

Should Goldman Sachs and Morgan Stanley try to get half price on the TARP warrants?

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Abstract

The cancellation provisions in the Troubled Asset Relief Program (TARP) warrant agreements loom large for the investment banks Goldman Sachs and Morgan Stanley in the summer of 2009. These banks could gain hundreds of millions of dollars by issuing equity to satisfy the cancellation provisions of the TARP warrant agreements. Nevertheless, they could maximize the value of these provisions by postponing an equity issuance if they could afford to wait until December of 2009 to unwind the TARP investments.

Keywords: bailout, options, TARP, valuation, warrants



1. Introduction

The very quotable CEO of JP Morgan Jamie Dimon remarked that his bank should be allowed to cancel half the TARP warrants that it issued “out of fairness.”¹ Instead, his firm decided to let the U.S. Treasury auction the taxpayers’ warrants, all 88 million of them.² Yet, JP Morgan’s investment banking rivals in July 2009 still had the opportunity to get half-off on the TARP warrants. These latter two banks in July 2009 had the option to profitably cancel half the TARP warrants by issuing equity.

Goldman Sachs and Morgan Stanley paid back their TARP preferred stock on June 17, 2009. Each bank received \$10 billion in exchange for preferred stock and warrants from the Capital Purchase Program (CPP) on October 28, 2008, in response to the worst financial crisis since the Great Depression. Warrants are call options that increase the number of shares of a company’s stock outstanding. Despite repaying the taxpayers’ preferred stock investment, the warrants that they issued to taxpayers were still outstanding on July 13, 2009, according to the authors’ analysis.

In order to increase the chances that they were in the first group of big banks to exit TARP, both firms conducted large seasoned equity offerings in April, May, and June. The Federal Reserve, which was in charge of the process, set common equity capital as its metric for the stress test. Moreover, the ability to raise new debt and common equity without government assistance was part of the Federal Reserve’s criteria for exiting TARP. Goldman Sachs (GS) raised gross proceeds of \$5.75 billion, while its rival Morgan Stanley (MS) raised \$6.34 billion in the months between receiving TARP funds on October 28, 2008, and paying them back on June 17, 2009. According to the Securities Purchase Agreements section 4.4 and section 13(H), both banks can cancel half the TARP warrants if they issue common or preferred stock in the amount of \$10 billion prior to January 1, 2010. In the purchase agreement, cancelling half the warrants by issuing equity is referred to as a Qualified Equity Offering (QEO). Thus, GS and MS are \$4.25 billion and \$3.66 billion, respectively, short of a QEO, according to Table 1 of the authors’ analysis.

Depending on the transaction costs, they can increase shareholder value by hundreds of millions of dollars by completing a QEO in July 2009. They can benefit their shareholders even more if they can afford to wait to do a QEO right before the end of 2009, based on this paper’s analysis.

2. The case for issuing more equity

Issuing equity is costly. Issuers must pay their investment bankers. This cost is usually 5 percent of the gross proceeds of a seasoned equity offering, according to Kim *et al.* (2008). Yet, for investment banks such as GS and MS, which are the major equity underwriters, this direct cost is probably much less than 5 percent. Moreover, to encourage wide investor interest in the offering, it must be priced at a discount. The discount varies by market conditions and the size of the offering. Kim *et al.* (2008) estimates that this discount from the previous day’s closing

¹Eric Dash, June 2, 2009, “Banks May Soon Get Approval to Leave the Bailout Program,” *New York Times* accessed online on July 16, 2009, at <http://www.nytimes.com/2009/06/02/business/02bank.html>.

²Robin Sidel and Deborah Solomon, July 13, 2009, “J.P. Morgan to Send Warrants to Market,” *Wall Street Journal* accessed online on July 16, 2009, at <http://online.wsj.com/article/SB124718361931620349.html>.

price is roughly 2.7 percent for seasoned equity offerings. When GS and MS issued equity in April, May, and June 2009, the discount was higher. The weighted average discount for Goldman Sachs and Morgan Stanley was about 5.0 and 11.5 percent, respectively.

