0.000
May-08	0.004	(0.000)	0.287	(0.001)	0.000
Jun-08	0.004	(0.000)	0.239	(0.000)	0.000
Jul-08	0.004	(0.000)	0.251	(0.000)	0.000
Aug-08	0.004	(0.000)	0.233	(0.000)	0.000
Sep-08	0.004	(0.000)	0.148	(0.000)	-0.001
Oct-08	0.004	(0.000)	0.475	(0.000)	0.009
Nov-08	0.004	(0.000)	0.536	(0.000)	0.017
Dec-08	0.003	(0.000)	0.436	(0.000)	0.013
Jan-09	0.003	(0.000)	0.388	(0.000)	0.012

Variance Gamma					
BB	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.005	(0.000)	0.513	(0.296)	-0.001
Dec-07	0.005	(0.000)	0.437	(0.165)	-0.001
Jan-08	0.005	(0.000)	0.303	(0.017)	-0.001
Feb-08	0.005	(0.000)	0.324	(0.000)	-0.001
Mar-08	0.005	(0.000)	0.305	(0.000)	-0.001
Apr-08	0.005	(0.000)	0.153	(0.000)	-0.001
May-08	0.004	(0.000)	0.120	(0.000)	-0.001
Jun-08	0.004	(0.000)	0.102	(0.000)	-0.001
Jul-08	0.004	(0.000)	0.134	(0.000)	-0.001
Aug-08	0.004	(0.000)	0.117	(0.000)	-0.001
Sep-08	0.004	(0.000)	0.057	(0.000)	-0.001
Oct-08	0.004	(0.000)	0.448	(0.000)	0.008
Nov-08	0.004	(0.000)	0.520	(0.000)	0.015
Dec-08	0.003	(0.000)	0.420	(0.000)	0.012
Jan-09	0.003	(0.000)	0.373	(0.000)	0.011

Table 31: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
BB	β_E	p-value	Adj R^2
Nov-07	0.954	(0.918)	0.302
Dec-07	0.835	(0.697)	0.305
Jan-08	0.521	(0.089)	0.304
Feb-08	0.161	(0.000)	0.303
Mar-08	0.124	(0.000)	0.303
Apr-08	0.117	(0.000)	0.308
May-08	0.018	(0.000)	0.316
Jun-08	0.031	(0.000)	0.314
Jul-08	0.048	(0.000)	0.315
Aug-08	0.094	(0.000)	0.312
Sep-08	0.146	(0.000)	0.311
Oct-08	0.187	(0.000)	0.319
Nov-08	0.177	(0.000)	0.325
Dec-08	0.107	(0.000)	0.323
Jan-09	0.081	(0.000)	0.323

Normal Inverse Gaussian			
BB	β_E	p-value	Adj R^2
Nov-07	0.911	(0.841)	0.301
Dec-07	0.795	(0.624)	0.305
Jan-08	0.502	(0.070)	0.304
Feb-08	0.153	(0.000)	0.303
Mar-08	0.117	(0.000)	0.303
Apr-08	0.109	(0.000)	0.308
May-08	0.014	(0.000)	0.316
Jun-08	0.028	(0.000)	0.314
Jul-08	0.045	(0.000)	0.315
Aug-08	0.090	(0.000)	0.312
Sep-08	0.142	(0.000)	0.311
Oct-08	0.181	(0.000)	0.319
Nov-08	0.174	(0.000)	0.325
Dec-08	0.105	(0.000)	0.323
Jan-09	0.080	(0.000)	0.323

Variance Gamma			
BB	β_E	p-value	Adj R^2
Nov-07	0.322	(0.131)	0.299
Dec-07	0.239	(0.058)	0.303
Jan-08	0.105	(0.000)	0.302
Feb-08	-0.166	(0.000)	0.303
Mar-08	-0.172	(0.000)	0.303
Apr-08	-0.140	(0.000)	0.308
May-08	-0.226	(0.000)	0.317
Jun-08	-0.166	(0.000)	0.314
Jul-08	-0.116	(0.000)	0.315
Aug-08	-0.062	(0.000)	0.312
Sep-08	0.014	(0.000)	0.311
Oct-08	0.082	(0.000)	0.319
Nov-08	0.091	(0.000)	0.324
Dec-08	0.051	(0.000)	0.323
Jan-09	0.040	(0.000)	0.323

