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DOES MULTI-DIMENSIONAL OWNERSHIP STRUCTURE MATTER IN FIRM PERFORMANCE? A DYNAMIC FIRM'S LIFE CYCLE PERSPECTIVE

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ABSTRACT

Prior studies on the relationship between ownership and firm performance have produced mixed results; hence, this paper re-examines the relationship using an unbalanced panel pooled sample of 4,443 observations listed in the emerging Taiwanese market. We adopt a dynamic perspective to explore the persistence of the relationship across the life cycle stages of firms over time. Does the impact of ownership on firm performance vary at different life cycle stages? Does it persist across the stages over time? Our empirical results suggest a potential nonlinear relationship between ownership and performance. Furthermore, evidence shows that the impact of ownership on performance is a function of the life cycle effect, where the impact is more pronounced among mature firms over the same period. However, the case is not the same across different periods. To alleviate a potential simultaneity issue, we lag all measures of ownership structure by one year in the fixed-effect regressions framework of panel data. Overall, this paper contributes to ongoing research by extending the importance of the life cycle stages of firms in assessing the impact of ownership on firm performance over time.

JEL : C31; C33; G34

KEYWORDS: Multi-dimensional ownership structure, Performance, Life-cycle stage, Unbalanced panel, Taiwanese market

INTRODUCTION

The Asian Financial Crisis in 1997, the two largest bankruptcies in US history, Enron in December 2001 and WorldCom in July 2002, and the global financial distress in 2008 all point to the importance of corporate governance. Ownership structure is usually considered one of the core internal mechanisms of corporate governance. Does ownership structure affect firm performance? The relationship between ownership structure and corporate performance has received considerable attention in the finance literature. According to the literature, diffuse ownership places significant power in the hands of managers whose interests are not necessarily consistent with—and may even be detrimental to—the shareholders' wealth maximization principle. To constrain or to mitigate managerial opportunism, shareholders use various corporate governance mechanisms to align the interests of managers with those of the shareholders. One mechanism is giving managers equity stakes in firms. The level of the equity stake in the firm explains the positive or adverse relationship between ownership structure and performance, thus giving rise to the convergence-of-interest hypothesis and the managerial entrenchment hypothesis (Jensen and Meckling, 1976; Jensen and Ruback, 1983).

Following Jensen and Meckling (1976), numerous studies have focused on mitigating the conflict of interest between managers and shareholders. Some studies support the existence of a linear relationship, whereas others endorse a non-monotonic relationship between ownership and performance (Morck et al., 1988; McConnell and Servaes, 1990; Adams and Santos, 2006; McConnell et al., 2008). There is a growing consensus that boards have not been sufficiently efficient in monitoring the management, whereas institutional investors have become increasingly willing to use their ownership rights to pressure managers to act in the best interest of the shareholders.

THE LONG-TERM WEALTH EFFECT OF SHARE REPURCHASES EVIDENCE FROM TAIWAN

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ABSTRACT

This paper examines the long-term wealth effect of 948 share repurchase announcements in the Taiwan market. We also investigate what factors determine the wealth effect of share repurchases. Our findings show that share repurchases induce positive buy-and-hold abnormal returns during the 12-month post-announcement period. Undervaluation and unexpected operating profits are the two important factors explaining the wealth effect regardless of firms' investment opportunities. In addition, for firms with poor investment opportunities, estimated repurchase ratio also explains the wealth effect for the two-month period after repurchase announcements but not for the long-term. By contrast, this study does not find the explanatory power of the changes in free cash flow on either the short- or the long-term wealth. The overall evidence supports the undervaluation and the signaling hypotheses, rather than the free cash flow hypothesis.

JEL: G35; G14

KEYWORDS: Share Repurchase; Abnormal Return; Undervaluation; Signaling; Agency Theory

INTRODUCTION

Share repurchases have emerged as a popular payout mechanism in the last decade. For shareholders, share repurchases, which are similar to cash dividends, may convey information about future profitability or represent the firm's commitment to alleviate agency problems (Allen and Michaely, 2003). However, unlike cash dividends, firms are not obligated to accomplish the goals they have set after announcing share repurchases. Thus, the information conveyed by share repurchases is not as reliable as that signaled by dividends.

