



# Valuing Securities Using the Option Pricing Method

By Frank Kiepura

**T**he option pricing model (OPM) is a popular and commonly used model to allocate equity value to securities in the complex capital structures of privately held companies. Given the absence of active markets for privately issued securities, one of the challenges that valuation specialists face is determining how to allocate value to each specific security in the capital structure. Although the OPM is one of the more common methods, choosing it as the optimal allocation technique is dependent on certain characteristics of the company. The OPM is most appropriate for companies with longer liquidity event timelines and access to a variety of exit options; the model also works well in valuing option-like payoffs (e.g., common stock options and warrants). Using an example of a complex privately held company, the author constructed a hypothetical capital structure that incorporates the characteristics associated with choosing the OPM. The

results are analyzed with respect to the Black-Scholes option pricing model and how changes to its parameters can affect allocations of value.

## The OPM

Many venture capital and private equity backed companies are financed through a combination of different equity securities, each of which provides its holders with unique rights. Because of the high risks associated with investments in privately held companies, investors often require different classes of equity that convey various rights to their holders. In many capital structures of privately held companies, these classes of equity consist of preferred shares, common shares, options, and other securities, all of which provide different sets of preferences and privileges. The purpose of granting different rights to different groups of investors is to facilitate financing through capital investments at various

stages of enterprise development. By issuing different classes of securities with different rights, companies create a situation where some securities have more economic privileges than others, and thus more value.

The OPM is a method for allocating equity value to multiple classes of securities in a company's capital structure—it is not a method for estimating the enterprise value for the entire company. An overall equity value must first be estimated using the valuation methods under the asset, income, and market approaches before the OPM can be applied. The OPM is a tool to allocate equity value; therefore, the value of any debt should be removed from the enterprise value.

The OPM works by treating each class of security as a call option on the total equity value of the company. To accomplish this, OPM typically employs the Black-Scholes model to value the call options. The Black-Scholes model incorporates the parameters of stock price, exercise price, time, volatility, and risk-free rate to determine the price of a European call option. In the OPM, the stock price becomes the company's total equity value, and the exercise price becomes the liquidation preference of the security. When the OPM utilizes the Black-Scholes model, it becomes highly sensitive to estimates for time to liquidity and volatility. The following is a detailed step-by-step process for applying the OPM.

**Step 1: Analyze the capital structure.** Identify and understand the subject company's equity interests outstanding as of the valuation date. In addition to common equity, a company's capital structure can include preferred shares, restrictive shares, options, warrants, and other dilutive securities. Estimating the value of each of these different classes of equity requires an analysis of the rights associated with each class. Generally, preferred shareholders have economic

or control rights. Economic rights are designed to provide preferred shareholders with superior economic returns as compared to common shareholders. These rights include preferred dividends, redemption rights, conversion rights, and participation rights; these are key to understanding liquidation preferences.

**Step 2: Calculate each breakpoint.** A breakpoint is the point at which each class of equity reaches in-the-money status. The value in excess of any given breakpoint is equal to a call option on the total equity value of the company.

**Step 3: Determine Black-Scholes parameters.** The OPM typically employs the Black-Scholes option pricing model to treat the different classes of securities as call options on the company's equity value. The following are the inputs and assumptions, some of which require a significant degree of judgment:

■ **Stock price.** The stock price in the OPM is the total equity value of the subject. The total equity value is estimated from the application of traditional valuation methods under the asset, income, and market approaches. If the company's enterprise value contains debt, the fair value of the debt should be subtracted to derive the equity value.

■ **Exercise price.** The exercise price represents the equity value break point determined in Step 2.

■ **Time to liquidity.** A single point is estimated for the liquidity event. Estimates for the time to liquidity can generally be derived by reference to management's expected time to exit scenarios.

■ **Volatility.** Volatility can be derived from observed volatilities of guideline public companies, benchmarks, and other sources. For early stage companies, volatility will often approach the upper end of observed volatilities for guideline public companies. The range of guideline public company stock returns should equal the same period as the estimated time to liquidity.

■ **Risk-free rate.** The risk-free rate is derived from the yield on U.S. Treasury instruments with a term equal to the time to liquidity utilized in the OPM.