Table 32: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal							
B	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.006	(0.000)	1.738	(0.049)	0.194	(0.906)	0.011
Dec-07	-0.006	(0.000)	1.874	(0.009)	-0.004	(0.998)	0.014
Jan-08	-0.006	(0.000)	1.927	(0.012)	-0.224	(0.918)	0.016
Feb-08	-0.006	(0.000)	1.717	(0.058)	0.727	(0.712)	0.014
Mar-08	-0.006	(0.000)	1.760	(0.029)	0.519	(0.798)	0.017
Apr-08	-0.006	(0.000)	1.713	(0.010)	1.355	(0.358)	0.017
May-08	-0.006	(0.000)	2.800	(0.033)	-0.119	(0.934)	0.057
Jun-08	-0.006	(0.000)	1.975	(0.042)	0.459	(0.725)	0.035
Jul-08	-0.006	(0.000)	1.694	(0.103)	-0.750	(0.665)	0.029
Aug-08	-0.006	(0.000)	1.589	(0.118)	-1.305	(0.457)	0.027
Sep-08	-0.006	(0.000)	1.389	(0.343)	-2.555	(0.203)	0.035
Oct-08	-0.004	(0.045)	0.640	(0.262)	-9.422	(0.040)	0.094
Nov-08	-0.003	(0.127)	0.277	(0.000)	-11.866	(0.038)	0.065
Dec-08	0.001	(0.764)	-1.498	(0.000)	-25.946	(0.001)	0.137
Jan-09	0.000	(0.967)	-1.377	(0.000)	-22.852	(0.006)	0.109

Normal Inverse Gaussian							
B	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.006	(0.000)	1.693	(0.068)	0.181	(0.912)	0.011
Dec-07	-0.006	(0.000)	1.835	(0.009)	-0.010	(0.994)	0.014
Jan-08	-0.006	(0.000)	1.887	(0.013)	-0.233	(0.915)	0.016
Feb-08	-0.006	(0.000)	1.680	(0.067)	0.715	(0.716)	0.014
Mar-08	-0.006	(0.000)	1.724	(0.034)	0.503	(0.804)	0.016
Apr-08	-0.006	(0.000)	1.680	(0.013)	1.335	(0.364)	0.016
May-08	-0.006	(0.000)	2.767	(0.030)	-0.132	(0.926)	0.057
Jun-08	-0.006	(0.000)	1.963	(0.038)	0.461	(0.725)	0.035
Jul-08	-0.006	(0.000)	1.683	(0.101)	-0.756	(0.663)	0.030
Aug-08	-0.006	(0.000)	1.579	(0.116)	-1.310	(0.457)	0.027
Sep-08	-0.006	(0.000)	1.388	(0.332)	-2.550	(0.206)	0.035
Oct-08	-0.004	(0.045)	0.646	(0.261)	-9.373	(0.041)	0.095
Nov-08	-0.003	(0.122)	0.300	(0.001)	-11.710	(0.042)	0.066
Dec-08	0.000	(0.804)	-1.458	(0.000)	-25.722	(0.001)	0.131
Jan-09	0.000	(0.924)	-1.340	(0.000)	-22.618	(0.007)	0.103

Variance Gamma							
B	α	p-value	β_E	p-value	β_{rf}	p-value	Adj R^2
Nov-07	-0.006	(0.000)	-0.014	(0.000)	-0.899	(0.627)	-0.006
Dec-07	-0.006	(0.000)	-0.014	(0.000)	-1.241	(0.436)	-0.005
Jan-08	-0.006	(0.000)	-0.014	(0.000)	-1.283	(0.578)	-0.005
Feb-08	-0.006	(0.000)	-0.014	(0.000)	-0.817	(0.658)	-0.005
Mar-08	-0.006	(0.000)	-0.014	(0.000)	-0.802	(0.675)	-0.005
Apr-08	-0.006	(0.000)	-0.015	(0.000)	-0.037	(0.980)	-0.005
May-08	-0.006	(0.000)	-0.010	(0.000)	-2.924	(0.030)	-0.002
Jun-08	-0.006	(0.000)	-0.011	(0.000)	-2.651	(0.038)	-0.002
Jul-08	-0.006	(0.000)	-0.011	(0.000)	-2.655	(0.070)	-0.002
Aug-08	-0.006	(0.000)	-0.011	(0.000)	-2.817	(0.077)	-0.001
Sep-08	-0.005	(0.000)	-0.008	(0.000)	-4.899	(0.011)	0.008
Oct-08	-0.002	(0.169)	0.013	(0.000)	-13.120	(0.003)	0.063
Nov-08	-0.002	(0.248)	0.003	(0.000)	-13.851	(0.015)	0.059
Dec-08	-0.003	(0.183)	-0.101	(0.000)	-17.156	(0.001)	0.043
Jan-09	-0.003	(0.102)	-0.098	(0.000)	-14.616	(0.004)	0.031