Share repurchase activity has been allowed in Taiwan since August 2000. Several attempts have been made to determine market reactions to the announcements and determinants which drive the event-period abnormal returns (Chen et al., 2004; Liao et al., 2005; and Lo et al., 2008). However, without a commitment to repurchasing shares, it is possible that the short-term abnormal returns surrounding the announcements are influenced by false information. For instance, the market reacts positively to announcements made by firms that possess potentially serious agency problems. While the market expects the disbursement of excess free cash flow, firms, on the other hand, may simply intend to increase the value of their organization by announcing share repurchases. In this context, examining the short-term abnormal returns may lead to evidence supporting the free cash flow hypothesis, whereas the firms are actually signaling undervaluation. An examination of the long-term abnormal returns can circumvent such concerns. Furthermore, this estimation can also assist in elucidating 1) whether or not share repurchases in Taiwan increase shareholders' wealth in the long-term, and 2) the factors that contribute to long-term wealth.

This paper hence aims to uncover whether share repurchases are capable of increasing shareholders' wealth over the long-term. Based on the evidence presented by Chen et al. (2004), this paper further seeks to discover whether or not the motivation behind repurchasing firms with poor investment opportunities and serious agency problems can be explained by the free cash flow hypothesis over the long-term. In addition, it is also of interest to determine the reasons why firms with a greater number of investment opportunities announce share repurchases, as disbursing excess cash flow is unlikely their purpose.

THE LIQUIDITY EFFECT IN OPTION PRICING: AN EMPIRICAL ANALYSIS

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ABSTRACT

This paper empirically examines whether asset's liquidity can help resolve the known strike-price biases of the Black-Scholes model for different liquidity measures based on trading volume, bid-ask spread and the Amihud's ILLIQ. Our results indicate that, when the underlying asset or its derivative exhibit lower liquidity, the degree of curvature of the strike-price biases will tend to increase, regardless of the liquidity measures used. Furthermore, inspection of R^2 reveals that the stock's liquidity has an excellent ability in explaining the strike-price biases compared with the option's liquidity in terms of the liquidity measures based on trading volume and the Amihud's ILLIQ.

JEL: G10; G12; G13

KEYWORDS: Option Pricing; Liquidity; Stock's Liquidity; Option's Liquidity; Strike-Price Biases

INTRODUCTION

The purpose of this paper is to empirically examine whether the underlying asset's liquidity and its derivative's liquidity have potential to help resolve the strike-price biases associated with the Black-Scholes model (Black and Scholes (1973)) as depicted in Figure 1. While most attempts to explain these pricing errors focus on relaxing the Black-Scholes assumption of constant volatility (Heston, 1993 and Heston and Nandi, 2000), later examinations of stochastic volatility indicate that they cannot fully explain the pattern of the pricing errors and conclude that there is a need for a new explanation for this apparent pricing bias (Bakshi *et al.*, 1997 and Eraker, 2004).

Liquidity, a new perspective on asset pricing, captures our attention on its potential to resolve the known strike-price biases. Cetin *et al.*, (2006) studied the pricing of option in which the stock is not perfectly liquid and concluded that liquidity cost comprises a significant component of an option's price. Liu and Yong (2005) reported that the imperfect stock' liquidity would affect the replication of an option. These results motivated this research. Along the idea of Pena *et al.* (1999), who indicated that explain directly the determinants of the volatility smile is necessary to capture the important reasons behind the apparent failure of Black-Scholes model, we direct our analysis to further investigate the role of the stock's liquidity and its derivative's liquidity in explaining the strike-price biases.

While recent studies point out the choice of liquidity measures may have a significant effect on research outcome (Aitken and Comerton-Forde, 2003), that provides us a strong motivation to employ several different dimensions of liquidity measures to examine whether the liquidity can provide a new explanation for this apparent pricing bias of the Black-Scholes model. Furthermore, this enables us to test whether the effect of liquidity is robust enough for different liquidity measures. This is surely the first contribution of this paper over existing theories.