Table 1

Issuer	Goldman Sachs (GS)		Morgan Stanley (MS)	
	Date	4/13/2009	4/30/2009	5/8/2009
Offering size in billions	\$5.00	\$0.75	\$4.03	\$2.31
Offer price	\$123.00	\$123.00	\$24.00	\$27.44
Previous close	\$130.05	\$128.18	\$27.14	\$29.89
Fall from previous close	5.73%	4.21%	13.08%	8.93%
Shares sold in millions	40.65	6.1	167.9	84.2
Weighted average underpricing	4.98%		11.57%	

Sources: author's analysis; 8-K filings; and Christine Harper and Josh Fineman, "Morgan Stanley Raises \$2.2 Billion Selling Shares at \$27.44" *Bloomberg.com* accessed online on July 15, 2009, at <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=acfeBjLRZbeM>.

On April 13, 2009, Goldman Sachs issued \$5 billion at \$123 per share. It exercised the greenshoe, overallotment, option of fifteen percent on April 30, 2009. On both May 8, 2009, and June 2, 2009, Morgan Stanley issued common stock. The weighted average discount is the offer prices' percent discount from the previous close weighted by the offering size relative to both offerings.

Thus the total costs can average about 8 percent, but they may be lower or higher. These costs must be compared to the benefits of not having ½ the warrants outstanding. Thus, if the costs of issuing new equity are less than half the value of the warrants, a QEO will seem like a good deal for these banks' shareholders according to Wilson (2009). For both Goldman Sachs and Morgan Stanley, which received capital injections of \$10 billion, the cost of issuing equity to complete a QEO is the following:

Cost of Issuing Equity = (Discount and underwriter fees as a percent of the issue)
 *(\$10 billion – QEO money already raised)

According to Table 1, Morgan Stanley has raised \$6.34 billion. Thus, if the cost of issuing equity as a percent of the issue is 12 percent for Morgan Stanley, then the cost of issuing equity = .12*(\$10 billion – \$6.34 billion) = \$439 million. This has to be weighed against the benefit, which is that ½ of the warrants will be cancelled. According to Table 2, the value of the TARP warrants issued by Morgan Stanley was \$1,104 million. Thus, half the warrants are worth \$552 million. This is more than the \$439.2 million cost of issuing equity according to this paper's analysis. Thus, MS could have increased shareholder value by \$552 million – \$439 million = \$113 million by issuing equity on July 13, 2009, in this example.

This exercise is repeated in Figure 1 for transaction costs of issuing equity between zero and twenty percent. For costs of issuing equity less than 12 percent, according to Figure 1, both GS and MS could have increased their shareholders' wealth by completing a QEO on Monday, July 13, 2009, based on Friday, July 10, 2009, closing prices.

Table 2

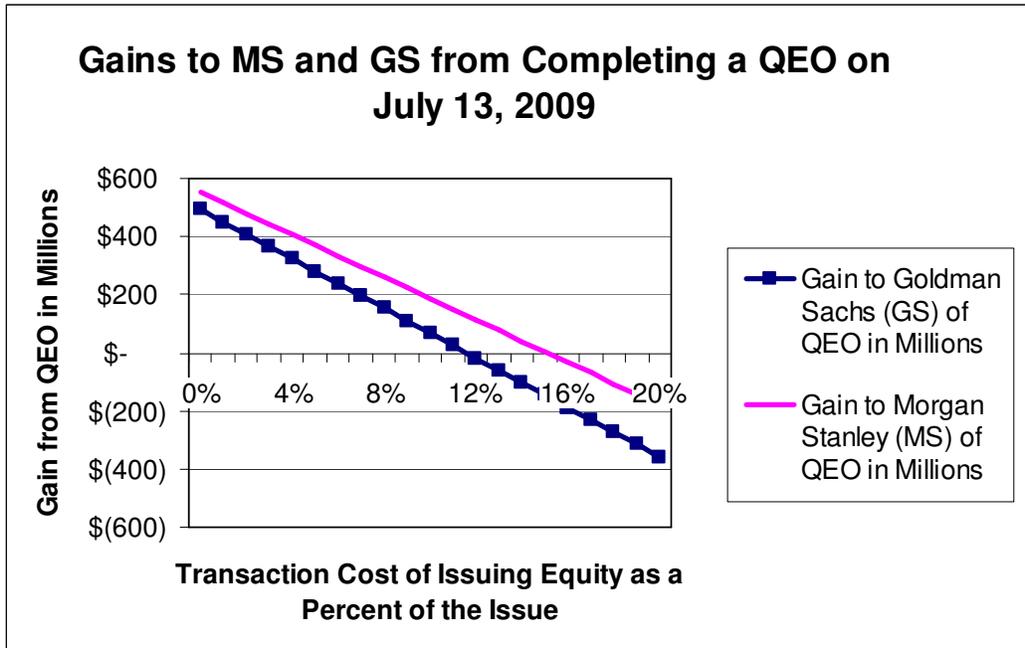
Issuer	Goldman Sachs (GS)	Morgan Stanley (MS)
Date of valuation	7/10/2009	7/10/2009
Stock price	\$141.87	\$25.94
Strike price	\$122.90	\$22.99
Expiration date	10/28/2018	10/28/2018
Riskless rate	3.30%	3.30%
Volatility	49.28%	60.84%
Dividend yield	0.99%	0.77%
Number of shares in millions	503.4	1,406.7
TARP warrants outstanding	12,205,045	65,245,759
Per warrant value	\$80.67	\$16.92
Value of warrants in millions with zero chance of cancellation	\$985	\$1,104