**Step 4: Calculate each breakpoint value.** The call option value for each breakpoint can be determined using the Black-Scholes model. The call option value of the range between adjacent breakpoints is allocated to each security class.

**Step 5: Allocate incremental option values.** Allocate the incremental option values ownership interests to arrive at the per-share value of the equity securities.

### Comprehensive Illustration

The following illustration is an example of how to utilize the OPM to value the equity securities of a privately held company with a complex capital structure. To provide an example of a company that a valuation specialist would encounter in practice, securities with different issue dates and their own particular set of economic rights are examined. The selection of a specific method to allocate value among different equity securities depends upon various factors related to the specific facts and circumstances of the company and its various classes of equity securities.

Consider the hypothetical example of Cotopaxi Tech, a venture capital-backed startup, initially funded with the owners' capital in 2010. The company's owners currently hold 2 million common shares, which is the total amount of common shares issued and outstanding.

From 2010 to 2016, Cotopaxi Tech issued several financing rounds consisting of Series A preferred stock. As of the valuation date, there were 15 million Series A shares outstanding with a liquidation preference of \$1.30 per share. Series A shareholders are entitled to either participate in its liquidation preference or convert into common stock on a one-for-one basis. Series A preferred shareholders earn a cumulative dividend of 10% per annum, payable upon the

**EXHIBIT 1 - Capital Structure**

	Liquidation Preference	Exercise Price	Shares Outstanding	Conversion Ratio	Fully Diluted Shares (FDS)	Percentage of FDS
Series B	\$7,500,000	-	5,000,000	1.0	5,000,000	13.9%
Series A Dividend	\$6,000,000	-	-	-	-	0.0%
Series A	\$19,500,000	-	15,000,000	1.0	15,000,000	41.7%
Common Shares	-	-	2,000,000	1.0	2,000,000	5.6%
Options	-	0.75	1,000,000	1.0	1,000,000	2.8%
Warrants I	-	2.00	10,000,000	1.0	10,000,000	27.8%
Warrants II	-	3.00	3,000,000	1.0	3,000,000	8.3%
<b>Total</b>	<b>\$33,000,000</b>		<b>36,000,000</b>		<b>36,000,000</b>	<b>100.0%</b>

**EXHIBIT 2 - Breakpoint Calculations**

		Break-points							
		#1	#2	#3	#4	#5	#6	#7	#8
<b>Preferred Securities</b>									
Series B		\$0	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000
Series A Dividend		-	-	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Series A		-	-	-	19,500,000	19,500,000	-	-	-
Liquidation Preference	A	\$0	\$7,500,000	\$13,500,000	\$33,000,000	\$33,000,000	\$13,500,000	\$13,500,000	\$13,500,000
<b>Equity Shares</b>									
Series B		-	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Common Stock		-	-	-	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Options		-	-	-	-	1,000,000	1,000,000	1,000,000	1,000,000
Series A		-	-	-	-	-	15,000,000	15,000,000	15,000,000
Warrants I		-	-	-	-	-	-	10,000,000	10,000,000
Warrants II		-	-	-	-	-	-	-	3,000,000
Total Outstanding Shares	B	-	5,000,000	5,000,000	7,000,000	8,000,000	23,000,000	33,000,000	36,000,000
Price Per Share	C	-	-	-	-	0.75	1.30	2.00	3.00
Incremental Equity	B X C	-	-	-	-	\$6,000,000	\$29,900,000	\$66,000,000	\$108,000,000
Less Proceeds From Options		-	-	-	-	(750,000)	(750,000)	(750,000)	(750,000)
Less Proceeds From Warrants I		-	-	-	-	-	-	(20,000,000)	(20,000,000)
Less Proceeds From Warrants II		-	-	-	-	-	-	-	(9,000,000)
Incremental Equity, Net	D	-	-	-	-	\$5,250,000	\$29,150,000	\$45,250,000	\$78,250,000
<b>Break-points</b>	A + D	\$0	\$7,500,000	\$13,500,000	\$33,000,000	\$38,250,000	\$42,650,000	\$58,750,000	\$91,750,000

sale or liquidation of the company; as of the valuation date, the cumulative dividends are \$6 million. The company issued warrants in connection with the sale of Series A that entitles the holder to purchase the company’s preferred shares; as of the valuation date, Cotopaxi Tech had 10 million warrants outstanding at an exercise price of \$2.00 per share (Warrants I) and 3 million warrants outstanding at an exercise price of \$3.00 per share (Warrants II).