The second contribution of this paper is that we consider two types of liquidity risk, the underlying asset's liquidity and its derivative's liquidity, into our analysis. It is quite important to notice that these two types of liquidity risk would affect the option price in different way (Liu and Yong, 2005 and Brenner *et al.*, 2001). A possible concern is whether these two types of liquidity risk need to be considered into option pricing model simultaneously. However, the existing empirical literature mostly deals with the effect of the stock's liquidity on the option pricing (Cetin *et al.*, 2006 and Liu and Yong, 2005). In contrast, such

A COMPARISON OF NON-PRICE TERMS OF LENDING FOR SMALL BUSINESS AND FARM LOANS

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ABSTRACT

This study examines differences in terms of lending for small loans among non-farm commercial banks and farm lenders of different sizes. Large farm lenders more frequently require collateral than large commercial banks, while small farm lenders require collateral less frequently than small commercial banks. In addition, there is evidence that small commercial banks require collateral more frequently than large commercial banks. There is no difference in the frequency of collateral use among farm lenders, regardless of size. The type of the collateral used, real estate vs. non-real estate, is also affected by the term of the loan for farm lenders. The longer the term of the loan, the more frequently real estate is used as collateral.

JEL: G2

KEYWORDS: farm lending, role of collateral, terms of lending

INTRODUCTION

Banks set lending terms in a negotiation with borrowers in an effort to earn a target rate of return and manage the probability of default (PD) and loss given default (LGD). Varying interest rates and non-price terms, such as collateral, can reduce the LGD. However, Stiglitz and Weiss (1981) show that raising interest rates and increasing collateral requirements above a maximum amount can actually reduce the expected return to the bank. This occurs because of adverse selection, in which case only the riskiest borrowers will accept the higher interest rates. Because of this behavior, lenders would have more risk than the higher interest rates compensate for, explaining the lower returns to the lender as interest rates increase. Given this situation, it is rational for banks to ration credit (refuse to lend to certain borrowers), rather than attempt to price it with higher interest rates. This explains why total lending volume may decline in response to tightened lending standards.

Small borrowers tend to be more informationally opaque than large, publicly traded firms. There is a large body of research that examines bank relationship lending by banks. In this case, the banks place some reliance upon the prior relationship with a borrower and the knowledge gained from that relationship, such as cash flows observed in checking accounts. Both loans to the small non-farm (commercial) business sector and loans to the small farm sector represent different forms of small business lending. Given the substantial differences in the risk these firms face and the types of assets such firms possess, it is possible that lenders to these two sectors may view collateral in significantly different ways. This may especially be true since farm businesses are characterized by large fixed assets in the form of land and equipment and are subject to a high degree of output price volatility. The remainder of this paper is organized as follows. Section 2 reviews the prior literature. Section 3 discusses the methodology and the empirical model. Section 4 presents the empirical findings, while Section 5 presents the conclusion.

LONG-RUN OPERATING PERFORMANCE OF PREFERRED STOCK ISSUERS

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ABSTRACT

In this paper, we study the long-run operating performance of preferred stock issuers. We use three different measures of operating performance; pre-tax cash flows, profit margin and return on assets. We study the performance of industrial firms, financial firms, and utilities separately, as well as the performance of the whole sample. Our results indicate that the operating performance of preferred stock issuers as a whole declines in the three-years before the issue. We find that profitability continues to decline after the issue. This finding is consistent with earlier findings on bond and common stock issuers. We also find that the decline in profitability is more pronounced for financial firms, although the cash flows of financial firms increase after the offering. The results show that the operating performance after the issue is worse for firms that raise large amounts of capital through the issue. There is also some evidence that preferred stock issuers with information asymmetry have lower operating performance following the issue.

JEL: G30, G32

KEYWORDS: Preferred stock; long-run performance; operating performance

INTRODUCTION

Preferred stock is an essential and popular method of raising capital by firms. During the period 1985-1999, firms raised \$324.63 billion in U.S. markets by engaging in 2,636 preferred stock offerings. Over the same period, firms made 7,017 seasoned equity offerings raising \$606.03 billion (Bajaj, Mazumdar, and Sarin, 2002). Since 1990 the size of the public market for preferred stock quadrupled, reaching \$193 billion in 2005 (Dash, 2009). Despite the importance of preferred stock, there are only a handful of studies on this security. Prior studies such as Wansley et al. (1990), Houston and Houston (1990), Stickel (1991), Rao and Moyer (1992), Lee and Figlewicz (1999), and Callahan, et al. (2001) focus on the announcement returns, characteristics and the motivations of issuing firms. Recently, Howe and Lee (2006) and Abhyankar and Ho (2006) study the long-run stock performance of preferred stock issuers.

