

Goldman Sachs: Risk Management and the Residential Mortgage Market

I. Executive Summary

The financial crisis has been a humbling experience for every participant in the financial system. The events of the past few years have put a particular focus on risk management, its failures and its economic implications.

At Goldman Sachs, we have dealt with both the challenges of navigating the crisis itself and with questions about our actions before and during the crisis. Our risk management and business practices in the mortgage market have received much attention. In that connection, we would like to make the following points:

- Goldman Sachs did not take a large directional “bet” against the U.S. housing market, and the firm was not consistently or significantly net “short the market” in residential mortgage-related products in 2007 and 2008, as the performance of our residential mortgage-related products business demonstrates.
- Goldman Sachs was not a dominant participant in the residential mortgage-related products market. The firm’s net revenues from residential mortgage-related activities were very small, both in total and relative to the rest of our business. In fact, from 2003 to 2008, annual net revenues attributable to mortgage-related products, commercial and residential, never exceeded approximately 2% of the firm’s overall net revenues. In 2007, the firm had less than \$500 million of revenue from residential mortgage-related products – approximately 1% of the firm’s overall net revenues.
- Goldman Sachs did not have access to any special information that caused us to know that the U.S. housing market would collapse. In fact, when the crisis spread from subprime to all residential mortgages, Goldman Sachs had overall net losses of approximately \$1.7 billion in residential mortgages for the fiscal year ending 2008.
- Goldman Sachs did not engage in some type of massive “bet” against our clients. The risk management of the firm’s exposures and the activities of our clients dictated the firm’s overall actions, not any view of what might or might not happen to any security or market.
- We maintained high standards with regard to client selection, suitability and disclosure as a market maker and underwriter. As a market maker in the mortgage market, we are primarily engaged in the business of assisting clients in executing their desired transactions. As an underwriter, the firm is expected to assist the issuer in providing an offering document to investors that discloses all material information relevant to the offering.
- Goldman Sachs’ risk management decisions were motivated not by any collective view of what would happen next, but rather by fear of the unknown. The firm’s risk management processes did not, and could not, provide absolute clarity; they underscored

deep uncertainty about evolving conditions in the U.S. residential housing market. That uncertainty dictated our decision to attempt to reduce the firm's overall risk.

- Goldman Sachs sold Collateralized Debt Obligations (“CDOs”) principally to large financial institutions, insurance companies and hedge funds with a focus on this type of product.¹ These investors had access to highly detailed information that allowed them to conduct their own independent research and analysis.
- Goldman Sachs never created mortgage-related products that were designed to fail.

There are valuable lessons to be learned from the financial crisis in general, and the collapse of the mortgage market in particular. It is critical that we and other financial institutions learn the right lessons, if we are to avoid future crises in the financial system.

II. Goldman Sachs as Market Maker

At the heart of Goldman Sachs' sales and trading business is our role as a financial intermediary, or “market maker.” As a market maker, the firm stands ready, willing and able to buy and sell financial instruments at the initiation of our clients. Goldman Sachs' clients expect the firm to do so, regardless of whether the other side of a transaction has been identified or is readily available. In light of the global and complex nature of markets, it would be very difficult for companies, institutions and governments to raise capital, manage their risks and fund their operations without financial institutions committing their capital on behalf of clients.

Our clients' needs are the single biggest factor driving Goldman Sachs to accept risk. These risks -- like market price, volatility and credit -- all must be actively managed. Once the firm transacts with a client, thereby taking on an exposure, our most effective risk management tool is to enter into a transaction that counterbalances the risk we have just assumed. In many cases, however, this can be difficult because of imperfect, mismatched or unavailable offsetting exposures. Nevertheless, Goldman Sachs' clients expect the firm to stand ready to transact in all market conditions.

III. Goldman Sachs' Participation in the Residential Mortgage Market

Goldman Sachs' residential mortgage-related business consists of structuring, trading, underwriting and distributing mortgage- and asset-backed related products. These products include loans, securities and derivatives backed by residential real estate loans.

