



## JPMorgan & the London Whale

03/2014-6003

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Funding for this case study was provided by INSEAD's Global Private Equity Initiative (GPEI).

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## Introduction

*“The market can remain irrational longer than you can stay solvent.”*

Attributed to John Maynard Keynes

In the spring of 2011, JPMorgan Chase & Co. (JPM) found itself in a dire situation. The synthetic credit portfolio (SCP) of their Chief Investment Office (CIO) had grown tremendously in market value through the first quarter. While the SCP represented less than 1% of the bank's total assets, it had grown to become more than half of the bank's total risk. To make matters worse, the portfolio was not behaving as they had expected in light of recent credit market moves.

By the end of March 2012, the SCP had suffered a mark-to-market loss of \$719 million in the year to date. However, the CIO was unable to reduce their exposure by selling because they had become a big holder in the market. Any hint of a portfolio liquidation sale would result in a precipitous decline in value of their positions. Hedge funds and other sophisticated players in the market had begun to “smell blood”, and a forthcoming article in the *Wall Street Journal* article (April 2012) was about to put the plight of the SCP squarely in the public eye. Having cultivated a reputation for sound risk management and business decision making through the worst of the financial crisis, how had JPMorgan managed to get into such a position?

## JPM and the CIO Organization Structure

JPMorgan Chase & Co. is one of the largest global financial institutions globally, providing the entire range of financial services to its retail, corporate, and institutional clients. While its roots dated back to the mid-19<sup>th</sup> century, the current incarnation of JPM had taken shape after the repeal of Glass-Steagall in 1998 and the consequent acquisition of JP Morgan & Co. by Chase Manhattan Bank in 2000. This was followed by the acquisition of Bank One in 2004, whose then CEO, Jamie Dimon, became CEO of the combined entity, the Fed-backed purchase of Bear Stearns in March 2008, and the purchase of Washington Mutual later that year. At the end of 2011, it boasted a market cap of \$184 billion and assets of \$2.27 trillion.

Within JPMorgan Chase, the CIO's role is to optimize the management of the bank's excess cash from its extremely large deposit base. The CIO invests this excess cash across the universe of fixed income securities and other income generating assets. At the end of 2011, the CIO was comprised of 140 traders and 288 middle and back office personnel, predominantly spread across New York and London, who managed a total of \$350 billion in assets. Since 2005, the CIO had been headed by Ina Drew, who was well regarded by senior management and had their utmost confidence. The chief risk officer (CRO) of the CIO, Irv Goldman, reported to her, as did Achilles Macris, the head of international investments. Drew and Goldman were based in the New York office, while Macris was based in London. Prior to Goldman's appointment, the CRO role did not formally exist in the CIO. Instead, the senior most risk officer was Peter Weiland, who was chief market risk officer and officially reported to Barry Zubrow, the bank CRO, from 2007 to January 2012, though he reported to Drew on a de facto basis.

In 2007, the CIO had begun constructing the synthetic credit portfolio as a hedge against the inherently long bias of the rest of the CIO portfolio. It was positioned to generate returns in an environment where credit spreads were widening. This proved to be prudent as spreads widened greatly in the financial crisis, and the SCP generated very strong returns.

### **Exhibit 1**

#### *The Synthetic Credit Portfolio's Historical Performance*

#### **CIO Synthetic Credit Portfolio Revenues 2008-2011**

<b>Year</b>	<b>SPC Revenue</b>
2008	\$ 170 million
2009	\$ 1.05 billion
2010	\$ 149 million
2011	\$ 453 million
<b>Total</b>	<b>\$ 1.772 billion</b>

Source: 6/21/2012 presentation entitled, "CIO Compensation," chart entitled, "Synthetic Credit Book Comparison: Revenue and SCB Trader Incentive (2008-2011)," JPM-CIO-PSI-H 0002746-2792, at 2749.

After quite a strong 2009, SCP performance in 2010 was lacklustre, mostly as a result of a decision to sharply reduce portfolio exposure as market fears post-crisis began to subside. However, as fears over a European sovereign default began to take hold in 2011, the CIO team decided to increase their portfolio exposure to defend against another negative move in credit spreads. As a result, net exposure in the SCP increased from -\$4 billion notional to \$42 billion by mid-2011, and \$51 billion by the end of the year.