In this paper, we study the long-run operating performance of preferred stock issuers. The only other study that examines this issue is Lee and Johnson (2009). We extend previous research by studying the change in operating performance of our sample firms from the period right before the offering, besides raw operating performance. We also contribute to the literature by analyzing the factors that may affect the operating performance of preferred stock issuers. We use recent data and our sample period is long, covering a period of 13 years.

Our sample consists of 1,334 publicly issued non-convertible preferred stock issues offered in US markets between 1992 and 2004. We measure operating performance using three proxies; the cash flows of the firm, the profit margin and the return on assets. We study the performance of industrial firms, financial firms and utilities separately, as well as the performance of the whole sample. We find that the operating performance of firms in all industry types deteriorate gradually until the issuance. Profitability is also lower after the issue compared to the year before the issue. This decrease in performance is more pronounced for financial firms, although there is an increase in the cash flows of these firms. We find

THE CAPITAL ASSET PRICING MODEL'S RISK-FREE RATE

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ABSTRACT

The risk-free rate is an important input in one of the most widely used finance models: the Capital Asset Pricing Model. Academics and practitioners tend to use either short-term Treasury bills or long-term Treasury bonds as the risk-free security without empirical justification. This study investigates the market and inflation risks of Treasury securities with different maturities over different investment horizons. The results show that mean real returns, volatility, and market and inflation risks, of Treasury securities increase with the maturity period. Only Treasury bills do not have any market risk for 1- and 5-year periods, and they have the lowest market risk over 10 years. Although Treasury securities of all maturities have significant inflation risk, Treasury bills have the lowest inflation risk over all three horizons. Further, the inflation beta and explanatory power of inflation for real Treasury bill returns decline with the investment horizon. Over 10 years, inflation and market risks explain only 13% of variations in real Treasury bill returns, compared to 20% of intermediate government bond returns, and 23% of long government bond returns. These findings indicate that Treasury bills are better proxies for the risk-free rate than longer-term Treasury securities regardless of the investment horizon.

JEL: G11; G12

KEYWORDS: Risk-free rate, Capital Asset Pricing Model, investment horizon

INTRODUCTION

The Capital Asset Pricing Model (CAPM), developed by Sharpe (1964) and Lintner (1965), is one of the most widely used models in finance. According to this model, a firm's cost of equity (K_e) is a linear function of its market risk: $K_e = R_f + (R_m - R_f) \beta_e$, where R_f is the risk-free rate, R_m is the expected market return, $(R_m - R_f)$ is the market risk premium, and β_e is the equity beta, denoting market risk.

The importance of identifying appropriate inputs for practical applications of this model has produced a voluminous body of empirical studies, aimed primarily at estimating the market risk premium and beta. The third component of the model — the risk-free rate — has received scant attention. The risk-free rate is an important model input since it not only determines the intercept, but also affects the slope of the linear equation. A higher risk-free rate implies a higher intercept and flatter slope compared to a lower rate. Academics and practitioners tend to use either short-term Treasury bills or long-term Treasury bonds as the risk-free security without empirical justification.

The CAPM is a single-period model, but the period is not specified. In theory, it could be applied to periods of any length, for example, 1, 5, or 10 years. Although a 10-year period does contain 1- and 5-year periods, a 1-year period also contains months and weeks. The length of the period does not matter as long as all the parameters are measured over the same period. Treasury bills, intermediate-term government bonds, and long-term government bonds match the time horizons of short-, medium-, and long-term investments, respectively. Matching the maturity period of the risk-free security with the investment horizon minimizes interest rate risk, although it does not eliminate inflation risk, and its effect on market risk is an empirical issue.