The residential mortgage-backed security (RMBS) is one such product. Through an RMBS, pools of home loans are structured into a security, with the underlying mortgage loans serving as collateral and providing income to the investors in the security.

A Collateralized Debt Obligation (CDO) pools various RMBS and other income-producing assets into different tranches with varying degrees of risk. The most senior tranches carry the least risk of default and, in turn, provide the lowest interest rate to the investor. In a “synthetic”

¹ With one exception: a corporate-related pension fund that had long been active in this area made a purchase of less than \$5 million.

CDO, two parties enter into a derivative transaction, which references particular assets. By the very nature of a synthetic CDO, one counterparty must be long the risk (i.e., anticipating an increase in the value of the referenced assets), and the other counterparty must be short the risk (i.e., anticipating a decrease in the value of the referenced assets).

Goldman Sachs has not been a significant participant in the market for originating mortgages. In fact, the number of loans originated by Goldman Sachs never exceeded one-tenth of one percent of total domestic residential mortgages.

In structuring and underwriting RMBS, Goldman Sachs often purchased the underlying loans from banks and other lenders, engaging in a due diligence process to examine (i) the counterparty, (ii) loan level credit, (iii) loan level compliance and (iv) property valuation. In other cases, Goldman Sachs was hired by mortgage originators to act as an underwriter for securitizations of their own loans.

In this context, the firm was acting as an underwriter of financial instruments, rather than a market maker. A market maker is primarily engaged in the business of assisting clients in executing their desired transactions. This business is client-driven, and serves an intermediary function. Goldman Sachs strives to provide a fair price to our clients.

In contrast, an underwriter of financial instruments works with the issuer in connection with offering financial instruments to investors. In this context, federal securities laws effectively impose a “gatekeeper” role on Goldman Sachs: as an underwriter, the firm is expected to assist the issuer in providing an offering document to investors that discloses all material information relevant to the offering.

In connection with our underwriting of residential mortgage-related securities, Goldman Sachs had a process to examine the management, relevant policies and procedures, underwriting standards, creditworthiness and other aspects of each mortgage originator before the firm began purchasing loans for securitization. As a result of these reviews, in 2007 alone, we determined not to do business with dozens of originators and suspended our business relationships with many more.