Towards the close of 2011, however, senior bank management mandated the CIO to reduce exposure in their portfolio. There were two reasons for this. The bank's view on the economy and credit markets had turned cautiously bullish, so an outright short bias was no longer warranted. And in light of the impending Basel III framework, JPM needed to reduce its risk-weighted asset (RWA) exposure across all business lines. The SCP was specifically targeted by senior management because derivatives were particularly expensive in terms of RWA calculations, and banks with higher amounts of RWA would require a higher ratio of equity-based capital.

Responsibility for the SCP fell to Mr Macris's group, specifically Javier Martin-Artajo, head of European Equity and Credit, and his direct report Bruno Iksil, head of Relative Value Strategic Trading.

### **Credit Indices: CDX and iTraxx**

The SCP was primarily invested in the CDX and iTraxx credit indices. These indices are effectively large diversified baskets of single-name credit default swaps or CDS (100 to 125 individual companies), and offer a simple and relatively liquid way for investors to gain exposure to the broader credit market. The first CDX was created in 2003 and the first iTraxx in 2005. Both are administered by Markit Group, with the main difference being that CDX is

focused on US corporate credit and iTraxx is focused on European corporate credit. Within both indices, the main two products are the Investment Grade (IG) and the High Yield (HY) credit indices, in addition to smaller industry sub-indices. There is even the ability for investors to trade a particular credit tranche of the main IG and HY diversified indices, with each tranche representing a different level of seniority in the “capital structure” of an index.

Given the cash management nature of the CIO mandate, the SCP had historically focused on assets at the “top of the capital” structure, which were less volatile and less prone to losses in the event of default. In terms of maturity, there are 3-, 5-, 7-, and 10-year maturities, but the 5-year maturity is regarded as the most liquid point on the credit curve. Each index’s fixed coupon is determined based on the underlying credit spread. In the event of default of one of the underlying companies, the holder of the index is paid the recovery value of that name (as determined by the ensuing CDS auction) divided by the total number of names in the index. For example, if one company in a 100-name index defaulted with a recovery of 50, the holder of protection would be paid 0.5 bond points per one notional unit of protection, and the coupon thereafter would be based on the remaining 99 names.

## Exhibit 2

### Markit CDX High Yield Series 9 (Bloomberg Sample Screenshot)

GRAB

MARKIT CDX.NA.HY.9 12/12

Export to Excel

CDS Index Member List

Index

MARKIT CDX.NA.HY.9 12/12

BB Number

IBXPOHY9

RED Code

2165BRBE9

Deal Spread (bp)

375

1st Accrual Start Date

09/28/07

Current Price

0.0000/0.0000

Maturity Date

12/20/12

Version

1

Sector

All

Pricing Source

CBGN

Derived Spreads

Company Name	wgt	RED Ref. Ob.	RED Pair	Corp Tkr	5 Yr CDS Tkr	Spread (bp)
11) Abitibi-Consolidated Inc	1.00	US003669AJ70	003CB6AD7	RFP	CABY1U5	N.A.
12) Advanced Micro Devices Inc	1.00	US007903AJ69	007G93AB8	AMD	CT355268	742
13) AK Steel Corp	1.00	US001546AG50	0A169AAB8	AKS	CAKS1U5	1349
14) Allegheny Energy Supply Co LLC	1.00	US017363AE25	018A99AC3	FE	CAYE1U5	134
15) Allied Waste North America Inc	1.00	US01958XBH98	01AED5AC5	RSG	CAW1U5	N.A.
16) Alltel Corp	1.00	US020039DB64	0C204KAA1	VZW	CAT1U5	18
17) American Axle & Manufacturing In	1.00	US02406PAE07	UU2679AA7	AXL	CT370292	405
18) Amkor Technology Inc	1.00	US031652AQ30	0D47B7AB1	AMKR	CT356410	529
19) AMR Corp	1.00	US001765AB26		AMR	CAMR1U5	N.A.
20) ARAMARK Corp	1.00	US038521AB64	03BD7HAB5	RMK	CT371596	300
21) Meritor Inc	1.00	US043353AC58	0E7688AB0	MTOR	CARM1U5	561
22) Avis Budget Car Rental LLC / Avis	1.00	US053773AF49	05BAEMAB1	CAR	CX376680	380
23) Beazer Homes USA Inc	1.00	US07556QAJ40	07CABWAA5	BZH	CBZH1U5	466
24) Bombardier Inc	1.00	US097751AH40		BBDBCN	CBOMB1U5	359
25) Celestica Inc	1.00	US15101QAC24	1G611RAC9	CLSCN	CCLS2U5	120
26) Charter Communications Holdings	1.00	US16117PBH29	1H728WAD4	CHTR	CX356815	N.A.