EQUITY MARKET TIMING AND SUBSEQUENT DELISTING LIKELIHOOD

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ABSTRACT

Timing the market for equity is an accepted practice by managers who in theory have the best interests of current shareholders in mind. It is clear that by using their superior information, managers can indeed successfully issue overvalued equity to the new shareholders. Recent research has determined that some firms do well after a market timed issue, while others underperform. The post-issue performance is linked to the investment opportunity set of the issuing firms as well as their choice of investments. In general, firms without good investment options will perform poorly. We extend this line of research by studying the post-issue delisting pattern of market timing firms and the two subsets. Specifically, we research whether firms that mistakenly time the market for equity are more likely to compromise their future and get delisted (through acquisitions, bankruptcies etc.) in the immediate future than those firms that have a use for the funds. Using logistic regression models, we show that firms that are market timing firms and that lack good investment opportunities are indeed more likely to get delisted; strengthening the growing argument that equity market timing does not always result in shareholder benefit.

JEL: G14, G32

KEYWORDS: equity market timing, delisting likelihood

INTRODUCTION

Seasoned equity offerings (SEOs) have been events of considerable interest in terms of financial research. The announcement period impacts of SEO as well as the long-run impact on the issuing firm's stock price have been studied. In general most researchers have observed a significantly negative announcement effect as well as significant long run underperformance for issuing firms.

Baker and Wurgler (2002) summarize the research conclusions documenting post-issue underperformance and offer the under-performance as evidence that managers are able to time the market for equity. The reasoning being, that by timing the market, these managers are presumed to be taking advantage of the new, entering shareholders and adding benefit to the current shareholders at the new shareholders' expense.

In the more recent past, however, there has been new research that challenges the statement made by Baker and Wurgler (2002) and these research papers make one crucial change to the way we view SEO research. In previous studies SEO issuing firms were typically studied as one sample. Hertzels and Li (2009), and D'Souza and Rao (2009) move away from that model and divide SEO firms into two subsets based on their ability to productively use the funds raised. Both papers make the startling find that not all SEO issuing firms underperform, just the ones that are not in the best position to use additional funds.

We further this new research by providing additional evidence on the SEO issuing firms. Most studies with regard to SEOs have spanned 3-5 years and have focused on performance. We felt that it was important to research the long term impact that equity market timing has on the survival of these firms. We thus use the methodology of D'Souza and Rao (2009) to create the two subsets of issuing firms. Using a time horizon of eight years, we provide evidence that besides simply underperforming, managers

THE VALUATION OF RESET OPTIONS WHEN UNDERLYING ASSETS ARE AUTOCORRELATED

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Shih-Cheng Lee, Yuan Ze University
Yu-Ting Chen, National Cheng Kung University

ABSTRACT

This paper introduces the autocorrelation effect of assets' returns into the valuation model of reset options. The MA(q) process, which is an extension of MA(1) process noted by Liao and Chen (2006), is applied to the valuation of reset options in this paper. Due to the impact of autocorrelation on the volatility of assets' returns, the probability of reset and the value of reset option are affected. Positive autocorrelation increases the value of a reset option by increasing the probability of reset. On the contrary, negative autocorrelation decreases the probability of a reset and reset premium. Moreover, the reset timing is affected by the autocorrelation characteristics. In the case of positive autocorrelation, the investors tend to reset earlier to prevent a possible loss. Positive autocorrelation is also significant for the hedging of reset options. This paper demonstrates that positive autocorrelation characteristics lessens the delta jump and gamma jump problem.

JEL: G12, G13

KEYWORDS: Reset Option, Autocorrelation; MA(q) process, Delta Jump; Gamma Jump

INTRODUCTION

To give investors more protection, increasing numbers of derivatives with embedded reset clauses have become available. These reset clauses can be exercised at any time during the life of the contract or only limited to some predetermined dates. The reset clauses commonly contain the date of maturity or the strike price. Options with reset rights on the maturity date commonly exist in crude oil offshore exploration and production contracts. This reset clause allows the holder to reset the maturity of the investment option and to look for better investment conditions. Crude oil price is the critical factor affecting the value of this kind of option. If crude oil price movements can be forecast by certain models, the value of the reset clause might be affected.