Table 33: Regression results of the model proposed by Schaefer and Strebulaev [2008] $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} \bar{r}_{E_{j,t}} + \beta_{r_f} \bar{r}_{f_{10y,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
B	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.001	(0.616)	1.860	(0.002)	0.018
Dec-07	0.001	(0.593)	1.970	(0.000)	0.020
Jan-08	0.000	(0.707)	1.966	(0.001)	0.021
Feb-08	0.000	(0.884)	1.837	(0.015)	0.021
Mar-08	0.000	(0.959)	1.837	(0.005)	0.022
Apr-08	0.000	(0.906)	1.808	(0.001)	0.023
May-08	0.003	(0.251)	2.829	(0.021)	0.059
Jun-08	0.001	(0.693)	2.079	(0.024)	0.039
Jul-08	-0.001	(0.500)	1.745	(0.053)	0.031
Aug-08	-0.002	(0.203)	1.605	(0.063)	0.026
Sep-08	-0.003	(0.141)	1.506	(0.196)	0.030
Oct-08	-0.007	(0.000)	0.861	(0.675)	0.060
Nov-08	-0.009	(0.000)	0.561	(0.087)	0.025
Dec-08	-0.020	(0.001)	-1.173	(0.000)	0.064
Jan-09	-0.019	(0.003)	-1.080	(0.000)	0.053

Normal Inverse Gaussian					
B	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.000	(0.721)	1.815	(0.005)	0.017
Dec-07	0.001	(0.664)	1.931	(0.000)	0.020
Jan-08	0.000	(0.785)	1.927	(0.001)	0.021
Feb-08	0.000	(0.948)	1.799	(0.018)	0.020
Mar-08	0.000	(0.975)	1.801	(0.007)	0.022
Apr-08	0.000	(0.973)	1.773	(0.001)	0.023
May-08	0.003	(0.255)	2.797	(0.019)	0.059
Jun-08	0.001	(0.702)	2.065	(0.022)	0.039
Jul-08	-0.001	(0.486)	1.733	(0.052)	0.031
Aug-08	-0.002	(0.196)	1.595	(0.063)	0.027
Sep-08	-0.003	(0.137)	1.503	(0.187)	0.030
Oct-08	-0.007	(0.000)	0.865	(0.678)	0.061
Nov-08	-0.008	(0.000)	0.581	(0.104)	0.027
Dec-08	-0.020	(0.001)	-1.131	(0.000)	0.058
Jan-09	-0.019	(0.004)	-1.040	(0.000)	0.048

Variance Gamma					
B	α	p-value	β_E	p-value	Adj R^2
Nov-07	-0.006	(0.000)	-0.014	(0.000)	-0.003
Dec-07	-0.006	(0.000)	-0.014	(0.000)	-0.003
Jan-08	-0.006	(0.000)	-0.014	(0.000)	-0.002
Feb-08	-0.006	(0.000)	-0.014	(0.000)	-0.002
Mar-08	-0.006	(0.000)	-0.014	(0.000)	-0.002
Apr-08	-0.006	(0.000)	-0.013	(0.000)	-0.002
May-08	-0.007	(0.000)	-0.012	(0.000)	-0.003
Jun-08	-0.007	(0.000)	-0.012	(0.000)	-0.002
Jul-08	-0.007	(0.000)	-0.012	(0.000)	-0.002
Aug-08	-0.007	(0.000)	-0.013	(0.000)	-0.002
Sep-08	-0.008	(0.000)	-0.012	(0.000)	-0.002
Oct-08	-0.011	(0.000)	0.011	(0.000)	-0.002
Nov-08	-0.012	(0.000)	0.005	(0.000)	-0.003
Dec-08	-0.015	(0.000)	-0.103	(0.000)	0.005
Jan-09	-0.014	(0.000)	-0.099	(0.000)	0.004