Sources: author's analysis; Yahoo! Finance; SIGTARP (2009); CBOE

This valuation was based on closing prices on July 10, 2009. The strike prices and expiration dates are from SIGTARP (2009). The riskless rate is the 10-year Treasury note adjusted for continuous compounding. The volatility is an index of implied volatilities reported by the CBOE at <http://cboe.ivolatility.com/options> known as the IV index call. The dividend yield is the current dividend yield. The current dividend yield is calculated by taking the announced dividend and divided it by the current price. The dividend yield is adjusted for continuous compounding. Closing prices and dividends are taken from Yahoo! Finance. The author used Merton (1973), which unlike Black and Scholes (1973) adjusts for dividends. The warrant values adjusted for the effects of dilution by using the numerical procedure of Galai and Schneller (1978).

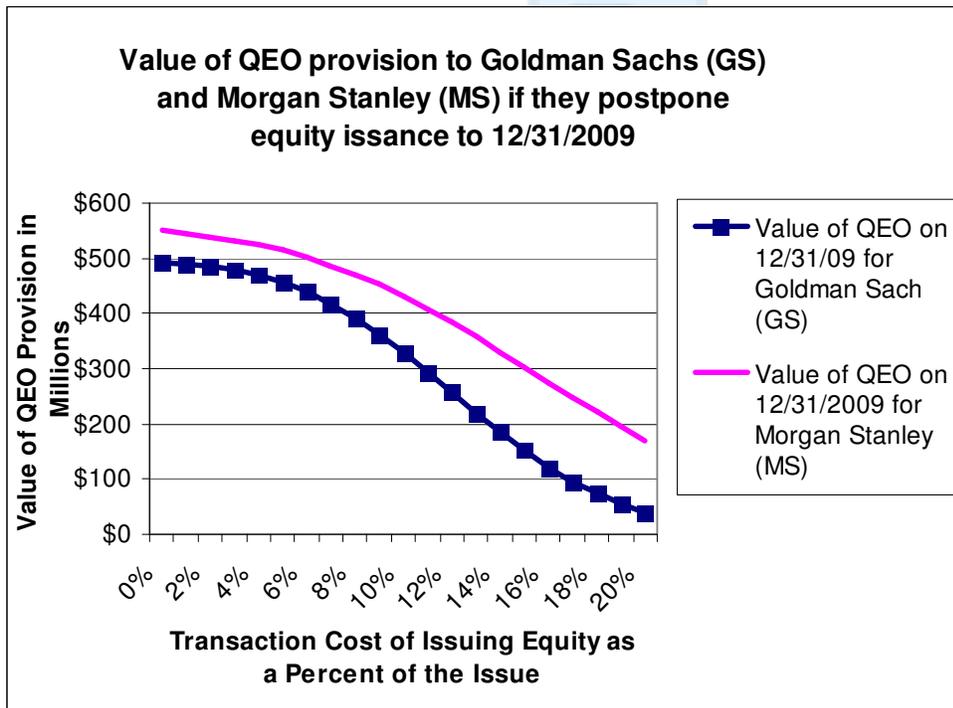
Yet, Goldman Sachs and Morgan Stanley could gain even more by waiting until year end to issue new equity. The rationale is that both Goldman Sachs and Morgan Stanley like all banks have volatile stock prices. Completing a QEO only makes sense if their stock price is high enough by year's end that it exceeds the transaction costs of issuing new equity. If the stock price plummets by the end of 2009, completing a qualified equity offering just to cancel half the warrants in July will seem like a bad move in December. Thus, this option to complete a QEO is more valuable in Figure 2 than in Figure 1 because the real option to wait is also very valuable. With an 8 percent transaction cost of issuing new equity, GS and MS would gain \$152 million and \$259 million by completing a QEO on July 13, 2009. Yet, this option to do a QEO would be worth \$391 million and \$471 million for GS and MS, respectively, if they waited until December 31, 2009, according to Figure 2. Thus, the time value of the option to do a QEO is \$239 million for GS and \$212 million for MS, according to Figure 3, which is based on the author's analysis.