Australia 61 2 9777 9600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000  
Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.  
SN 206220 6687-556-1 26-Jun-13 18:28:51 CEST GMT+2:00

Source: Bloomberg/Markit

Every six months a new series of CDX and iTraxx is released. Each new series will not necessarily have the same index constituents. Prior to the release of a new series, Markit will consult the CDS desks of the large dealers to see what they think a representative index of CDS should look like. This is to ensure that the credit mix remains up to date, as there could

have been large changes in credit quality or a bankruptcy since the release of a series. The new series is then considered “on the run” and the liquidity of the older “off the run” indices begins to decline as successive new series are released.

Though credit indices are far more liquid than single-name CDS, this is still an OTC market and as such lacks the pricing transparency of other exchange traded instruments, namely equity. This inherently means that there is a degree of subjectivity when pricing the portfolio (also known as “marking the book”). In principle, a trader is supposed to mark each position based on the last known trade, as provided by the dealers, the rationale being that this is a transactable price. If this is a security that is traded frequently and in substantial volume, then that is fair assumption, but in instances where there might have only been a very small trade done at a price greatly above or below market, this leaves the trader a lot of discretion. Beyond that there is the issue of what price within the bid/ask spread is the correct mark.

Furthermore, because of the relatively large notional value of fixed income assets compared to most equities, the number of tradable assets is smaller, resulting in a more concentrated market. It is for this reason that there is no significant retail presence in the credit index market, unlike equity markets where retail investors can have an impact on the market. Consequently, the typical investors in the credit index market are mostly institutions wanting to quickly increase or decrease their credit exposure by a significant size, for hedging or speculative purposes.

## **Risk Management of SCP**

The risk management framework for the SCP rested upon three key metrics: Value at Risk (VaR), Credit Spread Basis Point Value (CSBPV), and Credit Spread Widening 10% (CSW 10%). In addition, there were limits on portfolio composition and asset type, but these were based on the CIO portfolio as a whole and not specific to the SCP, which effectively gave the CIO incredibly wide discretion in terms of security selection and portfolio concentration regarding the SCP. Given that the CIO was not one of JPM’s client-facing business units, it was not subject to issues of regulatory compliance, and as such it was scrutinized to a lesser degree.

At the most basic level, VaR measures the tail risk of an asset or portfolio. There are two ways to calculate VaR in the financial industry: using historical market data or via a Monte Carlo simulation. To set a VaR limit, a time horizon and confidence level are selected and the set of P&L information generated from either method are used. In the case of JPM, they used historical market data. For example, if a portfolio has a “one month 1% VaR (historical)” of \$100,000, that means that based on historical data from the past month, there is a 1% probability that the portfolio loss will exceed \$100,000.

While conceptually this makes sense, both forms of VaR are limited by the robustness of the data underlying each security. More specifically, VaR is more reliable when assessing the risk of liquid securities (i.e. exchange traded equities and Treasuries) with extensive pricing history than when dealing with OTC instruments that sometimes might not trade daily. In addition, when calculating VaR of a portfolio, the correlation between underlying assets needed to be taken into account as well, which was at best not constant, and at worst highly subjective. There is also the prosaic argument that VaR is limited by its inputs, as VaR

seemed to understate risk through the recent financial crisis because market moves of such magnitude were unprecedented.