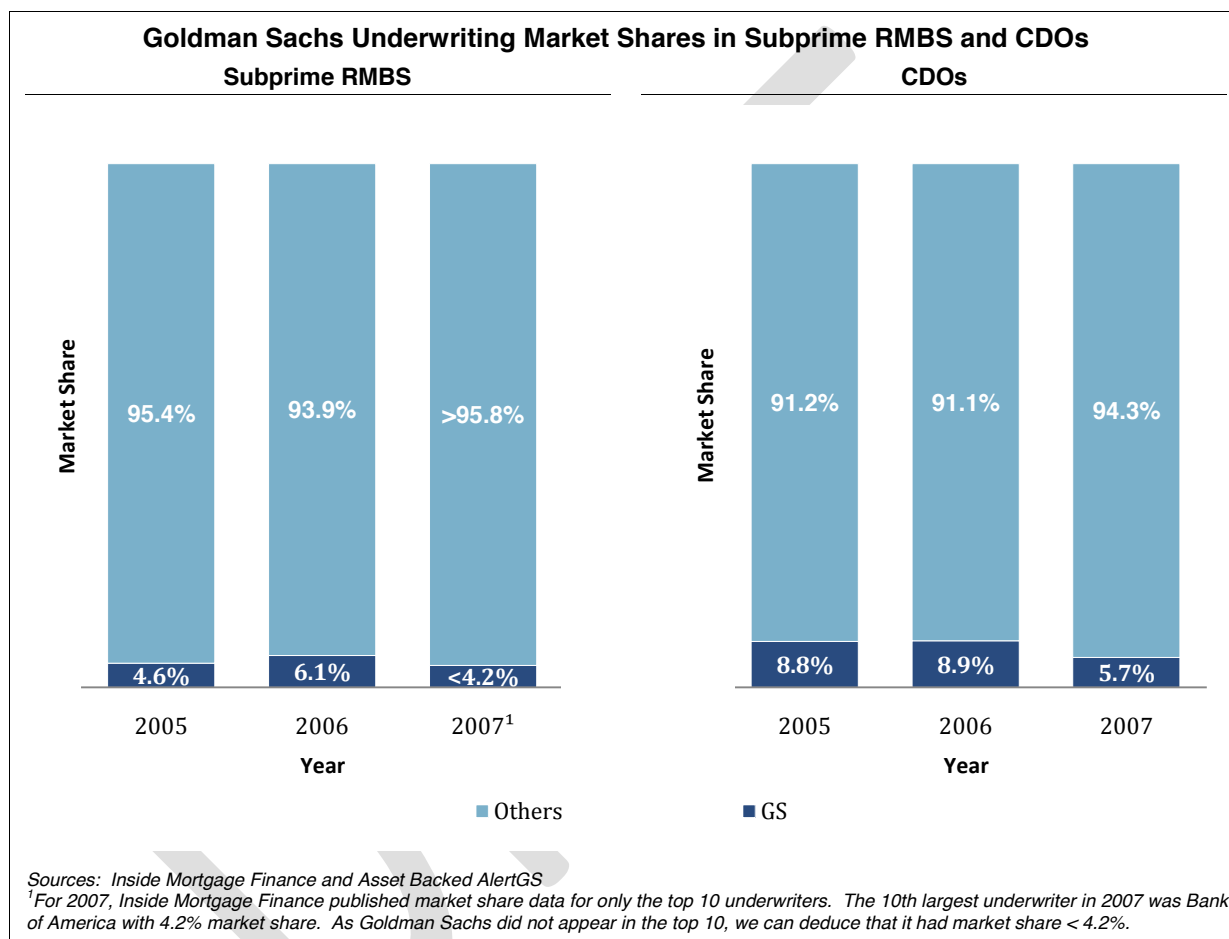
The firm also employed internal and third-party resources to conduct due diligence on the individual loans in the pools backing the securities in our RMBS offerings, including reviewing selected loan files, verifying compliance with state and federal lending statutes, and selective review of property appraisals against comparable values. As a result, Goldman Sachs generally did not accept loans that, based on our review and analysis, appeared to have potentially significant legal, regulatory compliance or other issues.

Regardless of the degree of due diligence performed by underwriters in connection with RMBS securitizations, however, they cannot and do not guarantee payment, performance or any rate of return. Rather, it is up to the purchaser of securities to evaluate whether the securities are worthy of investment based on the purchaser’s own view and analysis of the securities’ value in light of the purchaser’s expectations about the future of the housing market and the economy.

Importantly, in the case of asset-backed securities, the disclosures set forth in the firm’s offering documents included detailed descriptions of the underlying assets.

IV. Goldman Sachs’ Position in the Residential Mortgage and CDO Markets

Generally speaking, Goldman Sachs was not a leading participant in the residential mortgage securities underwriting market. The firm entered this market space relatively late, with a small amount of customer activity and without a significant mortgage origination business.



V. Risk Management

A. Getting “Closer to Home”

The foundation of Goldman Sachs’ approach to risk management is disciplined mark-to-market accounting. This involves the daily practice of valuing the firm’s assets and liabilities to current market levels – that is, the value one might expect to find on the open market. Without a transparent and realistic insight into our own financial position, Goldman Sachs would not have

been able to properly assess or manage our risk. It was mark-to-market accounting that spurred Goldman Sachs to reduce the firm's risk in the residential mortgage market near the end of 2006.