In July 2016, the company issued 5 million Series B preferred shares, with a liquidation preference of \$1.50 per share. According to the shareholder’s agreement, Series B investors are to receive a return on their investment before distributions are made to all other shareholders. After an event resulting in a return on their investment, Series B automatically convert to common shares on a one-for-one

basis. Cotopaxi Tech granted options to officers and employees to purchase common shares under its stock option plan. The options have an exercise price of \$0.75 per option and expire 10 years from the grant date. As of the valuation date, there are 1 million options outstanding and convert to common shares on a one-for-one basis.

Cotopaxi Tech retained the services of a valuation specialist to estimate the fair value of its common stock as of June 30, 2018. The company’s enterprise value was estimated using the asset, income, and market approach methods, resulting in a total equity value for the company of approximately \$40 million.

**Step 1: Analyze the Capital Structure**

Understanding the company’s capital structure is key to successfully

implementing the OPM. Information regarding the rights, privileges, and preferences of securities can be found in the company’s purchase agreements, shareholder agreements, and discussions with management.

Series B holders have preference over all other securities and receive a return on their original investment before distributions can be made to any of the other equity securities. Upon the receipt of their initial investment, the shares convert to common shares on a one-for-one basis. Series A cumulative dividends are due upon a qualifying liquidation event and are payable prior to the liquidation preference or conversion of series A to common shares. Series A holders have the option to either participate in the proceeds of a liquidation event or convert into common shares on a one-for-one basis upon the closing of such an event. Common shares receive distributions *pari passu* with other converted and dilutive securities. Options, and warrants, will be exercised based on their lowest to highest exercise prices. The fully diluted number of common shares in this illustration is 36 million. *Exhibit 1* summarizes Cotopaxi Tech’s capital structure.

**Step 2: Calculate Each Breakpoint**

When allocating a company’s total equity value to multiple classes of securities, a valuation analyst should consider ownership in each security as a right to receive a portion of the proceeds from a liquidity event. A liquidity event can be achieved through dissolution, strategic sale, initial public offering (IPO), or other transaction. In a privately held company, there can be many different classes of equity. To allocate value to each one of these classes of equity, a breakpoint needs to be determined for each security. A breakpoint can be thought of as the point where a security reaches in-the-money status through a hypothetical liquidity event. In other

words, each security reaches certain economic milestones at different levels of proceeds; in the OPM, these levels of proceeds from a liquidity event form the breakpoints. *Exhibit 2* calculates the breakpoints for each class of security after the liquidation preferences have been settled in full and the equity securities begin to participate in the proceeds.

**Breakpoint #1.** In this example, proceeds from a liquidity event are paid first to the holders of Series B, to the extent of each holders' unreturned capital investment. Series B shareholders have a liquidation preference of \$1.50 per share, with 5 million shares outstanding; as a result, Series B holders will receive proceeds up to \$7.5 million before any of the other equity securities can participate. Thus, the first breakpoint is \$0.0 to \$7.5 million.

**Breakpoint #2.** After the Series B shareholders receive their liquidation preference, additional proceeds above the \$7.5 million breakpoint will be paid to the holders of Series A cumulative preferred dividends. Any cumulative dividends due at the liquidation date are to be paid prior to the liquidation preference of the Series A shareholders. As of the valuation date, there were \$6 million in unpaid cumulative dividends; therefore, the payoff to the Series A cumulative dividend will constitute the second breakpoint from \$7.5 million to \$13.5 million.

**Breakpoint #3.** The third payoff will be to the holders of Series A preferred shares, to the extent of each holders' unreturned capital investment. Series A shareholders have a liquidation preference of \$19.5 million, and any proceeds above the second breakpoint will go to Series A shareholders. The third breakpoint will be from \$13.5 million to \$33 million.