Table 34: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
B	β_E	p-value	Adj R^2
Nov-07	0.656	(0.646)	0.265
Dec-07	0.829	(0.803)	0.260
Jan-08	0.988	(0.985)	0.245
Feb-08	1.060	(0.915)	0.245
Mar-08	1.178	(0.741)	0.243
Apr-08	1.198	(0.747)	0.238
May-08	2.372	(0.110)	0.250
Jun-08	2.060	(0.207)	0.238
Jul-08	1.898	(0.215)	0.229
Aug-08	1.813	(0.235)	0.222
Sep-08	1.103	(0.896)	0.216
Oct-08	-0.855	(0.012)	0.341
Nov-08	-1.364	(0.002)	0.306
Dec-08	-3.604	(0.000)	0.398
Jan-09	-3.193	(0.000)	0.334

Normal Inverse Gaussian			
B	β_E	p-value	Adj R^2
Nov-07	0.606	(0.602)	0.265
Dec-07	0.788	(0.758)	0.260
Jan-08	0.948	(0.933)	0.245
Feb-08	1.024	(0.966)	0.244
Mar-08	1.143	(0.789)	0.242
Apr-08	1.163	(0.789)	0.238
May-08	2.347	(0.113)	0.250
Jun-08	2.046	(0.210)	0.238
Jul-08	1.884	(0.218)	0.229
Aug-08	1.799	(0.239)	0.222
Sep-08	1.109	(0.889)	0.216
Oct-08	-0.830	(0.012)	0.339
Nov-08	-1.328	(0.002)	0.302
Dec-08	-3.568	(0.000)	0.385
Jan-09	-3.166	(0.000)	0.323

Variance Gamma			
B	β_E	p-value	Adj R^2
Nov-07	0.009	(0.000)	0.263
Dec-07	0.009	(0.000)	0.257
Jan-08	0.009	(0.000)	0.241
Feb-08	0.009	(0.000)	0.238
Mar-08	0.009	(0.000)	0.234
Apr-08	0.010	(0.000)	0.229
May-08	0.012	(0.000)	0.212
Jun-08	0.011	(0.000)	0.208
Jul-08	0.012	(0.000)	0.202
Aug-08	0.011	(0.000)	0.197
Sep-08	0.010	(0.000)	0.205
Oct-08	-0.013	(0.000)	0.311
Nov-08	-0.028	(0.000)	0.233
Dec-08	-0.126	(0.000)	0.085
Jan-09	-0.118	(0.000)	0.084

Table 35: Regression results of the model named Basic Modified $\bar{r}_{D_{j,t}} = \alpha_0 + \beta_E \left(h_{E_{j,t}} r_{E_{j,t}} - rf \right) + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal					
B	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.006	(0.000)	-1.004	(0.137)	-0.001
Dec-07	0.006	(0.000)	-1.116	(0.125)	0.000
Jan-08	0.006	(0.000)	-1.103	(0.121)	0.000
Feb-08	0.006	(0.000)	-0.368	(0.122)	-0.003
Mar-08	0.006	(0.000)	-0.457	(0.097)	-0.002
Apr-08	0.004	(0.000)	-0.159	(0.180)	-0.003
May-08	0.003	(0.001)	0.009	(0.222)	-0.003
Jun-08	0.004	(0.000)	0.013	(0.089)	-0.003
Jul-08	0.004	(0.000)	0.144	(0.108)	-0.003
Aug-08	0.004	(0.000)	0.002	(0.048)	-0.003
Sep-08	0.004	(0.000)	-0.149	(0.007)	-0.003
Oct-08	0.004	(0.000)	0.325	(0.000)	0.006
Nov-08	0.004	(0.000)	0.337	(0.000)	0.010
Dec-08	0.003	(0.000)	0.269	(0.000)	0.008
Jan-09	0.003	(0.000)	0.255	(0.000)	0.007

Normal Inverse Gaussian					
B	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.006	(0.000)	-1.022	(0.129)	0.000
Dec-07	0.006	(0.000)	-1.136	(0.117)	0.000
Jan-08	0.006	(0.000)	-1.122	(0.112)	0.001
Feb-08	0.006	(0.000)	-0.386	(0.111)	-0.003
Mar-08	0.006	(0.000)	-0.469	(0.089)	-0.002
Apr-08	0.004	(0.000)	-0.181	(0.167)	-0.003
May-08	0.003	(0.001)	-0.014	(0.204)	-0.003
Jun-08	0.004	(0.000)	-0.007	(0.079)	-0.003
Jul-08	0.004	(0.000)	0.126	(0.097)	-0.003
Aug-08	0.004	(0.000)	-0.013	(0.042)	-0.003
Sep-08	0.004	(0.000)	-0.156	(0.006)	-0.003
Oct-08	0.004	(0.000)	0.323	(0.000)	0.006
Nov-08	0.004	(0.000)	0.337	(0.000)	0.010
Dec-08	0.003	(0.000)	0.272	(0.000)	0.008
Jan-09	0.003	(0.000)	0.257	(0.000)	0.007