As a result of this firmwide discipline, Dan Sparks, then head of the mortgage department, was able to tell senior members of the firm in an email on December 5, 2006, that the "Subprime market [was] getting hit hard...At this point we are down \$20mm today."²

For senior management, a pattern of losses, even relatively modest losses, in a business of the firm will typically raise a red flag. Concerned by increasing volatility and repeated daily losses in the firm's mortgage business P&L, David Viniar, the firm's CFO, convened a meeting of the firm's senior mortgage traders and risk managers on December 14, 2006. At that time, Goldman Sachs had a net long exposure to subprime, prime and other residential mortgage risk. It was agreed during the meeting that the firm should reduce its overall exposure to the subprime mortgage market – getting, in effect, "closer to home." To be clear, Mr. Viniar did not instruct the mortgage business to take a particular directional view on the subprime mortgage market. Nor did Mr. Viniar prohibit the mortgage business from taking short positions or becoming net short. Instead, Mr. Viniar's guidance to the mortgage department was to not take a significant directional position -- short or long -- in any direction and to do its best to reduce the size of the department's overall positions in the subprime market.

In a December 15, e-mail to Tom Montag, then co-head of the Securities Division, Mr. Viniar recounted the meeting of the day before, stating, "Dan and team did a very good job going through the risks. On ABX³, the position is reasonably sensible but is just too big. Might have to spend a little to size it appropriately. On everything else my basic message was let's be aggressive distributing things [i.e., reducing risk] because there will be very good opportunities as the markets goes into what is likely to be even greater distress and we want to be in position to take advantage of them [i.e., opportunities]."⁴ In an email two days later, Dan Sparks updated senior management: "We made progress last week, but still more work to do...Below shows risk reduction trades."⁵

In an e-mail to the firm's co-Chief Operating Officer Jon Winkelried on February 14, 2007, Mr. Sparks outlined the efforts to reduce long risk that his department had commenced:

Over the last few months, our risk reduction program consisted of:

- (1) selling index outright
- (2) buying single name protection
- (3) buying protection on super-senior portions of the BBB/BBB- index (40-100% of the index).⁶

On February 22, 2007, Mr. Sparks sent an e-mail to several people on the mortgage desk urging them to continue getting closer to home, including reducing short positions:

² GS MBS-E-010930468 (December 5, 2006 e-mail from Dan Sparks to Tom Montag Bill McMahon and Richard Ruzika)

³ ABX is an index that tracks the performance of subprime residential mortgage bonds.

⁴ GS MBS-E-009726498 (December 15, 2006 e-mail from David Viniar to Tom Montag)

⁵ GS MBS-E-009726143 (December 17, 2006 e-mail from Dan Sparks to Tom Montag, et al)

⁶ GS MBS-E-010989331 (February 14, 2007 e-mail from Dan Sparks to Jon Winkelried, et al)

We need to buy back \$1 billion single names and \$2 billion of the stuff below – today. I know that sounds huge, but you can do it – spend bid/offer, pay through the market, whatever to get it done. It is a great time to do it – bad news on HPA, originators pulling out, recent upticks in unemployment, originator pain. I will not want us to trade property derivatives until we get much closer to home as it will be a significant distraction from our goal. This is a time to just do it, show respect for risk, and show the ability to listen and execute firm directives.⁷

Attempting to reduce its overall risk to subprime residential mortgage-related securities meant that the firm at various times would find itself net short, though not significantly so.

B. Concerns about Short Positions

It was well known that housing prices were weakening in early 2007. But no one knew when the market would reach bottom and whether values would continue to fall, rebound, or at least stabilize at levels where buyers of residential subprime mortgage-related securities would receive their full interest and principal payments. The impact of subprime mortgage-related securities on the housing market and broader economy was similarly unclear. In March 2007, Federal Reserve chairman Ben Bernanke told lawmakers that “the impact on the broader economy and financial markets of the problems in the subprime market seems likely to be contained.”⁸ Other policy makers and economists repeated this assertion through the summer and early fall, while still others took the reverse view.