**Breakpoint #4.** Common equity will begin to participate in liquidation proceeds once liquidation preferences of all the preferred shares have been fulfilled. The common shareholders will receive proceeds when the company's distribu-

Break-points	Series A		Common				
	Series B	Dividend	Series A	Shares	Options	Warrants I	Warrants II
\$0.0 to \$7,500,000	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
\$7,500,000 to \$13,500,000	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
\$13,500,000 to \$33,000,000	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
\$33,000,000 to \$38,250,000	71.4%	0.0%	0.0%	28.6%	0.0%	0.0%	0.0%
\$38,250,000 to \$42,650,000	62.5%	0.0%	0.0%	25.0%	12.5%	0.0%	0.0%
\$42,650,000 to \$58,750,000	21.7%	0.0%	65.2%	8.7%	4.3%	0.0%	0.0%
\$58,750,000 to \$91,750,000	15.2%	0.0%	45.5%	6.1%	3.0%	30.3%	0.0%
\$91,750,000 to <	13.9%	0.0%	41.7%	5.5%	2.8%	27.8%	8.3%

tions owed to the Series B and Series A preferred shareholders have been paid. The fourth breakpoint to the common shareholders begins at \$3 million, which is the amount after the \$7.5 million payoff for Series B, \$6 million payoff for the Series A cumulative dividend, and \$19.5 million payoff for Series A. Series B also benefits from its conversion to common shares once the shareholders have received all their unreturned capital investment. After Series B converts to common shares, there will be 7 million total shares outstanding; therefore, all proceeds from \$33 million to the next breakpoint will be distributed to the common and Series B shareholders on a pro rata basis.

**Breakpoint #5.** The next breakpoint corresponds to the exercise of outstanding options. Under the OPM, it is assumed that all options and other dilutive securities as of the valuation date will be exercised upon a liquidity event. Cotopaxi Tech's options have an exercise price of \$0.75 per share, so the exercise of the options will add 1 million shares to the total outstanding shares and provide cash proceeds of \$750,000. The cash proceeds from the exercise will reduce the incremental equity by \$750,000, to \$5.25 million, as calculated in *Exhibit 2*. Options will be exercised only when the 8 million total outstanding shares have a per-share price of \$0.75. For the option holders to find it economically beneficial to exercise, the liquidity event would have to provide an additional \$5.25 million in proceeds. Before that point, the option's pro rata allocation of proceeds would be less

than their exercise price of \$750,000. Therefore, the breakpoint #3 floor of \$33 million plus \$5.25 million gives us the next breakpoint at \$38.25 million.

**Breakpoint #6.** Series A can benefit economically from its liquidation preference or its conversion to common shares. Breakpoint #6 is the incremental amount of liquidation proceeds where Series A shareholders will find it economically beneficial to forgo its liquidation preference and convert to common shares. For Series A shareholders to find it more beneficial to convert to common shares, they must receive more than their liquidation preference of \$19.5 million. The conversion of Series A will add 15 million shares, for a total of 23 million shares outstanding. When Series A converts to common shares, Cotopaxi Tech will no longer be liable for the original liquidation preference of \$19.5 million and the liability prior to the equity participation will decrease to \$13.5 million (i.e., the Series B and Series A dividend). For Series A to receive a pro rata amount of \$19.5 million, additional net incremental equity of \$29.15 million will need to be added to a new floor preference of \$13.5 million. At breakpoint #6, Series A preferred stock will constitute 65.2% of shares outstanding and will share proceeds pari passu with the common shares and option holders.

**Breakpoint #7.** Like options, Warrants I have an exercise price, and therefore will dilute the company's equity and provide cash proceeds. There are 10 million Warrants I with an exercise price of \$2.00. Warrants I holders will