CSBPV (sometimes known as CS01) simply measures the price sensitivity of an asset or portfolio for each basis point change in credit spread. In other words it is the “credit duration”. If a portfolio has a CSBPV of \$20,000, it means that for every change in the credit spread of 1 basis point, the portfolio PNL will move by \$20,000. While this measure is good for estimating the impact of credit spreads on small moves in the credit market like duration, it does not account for convexity. In light of this limitation, the CSW10% measure is used. It is similar to CSBPV but more applicable for scenario analyses of tail events because it measures a wider movement in spreads and tends to be more relevant when stress-testing portfolios.

While each of these three metrics is important, JPM had no limits placed on the actual market value of the SCP. Market value is simply the measure of the value of the portfolio assets. For instance, if a portfolio was long \$1,000,000 notional of bonds which were trading at 97.5 and short \$1,000,000 notional of bonds trading at 92.5, the different market exposures of the portfolio would be:

- Long Market Value (LMV)      \$975,000      (97.5% x \$1,000,000)
- Short Market Value (SMV)      -\$925,000      (92.5% x -\$1,000,000)
- Gross Market Value (GMV)      \$1,900,000      (LMV - SMV)
- Net Market Value (NMV)      \$50,000      (LMV + SMV)

In this example the portfolio might appear “hedged” because it only has \$50,000 of actual market exposure, but this is misleading without knowing the relationship between the long and short side of the portfolio. If the example portfolio is long and short different bonds from the same issuer, it will arguably have less risk than if there are long and short bonds from different issuers. Even in the scenario where the bonds are from the same issuer, the price action of each bond could behave in very different ways due to differences in liquidity between the two issues. To clarify the terminology, when referring to CDS, being “long/buying protection” is equivalent to being “short credit” in that a negative view of credit is being expressed. This position is conceptually the same as being long/buying an annual insurance premium (represented by the credit spread) in return for protection against the risk of default given the implicit expectation of default. The opposite is true when being “short/selling protection” and “long credit”.

JPM monitored their bank-wide and unit level risk by setting Level 1 and Level 2 limits on the VaR, CSBPV, and CSW10%. Level 1 limits were considered more serious and based on VaR and internal stress-test thresholds, while Level 2 limits were based on CSBPV and CSW 10%. These limits existed at both an aggregate bank-wide level as well as on a more localized business unit level. Bank-wide risk limits were set by the CEO Jamie Dimon and the bank CRO John Hogan. Unit level risk limits were set by each unit’s head and risk management team in consultation with the bank CRO. In the case of the CIO, the risk limits would be set by Drew and Goldman in consultation with Hogan. When a limit was breached on the bank-wide level, the CEO, CRO, and Operating Committee would be notified. When a limit was breached at the business unit level, the head of the unit and the unit’s CRO would be notified,



that is, the limit that was breached, by how much it was breached, a description of the breach, and how long the limit had been breached. The purpose of this process was to prompt a discussion of the level of risk, but it did not necessarily require immediate action to reduce portfolio risk. Indeed breaches of the risk limit were not uncommon, though to increase the risk limits or issue a waiver on each limit required the approval of the CEO and CRO in the case of bank-wide breaches, or the unit head and the unit CRO in the case of each business unit. In the context of the CIO and Ina Drew, breaches in VaR and CSBPV limits were considered incidental and minor, but breaches in CSW10% would get her attention.

In the CIO hierarchy, both the risk management team and the investment team of the CIO group reported to Drew, which meant that ultimate responsibility for trading and risk management rested with her, creating a potential conflict of interest. As mentioned previously, there had been no formal CRO role within the CIO until the appointment of Goldman, in response to the CIO's growing size and complexity. However, despite his long career in the capital markets, Goldman had never previously served in a risk management capacity. He had been nominated to the position by Barry Zubrow who, in addition to being JPM's bank-wide CRO prior to Hogan, was also Goldman's brother-in-law. Furthermore, bank-wide risk management depended on the CIO's risk management team reporting the risk of the portfolio, tainting the independence of their reporting. In spite of Drew's wide-ranging authority, the only reporting she received on a daily basis was the CIO portfolio level VaR, Stress VaR, and the daily PNL. She did not receive a separate SCP attribution of these risk metrics, let alone changes in portfolio exposure or individual daily trades.