Figure 1



Source: author's analysis

Figure 2

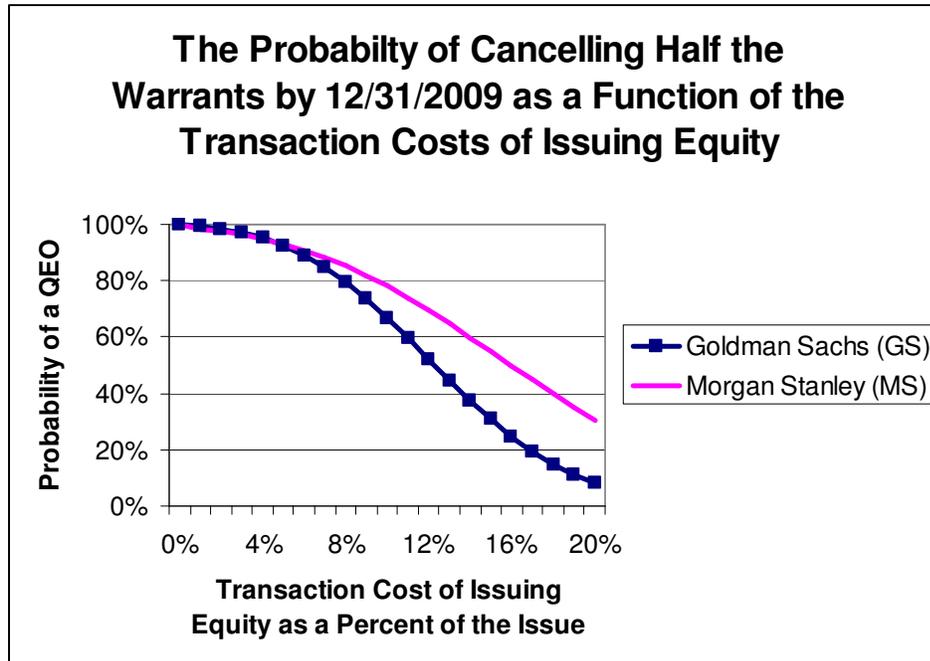


Source: author's analysis

Figure 2, is calculated by using the following formula:

The value of the option to do a QEO = $\frac{1}{2}$ * (per warrant price)*(number of warrants) * (probability of a QEO for a given transaction cost of issuing equity)