Variance Gamma					
B	α	p-value	β_E	p-value	Adj R^2
Nov-07	0.006	(0.000)	0.064	(0.000)	0.006
Dec-07	0.006	(0.000)	0.063	(0.000)	0.005
Jan-08	0.006	(0.000)	0.063	(0.000)	0.005
Feb-08	0.006	(0.000)	0.064	(0.000)	0.005
Mar-08	0.006	(0.000)	0.064	(0.000)	0.005
Apr-08	0.005	(0.000)	0.063	(0.000)	0.005
May-08	0.004	(0.001)	0.063	(0.000)	0.004
Jun-08	0.004	(0.000)	0.063	(0.000)	0.004
Jul-08	0.004	(0.000)	0.063	(0.000)	0.005
Aug-08	0.004	(0.000)	0.063	(0.000)	0.004
Sep-08	0.004	(0.000)	0.062	(0.000)	0.004
Oct-08	0.003	(0.000)	0.073	(0.000)	0.007
Nov-08	0.003	(0.000)	0.077	(0.000)	0.009
Dec-08	0.003	(0.000)	0.077	(0.000)	0.009
Jan-09	0.003	(0.000)	0.076	(0.000)	0.009

Table 36: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.

Normal			
B	β_E	p-value	Adj R^2
Nov-07	-0.140	(0.422)	0.320
Dec-07	-0.429	(0.306)	0.313
Jan-08	-0.471	(0.285)	0.312
Feb-08	0.185	(0.387)	0.307
Mar-08	-0.008	(0.266)	0.310
Apr-08	-0.211	(0.050)	0.342
May-08	-0.473	(0.017)	0.347
Jun-08	-0.282	(0.028)	0.345
Jul-08	-0.253	(0.018)	0.345
Aug-08	-0.426	(0.005)	0.341
Sep-08	-0.638	(0.002)	0.339
Oct-08	0.048	(0.000)	0.344
Nov-08	0.091	(0.000)	0.344
Dec-08	0.117	(0.000)	0.344
Jan-09	0.083	(0.000)	0.342

Normal Inverse Gaussian			
B	β_E	p-value	Adj R^2
Nov-07	-0.150	(0.413)	0.320
Dec-07	-0.445	(0.295)	0.313
Jan-08	-0.486	(0.273)	0.312
Feb-08	0.172	(0.373)	0.307
Mar-08	-0.018	(0.254)	0.310
Apr-08	-0.215	(0.046)	0.342
May-08	-0.477	(0.014)	0.347
Jun-08	-0.292	(0.025)	0.345
Jul-08	-0.261	(0.015)	0.345
Aug-08	-0.430	(0.004)	0.341
Sep-08	-0.637	(0.002)	0.339
Oct-08	0.047	(0.000)	0.344
Nov-08	0.088	(0.000)	0.344
Dec-08	0.116	(0.000)	0.344
Jan-09	0.082	(0.000)	0.342

Variance Gamma			
B	β_E	p-value	Adj R^2
Nov-07	0.029	(0.000)	0.322
Dec-07	0.029	(0.000)	0.314
Jan-08	0.028	(0.000)	0.313
Feb-08	0.029	(0.000)	0.309
Mar-08	0.028	(0.000)	0.311
Apr-08	0.028	(0.000)	0.344
May-08	0.028	(0.000)	0.348
Jun-08	0.028	(0.000)	0.346
Jul-08	0.028	(0.000)	0.346
Aug-08	0.027	(0.000)	0.342
Sep-08	0.027	(0.000)	0.338
Oct-08	0.029	(0.000)	0.345
Nov-08	0.030	(0.000)	0.345
Dec-08	0.031	(0.000)	0.345
Jan-09	0.030	(0.000)	0.343

Table 37: Regression results of the model named Basic $r_{D_{j,t}} = \alpha_0 + \beta_E h_{E_{j,t}} r_{E_{j,t}} + \epsilon_{j,t}$ with the inclusion of time dummies. The last row Jan-09 takes into account for the entire period (from January 2005 to January 2009) while the first line considers only months from January 2005 to November 2007. The other rows must be read in the same way. For each estimated coefficient we report the two tails p-value and in the last column the adjusted coefficient of determination.