The model derived from Liao and Chen (2006) is an important contribution pricing of a vanilla option whose underlying asset has autocorrelation characteristics. However no existing studies consider the impact of this autocorrelation characteristic on the value of a reset option. Due to the path dependence of reset options, it is reasonable to expect that the impact of autocorrelation on the prices of reset options might be augmented. Many studies have demonstrated different valuation models for reset options with different reset conditions. The main objective of this paper is to apply a MA(q) process, which is an extension of MA(1) process mentioned by Liao and Chen (2006), to capture the effect of autocorrelation. We also discuss the impact of autocorrelation on a valuation model of a reset option.

The remainder of this paper is organized as follows. In Section 2, we introduce the autocorrelation effect and formulate modified valuation models for four kinds of options with reset rights embedded. The autocorrelation impact and the types of reset options are based on the previous studies of Gray and Whaley (1997, 1999), Cheng and Zhang (2000), Liao and Wang (2002), Liao and Chen (2006). In Section 3, we demonstrate the numerical analysis to compare the difference properties between the traditional reset option model and the proposed model. Finally, Section 4 provides some concluding comments.

IMPLIED INDEX AND OPTION PRICING ERRORS: EVIDENCE FROM THE TAIWAN OPTION MARKET

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ABSTRACT

This study examines both restricted and unrestricted Black-Scholes models, according to Longstaff (1995). Using the Taiwan index options for each day from January 2005 to December 2008, the unrestricted model simultaneously solves the implied index value and implied volatility whereas the restricted model only solves the implied volatility. Next, this study compares the pricing performance of restricted and unrestricted Black-Scholes models. The empirical results show the implied index value is almost higher than the actual index value. Moneyness has a significant negative impact on the index pricing error for calls but negative impact for puts. Open interest has a significantly negative impact on the index pricing error for calls. Volatility for calls has no significant effect on the index pricing error. The path-dependent effect on index pricing error increases with index returns. The unrestricted model has significantly less option pricing bias for calls than the restricted model. The option pricing error for calls in the restricted model has much larger negative bias near the middle maturity. The R-square in the restricted model is always much larger than the unrestricted model for both calls and puts. Finally, the option pricing errors are significantly affected by moneyness and time to expiration for all cases; this fact is consistent with Longstaff (1995). Additionally, based on the criterion of adjusted R-square, this study investigated the optimal explanatory variables of index pricing error.

JEL: G12; G13; G14

KEYWORDS: Index pricing error, option pricing error, Black-Scholes, implied volatility, implied index

INTRODUCTION

Under the assumptions that agents are risk neutral and rational, Samuelson (1965) proved that futures prices must be martingales with respect to the information set. According to the theory about the Martingale property and no arbitrage opportunity, Black and Scholes (1973) and Merton (1973) developed the option pricing framework. Option pricing theory can be viewed as a main pillar of modern finance theory. Harrison and Kreps (1979) showed that violations of a martingale restriction on the expected future stock price under a risk-neutral density represent arbitrage opportunities in frictionless security markets. Similarly, under the no-arbitrage condition, the value of a European option is given by its expected future payoff under a risk-neutral probability measure discounted at the riskless interest rate. Restated, in the no-arbitrage framework, the underlying asset price implied by the option pricing model must be equal to its actual market price. This means that the cost of a synthetic position via the option market is equal to the price of the underlying asset. However, because of market frictions and the unrealistic assumption in option pricing models (e.g. Black-Scholes (simply B-S)), the implied price need not equal its actual market price.

Longstaff (1995) showed that the implied index value is nearly higher than the actual index value. In this paper, we attempt to verify the results of Longstaff (1995). Additionally, following Longstaff (1995), this study examines both the restricted and unrestricted B-S models. Using the Taiwan Index Options (TXO) data for each day, the unrestricted model simultaneously solves the implied index value and implied volatility whereas the restricted model only solves the implied volatility. Naturally, the implied index need not be equal to the actual index. Having an extra parameter, however, the unrestricted model should fit the actual option prices better. There are the following reasons why TXO is examined to verify the results of Longstaff. First, American options are used as sample in Longstaff (1995), while the B-S model is based on European options. TXO with European-style contracts therefore is more in line with

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