EXHIBIT 4 - Call Option Value

	Break-points							
	#1	#2	#3	#4	#5	#6	#7	#8
Total Firm Value	\$40,000,000	\$40,000,000	\$40,000,000	\$40,000,000	\$40,000,000	\$40,000,000	\$40,000,000	\$40,000,000
Break-points	0	7,500,000	13,500,000	33,000,000	38,250,000	42,650,000	58,750,000	91,750,000
Black Scholes Inputs								
Years to Liquidity Event	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Volatility	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%	80.0%
Risk-Free Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Call Option Value	40,000,000	33,935,184	30,393,433	22,895,835	21,481,600	20,422,584	17,279,014	13,029,043
Incremental Option Value	\$6,064,816	\$3,541,751	\$7,497,598	\$1,414,236	\$1,059,016	\$3,143,570	\$4,249,970	\$13,029,043

therefore pay \$20 million to convert to 10 million common shares. The conversion of Warrants I will increase the total to 33 million shares outstanding. Consequently, a liquidation event would have to add \$66 million in proceeds, less the proceeds from the option exercise of \$750,000 and less the proceeds from the Warrants I exercise of \$20 million for a net incremental increase of \$45.25. Warrants I holders will not exercise their option to convert to common shares until liquidation proceeds reach \$58.75 million and above. Below that amount, their pro rata share of proceeds would not equal their cost to exercise.

**Breakpoint #8.** Warrants II will be the final security to exercise, at \$3.00 per warrant. Warrants II holders will need to pay \$9 million to convert to common shares; at this point, equity will be fully diluted at 36 million shares. Additional proceeds of \$108 million, net contributions from option and warrants, will produce net incremental equity of \$78.25 million, at which point it will be economically viable for the holders of Warrants II to exercise.

*Exhibit 3* summarizes the breakpoints and illustrates the ownership interest of each security. The ownership interest is calculated by dividing an individual security's shares by the fully diluted shares outstanding at each breakpoint. These percentages are used to allocate value to each security in Step 5.

### Step 3: Determine Black-Scholes Parameters

Once the capital structure has been analyzed and the breakpoints for each class of equity have been calculated, the next step is to derive the value of the call options using the Black-Scholes model. The Black-Scholes model has the following critical inputs: the total equity value for the company; the exercise price for each breakpoint; the expected time to liquidity; the volatility of the equity for the company; and the risk-free rate.

In this illustration, Cotopaxi Tech's equity value is estimated to be \$40 million using the asset, market, and income approaches to valuation. In the OPM, the exercise prices in the Black-Scholes model correspond to the breakpoints calculated in *Exhibit 2*. Management estimated that a liquidity event will occur in three years. A volatility of 80% for the equity of the company was estimated using observed volatilities of comparable guideline public companies and a risk-free rate of 2.0% was derived from the yield on U.S. Treasury Bonds as of the valuation date.

### Step 4: Calculate Each Breakpoint Value

The Black-Scholes model can now be applied to determine the call option value for each breakpoint. The results of the OPM are summarized in *Exhibit 4*.

The OPM treats each breakpoint as a call option on the company's equity

value. The calculation of value at each breakpoint can be determined using the Black-Scholes model. In our illustration, the option to purchase the company for \$0 has a value of \$40 million, the option to purchase the company for \$7.5 million has a value of \$33,935,184, and so on. The Black-Scholes model calculates the value of each breakpoint in its entire amount. However, liquidation preferences are incremental, as they increase from one liquidity event to the next. For example, proceeds from \$0.0 to \$7.5 million from a liquidity event are allocated 100% to series B, yielding breakpoint #1. Any proceeds between \$7.5 million and \$13.5 million go to Series A cumulative dividends, which yields a range of \$6 million between breakpoints #2 and #3. In *Exhibit 4*, a range is the difference between two adjacent breakpoints and it is the value of these ranges that are allocated to the securities in order to determine their per-share value. The option value of the ranges can be derived by calculating the incremental value of the option. As shown in *Exhibit 4*, the incremental option value for breakpoint #1 is \$6,064,816 (40,000,000 – 33,935,184) and \$3,541,751 for breakpoint #2 (33,935,184 – 30,393,433). The same approach is used to determine the value of all the ranges up to breakpoint #7. The entire amount of the call option value for breakpoint #8 is used, because this is the point where all securities in the capital struc-

ture participate in the proceeds of a liquidation event. The sum of the incremental option values should equal the company's total equity value of \$40 million.

### Step 5: Allocate Incremental Option Values

The final step is to allocate the incremental option values to each security, based upon their ownership interests at each breakpoint. These ownership interests were calculated and summarized in *Exhibit 3*. *Exhibit 5* demonstrates the process of allocating value to each security.