Goldman Sachs continued to attempt to reduce its risk in the subprime market and move to a more balanced position, which at various times caused the firm to have a net short bias. At the time, however, there was no internal consensus on the future of the subprime residential housing market. On one hand, for instance, Josh Birnbaum, a managing director in the mortgage department, believed that the firm should take a larger net short position. On the other hand, there was a concern among some that the firm might be too short, as emails from the time period reflect:

- Gary Cohn, the firm’s President and Chief Operating Officer, remarked in a March 6, 2007 e-mail that “A big plus would hurt the Mortgage business but Justin thinks he has a big trade lined up for the morning to get us out of our short risk.”⁹
- Dan Sparks noted on March 8, 2007 that “Aside from the counterparty risks, the large risks I worry about are... [c]overing our shorts. We have longs against them, but we are still net short.”¹⁰

⁷ GS MBS-E-010381411 (February 22, 2007 e-mail from Dan Sparks to Josh Birnbaum et al.)

⁸ Testimony of Federal Reserve Chairman Ben Bernanke before the Joint Economic Committee of the US Congress, March 28, 2007.

⁹ GS MBS-E-009686278 (March 6, 2007 e-mail of Gary Cohn).

¹⁰ GS MBS-E-009718900 (March 8, 2007 e-mail of Dan Sparks).

- On March 14, 2007, Tom Montag told Lloyd Blankfein that the firm “[c]overed another 1.2 billion in shorts in mortgages – almost flat – now need to reduce risk.”¹¹
- On April 11, 2007, Mr. Sparks received an estimate of the mortgage department’s exposure to certain products and noted to Kevin Gasvoda, a member of the department: “Subprime down 3mm from shorts? Is that right and are we too short?” Mr. Gasvoda replied: “Yes. Subprime has near zero loans and is short some mez abx and \$2B aaa abx. The aaa short is painful Plan is to chip away at covering on every chance.”¹²

During this period, the mortgage department covered more than \$2.8 billion in single-name short positions. Even though these short positions proved profitable when viewed in isolation, this meaningfully reduced the firm’s net exposure to subprime residential mortgages by several billion dollars -- in effect, getting the firm closer to home. In addition, by March, the firm’s net long exposure to prime and other residential mortgages had grown as a result of meeting client needs in the mortgage market.

C. Different Views In The Firm

In the spring of 2007, there was continued debate amongst senior managers about the direction of the residential mortgage market.¹³ For instance, on March 14, Jon Winkelried e-mailed Mr. Sparks, and others, indicating that the firm should be prepared for a downturn in the performance of securities backed by prime loans and asked what it was doing to insulate itself from losses. Mr. Sparks replied: “Trying to be smaller . . . We are also short a bunch of sub-prime AAA index for jump risk protection.”

Richard Ruzika, on the other hand, replied:

It does feel to me like the market in general underestimated how bad it could get. And now could be overestimating where we are heading. . . . While undoubtedly there will be some continued spillover, I’m not so convinced this is a total death spiral. In fact, we may have terrific opportunities. Dan’s team is working hard (literally around the clock) so we have a shot at them¹⁴

As Mr. Ruzika’s e-mail indicates, Goldman Sachs carefully monitored our short positions and explored the possibility of increasing long positions and other opportunities in the mortgage markets if market conditions appeared favorable. The firm even explored the possibility of buying interests in, or pools of assets from, subprime originators. In a March 9, 2007 e-mail, which Gary Cohn subsequently forwarded to Lloyd Blankfein, Dan Sparks discussed potential investments that the firm might make in subprime originators.¹⁵ The firm also continued to respond to client requests to sell mortgage securities and submitted bids on long positions in

¹¹ GS MBS-E-009685739 (March 14, 2007 e-mail of Tom Montag to Lloyd Blankfein).

¹² GS MBS-E-010952383-10952385 (April 11 e-mail of Dan Sparks to Kevin Gasvoda).

¹³ GS MBS-E-009718900 (March 8, 2007 e-mail of Daniel Sparks).

¹⁴ GS MBS-E-009718239 (March 14, 2007 e-mail of Richard Ruzika).