Figure 3

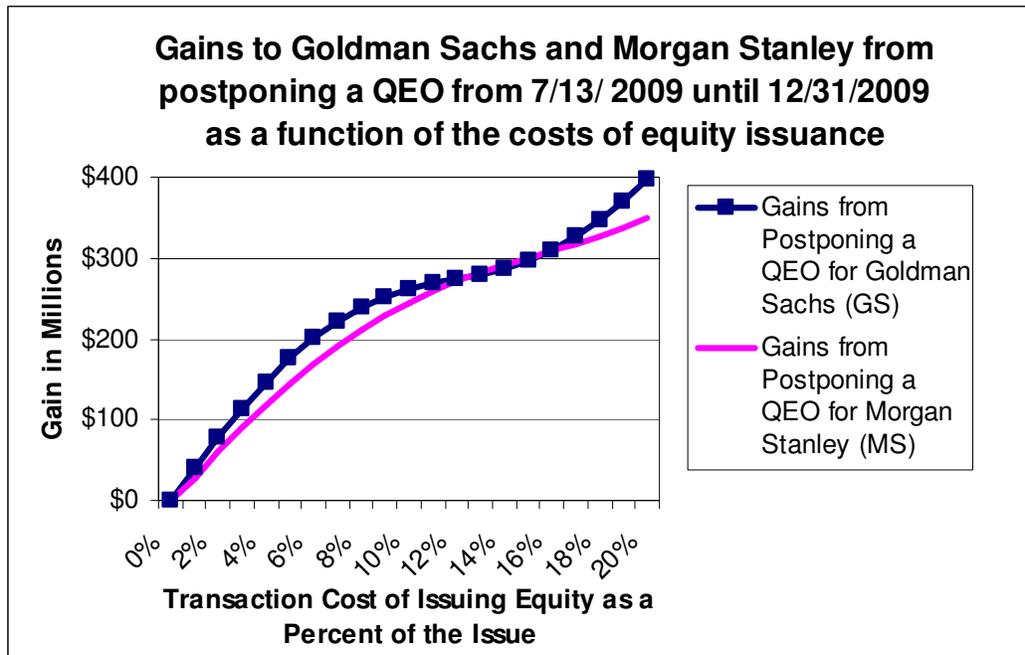


The option allows the bank to cancel half the warrants. This explains why the quantity is one-half. The per warrant price is determined by the strike price, time to expiration, the risk-free rate, dividend yield, and volatility, using the option pricing model of Merton (1973) with dilution adjustments of Galai and Schneller (1978). The number of warrants is given by the securities purchase agreement. The probability of a QEO for any given percent transaction costs is generated from methodology in Wilson (2009). These probabilities are displayed in Figure 3.

In Figure 4, the value of waiting to complete a QEO until the end of 2009 (as opposed to having completed one on Monday, July 13, 2009) is displayed as a function of the transaction costs of issuing new equity. That is, Figure 4 plots the difference of the values plotted in Figure 2 and Figure 1.

Is it worth completing a QEO prior to the conclusion of warrant negotiations or an auction is held? Figure 4, certainly shows that the incremental value to shareholders of waiting to complete a QEO is large. Figure 4 is calculated by finding the difference between the value of the QEO option on December 31, 2009, and the value of exercising the QEO option today. According to persons familiar to the warrant negotiating process, the U.S. Treasury does not consider a bank's chance of completing a QEO when negotiating the TARP warrants. Thus, if either bank makes a warrant deal prior to a QEO, then they probably would lose out on exercising the in the money option of a QEO. Likewise, if they opt for auctioning the warrants, the securities purchase agreement says that only the half of the warrants that are not cancellable can be auctioned. The other half cannot be auctioned until year end if the banks retain their rights to a QEO. With an 8 percent transaction cost of issuing equity, if they opt for auction, those banks will have to decide if the hundreds of millions of dollars of time value of postponing a QEO are worth operating under TARP for an extra six months.

Figure 4



3. Conclusion

Both Goldman Sachs and Morgan Stanley could increase shareholder value by completing a qualified equity offering (QEO) in July of 2009. A QEO allows these banks to cancel half of the TARP warrants that they have issued. Yet, holding onto this option of completing a QEO comes at the cost of being under the restrictions of the Troubled Asset Relief Program (TARP) until at least year's end. For this reason, these banks may opt to complete a QEO sooner rather than later if they decide to at all. Yet, the option to do a QEO is worth even more if they wait. Waiting has the cost of leaving both banks under many of the restrictions and stigmas of TARP. Thus, GS and MS may be better off sacrificing the time value of the option to do a QEO and exercise that option well before the end of 2009.

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