As shown in *Exhibit 5*, series B is allocated the entire amount of the first breakpoint, Series A dividends are then allocated 100% of breakpoint #2, Series A preferred shares receive 100% of breakpoint #3 and so forth. The total allocated amounts should equal the incremental option values in *Exhibit 4*. Adding the allocated values across for each security will yield their total aggregate values. The aggregate values can be converted to per-share amounts, as shown in *Exhibit 6*.

There are several key metrics in assessing the OPM output of Exhibit 6. First, the sum of the allocated values to each security must equal the company's total equity value of \$40 million. Second, the sum of the fully diluted shares (FDS) equals 36 million, which corresponds to the amount from the capital structure table. Finally, the rank of the per-share values is consistent with each security's liquidation preferences, exercise prices, and conversion rights.

### Market Value, Volatility, and Time

The results in *Exhibit 6* confirm expectations regarding the value of each

security with respect to the Black-Scholes model. The most influential factor on option price is the current market value of the underlying asset. As can be observed with the per-share values, securities with senior ranking liquidation preferences are the most valuable. For example, the highest-ranking liquidation preference of Series B results in those shares having the highest value at \$2.17 per share. This makes sense, because the call option's strike price is the lowest relative to the market value of the underlying asset. In other words, Series B's breakpoint is below the company's total equity value, putting it in-the-money. As the company's securities move from in-the-money to out-of-the-money relative to the company's equity value, their per share prices decrease accordingly.

The Black-Scholes model is also highly sensitive to volatility and time. The reason for this shift is that, as volatility increases, there is a greater probability that the company's value will increase or decrease. The owner of a call option benefits from increases in stock price, but has limited downside risk in the event of price decreases,

because the loss is limited to the price of the option. This means that the junior ranking liquidity preference shareholders will benefit more from the possibility that the company's value will converge to their breakpoints. Similarly, call options become more valuable as the time to expiration increases, because there is more time for the value of the underlying asset to increase. In both situations, per-share value shifts from senior-ranking securities to junior-ranking securities. As mentioned before, the OPM is an allocation model and thus a zero-sum game. The only impact that changes to volatility and time can have is on the allocation of value between the securities. ■

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EXHIBIT 5 - Allocate Incremental Option Value								
Ownership Interests	Break-points							
	#1	#2	#3	#4	#5	#6	#7	#8
Series B	100.0%	0.0%	0.0%	71.4%	62.5%	21.7%	15.2%	13.9%
Series A Dividend	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Series A	0.0%	0.0%	100.0%	0.0%	0.0%	65.2%	45.5%	41.7%
Common Shares	0.0%	0.0%	0.0%	28.6%	25.0%	8.7%	6.1%	5.6%
Options	0.0%	0.0%	0.0%	0.0%	12.5%	4.3%	3.0%	2.8%
Warrants I	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.3%	27.8%
Warrants II	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Incremental Option Value</b>								
Series B	\$6,064,816	\$0	\$0	\$1,010,168	\$661,885	\$683,385	\$643,935	\$1,809,589
Series A Dividend	-	3,541,751	-	-	-	-	-	-
Series A	-	-	7,497,598	-	-	2,050,154	1,931,805	5,428,768
Common Shares	-	-	-	404,067	264,754	273,354	257,574	723,836
Options	-	-	-	-	132,377	136,677	128,787	361,918
Warrants I	-	-	-	-	-	-	1,287,870	3,619,179
Warrants II	-	-	-	-	-	-	-	1,085,754
Total	\$6,064,816	\$3,541,751	\$7,497,598	\$1,414,236	\$1,059,016	\$3,143,570	\$4,249,970	\$13,029,043

EXHIBIT 6 - Per Share Values			
	Aggregate Equity Value	FDS	Per Share Value
Series B	\$10,873,779	5,000,000	2.17
Series A Dividend	\$3,541,751	-	-
Series A	\$16,908,325	15,000,000	1.13
Common Shares	\$1,923,585	2,000,000	0.96
Options	\$759,759	1,000,000	0.76
Warrants I	\$4,907,048	10,000,000	0.49
Warrants II	\$1,085,754	3,000,000	0.36
Total	\$40,000,000	36,000,000	