¹⁵ GS MBS-E-009656302 (March 9, e-mail of Dan Sparks to Gary Cohn et al, forwarded to Lloyd Blankfein)

response to client requests. Various bids were accepted by clients, and the firm took on additional long risk.

In the third quarter of 2007, the subprime mortgage market deteriorated further. As David Viniar stated in the third quarter earnings conference call, “The mortgage sector continues to be challenged and there was a broad decline in the value of mortgage inventory during the quarter. As a result, we took significant markdowns on our long inventory positions during the quarter as we had in the previous two quarters. However, our risk bias in that market was to be short and that net short position was profitable.”¹⁶ The firm, however, did not amass a large net short position to “bet against the housing market.” For the quarter, the firm’s revenues from residential mortgage-related activities was less than 5% of its total revenues.

Some in Goldman Sachs’ mortgage business began to argue that the firm should consider buying more mortgage assets, believing that prices may have bottomed. For example:

- In an e-mail on August 21, 2007, Mr. Sparks told Mr. Winkelried that “We think now is the time to start using our balance sheet and it is a unique opportunity with real upside—specifically for AAA RMBS.” Mr. Sparks also said that he was going to devise a “plan describing the opportunity and parameters (including funding and risk) related to buying billions.”¹⁷
- In an August 21, 2007 e-mail, Josh Birnbaum told Tom Montag and others, “The mortgage department thinks there is currently an extraordinary opportunity for those with dry powder to add AAA subprime risk in either cash or synthetic form.”¹⁸

In late August, the mortgage department again purchased \$350 million in triple-B ABX and covered \$150 million in single-name shorts. Without greater clarity on the direction of the housing market, the firm sought to maintain a balanced position in the subprime mortgage market. A mortgage presentation to the Board of Directors, dated September 17, 2007, shows the subprime mortgage position on a notional basis and indicates a generally balanced position.¹⁹

D. End of 2007/Beginning of 2008

On November 17, 2007 Lucas van Praag, global head of Corporate Communications, sent an e-mail to Lloyd Blankfein and Gary Cohn about a *New York Times* article suggesting that Goldman Sachs profited on the subprime market collapse. Mr. Blankfein responded, “Of course we didn't dodge the mortgage mess. We lost money, then made more than we lost because of shorts. Also, it's not over, so who knows how it will turn out ultimately.” Mr. Cohn qualified, “We were just smaller in the toxic products.”²⁰

¹⁶ GS MBS-E-011298676 (September 20, 2007 e-mail from Geoffrey Williams to ficc-spg trading, entitled “Viniar’s Mortgage Related Comments from the Earnings Call”)

¹⁷ GS MBS-E-011035212 (August 20, 2007 e-mail from Dan Sparks to John Winkelried, et al)

¹⁸ GS MBS-E-009721274 (August 21, 2007 e-mail from Josh Birnbaum to Tom Montag, et al)

¹⁹ GS MBS-E-001793915-930

²⁰ GS MBS-E-009671378 (November 17, 2007 e-mail from Lucas van Praag to Lloyd Blankfein)

A November 2007 document entitled “How Did GS Avoid the Mortgage Crisis,” prepared for David Viniar in advance of earnings conference calls, summarized the firm’s position following our prudent risk reduction efforts. After outlining the actions in late 2006 and early 2007, the document states:

However, one should not be lead to believe that we went through this period unscathed and somehow significantly profited from a 'bet' on the downturn in mortgage markets. The actions that I outlined led to significant write downs in the value of our long mortgage inventory over the course of this year. We mentioned during our second quarter conference call that a weak quarter in Mortgages contributed to lower results in our FICC businesses. A better characterization of the situation is that we effectively avoided greater losses by taking these proactive steps and in fact during the third quarter we were able to make money on mortgages as a result of our net short position.²¹

By November 30, 2007, Goldman Sachs’ net exposure to subprime residential mortgages was balanced. The firm’s prime and other residential mortgage exposure continued to be long cash instruments of approximately \$13.5 billion.

For much of 2007, Goldman Sachs and most other market participants, economists and policy makers believed that the credit crisis was contained to the subprime mortgage market. During this period, the firm continued market making and underwriting activities in residential mortgages, which resulted in an increase in prime and other residential mortgage exposure. Unfortunately, in 2008, it became clear that these other asset classes were deteriorating as well. For the fiscal year ending November 2008, although profitable overall, the deterioration of these asset classes was a meaningful contributor to the firm’s overall net loss of approximately \$1.7 billion in residential mortgages.

E. Increases in Value at Risk (VaR)

Throughout the course of our risk-reduction efforts starting in 2006, the mortgage department experienced periodic spikes in VaR, or “Value at Risk.” VaR is a risk metric that measures the potential loss in value of trading inventory due to adverse moves in the market over a defined period of time. The key inputs to VaR are the size and type of positions in the respective assets (both long and short) as well as the volatility of the underlying assets. Between November 24, 2006 and February 23, 2007, daily VaR in the mortgage department increased from \$13 million to \$85 million, predominantly from increases in volatility.²²

Increases in VaR were the result of dramatic fluctuations in the mortgage market (which had a corresponding effect on VaR), not an effort on the part of Goldman Sachs to take a large directional bet on the subprime market. In fact, because of the volatility of the markets, the increases in VaR occurred despite efforts by the firm to reduce our overall exposure to the mortgage market.

²¹ GS MBS-E-009713204-207

²² GS MBS-E-010037310 (Mortgage VaR Change (Q1'07 vs. Q4'06))

In a February 14, 2007 e-mail, Dan Sparks wrote, “Over var due to massive spike in subprime volatility and we are working with bruce on that. Over limit on cre loan scenario list but will correct next week with large securitization pricing. Over limit on cdo risk but will adjust as moving positions to desks. Bad week in subprime.”²³

A February 21, 2007 e-mail from Mr. Sparks to Jon Winkelried described the volatility in the subprime market:

We are net short, but mostly in single name CDS and some tranching index vs the some [sic] index longs. We are working to cover more, but liquidity makes it tough. Volatility is causing our VAR numbers to grow dramatically.²⁴

That volatility continued into the summer of 2007, as Bill McMahon, then COO & Head of Risk Management for the Securities Division, communicated to Gary Cohn and David Viniar in an email on August 15, 2007:

The volatilities and correlations among our assets are really driving the swings in var right now. Robert Berry [the firm’s Chief Market Risk Officer] sent out a note last night indicating that the sensitivity of our var models to correlations suggest that the var can swing between 140 and 160 without any changes in the complexion of our trading books – essentially, it is noise. The only solution is to reduce the size of the books, which is what we are working on with mortgages and credit trading.²⁵

VI. The Effect of Goldman Sachs’ Risk Management on Our Profits and Losses During the Financial Crisis

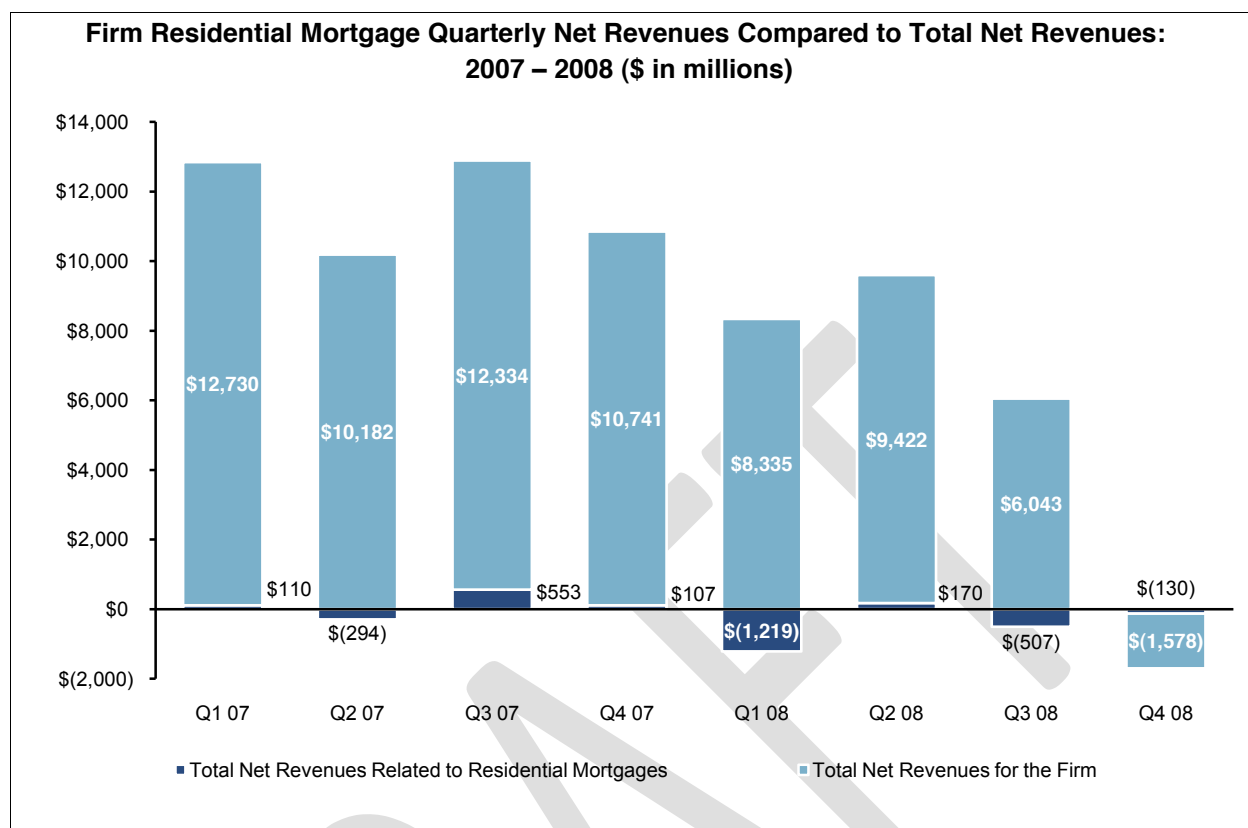
Given the deteriorating performance of the mortgage market in 2007 and 2008 and the corresponding decline in the value of mortgage-related products, the best and most relevant proof of whether Goldman Sachs had a large net short position is our actual revenues in mortgages. The relative consistency of revenues underlines the firm’s on-going market making activities and prudent risk management– not a massive proprietary, directional view of where the market might have been headed.

The firm’s mortgage-related positions had a relatively small effect on our net revenues or profits for fiscal year 2007. The firm had net revenues of less than \$500 million from our residential mortgage business in 2007. During fiscal year 2008, the firm had net losses of approximately \$1.7 billion related to our residential mortgage business.

²³ GS MBS-E-002203268 (February 14, 2007 e-mail notes taken by Dan Sparks)

²⁴ GS MBS-E-010381094 (February 21, 2007 e-mail from Dan Sparks to Jon Winkelried)

²⁵ GS MBS-E-009778573 (August 15, 2007 e-mail from Bill McMahon to Gary Cohn and David Viniar)



As Lloyd Blankfein and Gary Cohn explained in a letter to shareholders on April 7, 2010, “The firm did not generate enormous net revenues or profits by betting against residential mortgage-related products, as some have speculated; rather, our relatively early risk reduction resulted in our losing less money than we otherwise would have when the residential housing market began to deteriorate rapidly... Although Goldman Sachs held various positions in residential mortgage-related products in 2007, our short positions were not a ‘bet against our clients.’ Rather, they served to offset our long positions. Our goal was, and is, to be in a position to make markets for our clients while managing our risk within prescribed limits.”