## **Events of End 2011 and January 2012**

As 2011 drew to a close, the CIO team was mandated to reduce the RWA exposure in the SCP. To comply with their pre-determined 2012 risk budget, they would have to reduce their RWA by \$30 billion. In addition, senior management had asked the CIO to assess the impact of a further reduction of \$20, \$40, or \$60 billion in RWA, though after the CIO determined that a further reduction of \$10 billion would already negatively impact the SCP by \$500 million, no action was taken. In addition to the high execution costs having a negative impact on the portfolio PNL, the CIO was reluctant to reduce exposure because of their newfound ability to generate positive PNL.

In the last quarter of 2011, the CIO was able to produce \$400 million in revenues from the bankruptcy of American Airlines. They did this by shorting large amounts of the CDX Series 11 HY Index, a few months before the index was set to expire on December 20<sup>th</sup> 2011. In doing so, the CIO became buyers of a put option on the credit markets and would be paid out handsomely in the event of a bankruptcy by one of the index constituents. While it is unclear if the CIO held a specific view on one of the underlying credits, this trade was clearly speculative in nature and ran against the traditional longer term, hedging-oriented investment approach of the CIO.

It was at this time that Bruno Iksil, who was responsible for the execution of these trades, began to be noticed in the markets for his aggressive trading. While perhaps not identifying Iksil specifically, the market began noticing someone coming in and bluntly pushing the index down with large shorts whenever it seemed to recover, earning them the nickname "caveman".

While potentially reckless, from the CIO's perspective if there was no bankruptcy the downside would be limited to the premiums they paid over the remaining months, which they felt were small in the context of the greater CIO portfolio. As it so happened, however, on November 29<sup>th</sup> 2011, less than a month before the index was to mature, American Airlines filed for bankruptcy. The CIO's near-term put option netted the portfolio \$400 million in revenue.

While the investment mandate behind the SCP had not changed, it was clear that the risk appetite of the CIO investment personnel had. As the team started 2012 by reducing their RWA exposures as mandated, they took daily losses on the portfolio. To make matters worse, they lost an estimated \$50 million when Eastman Kodak defaulted on January 19<sup>th</sup>. Instead of a sizeable windfall (as with the American Airlines situation), the portfolio was left exposed to this event because in an effort to reduce RWA, they had not increased the short side of the portfolio commensurately to offset the protection that had expired in December. Coupled with the fact that the SCP had previously generated a windfall profit from this very type of event (instead of the current loss) this gave the CIO pause about the viability of fulfilling their seemingly competing mandates. Although they had been told to reduce RWA of the SCP, they were given no specific schedule of progress, just that they do so before the end of 2012. Nor were there any explicit guidelines regarding the amount of trading losses senior management would be willing to withstand in order to meet the specified reduction in RWA.

In addition to trading losses at the start of the month and the American Airlines bankruptcy, the portfolio lost money on a mark-to-market basis because it was not behaving as expected. Essentially, with credit markets rallying, their long IG protection was losing more money than their short HY exposure was making, even though they had initiated these positions to be CSBPV-neutral to credit moves. In other words, the portfolio was theoretically positioned to neither make nor lose money in small market moves, but in reality this was unfortunately not the case. To make matters worse, they could not reduce exposure even if they wanted given how illiquid the market was overall, let alone in relation to how much of the overall volume they controlled. Thus, as a result of experiencing a \$100 million loss in January and with the prospect of another \$300 million in mark-to-market losses, Drew requested Martin-Artajo, Iksil and the rest of the SCP team to devise a plan for the best way forward.

In their presentation to Ina Drew, Martin-Artajo and Iksil concluded that the most appropriate course of action was to construct a hedged portfolio of "cheap options" that would have a low net exposure. To execute this, they made an about-face from their initial decision to reduce portfolio exposures overall and instead increased them on both the long and short sides. Specifically, they increased their long exposure by selling IG indices and buying a smaller amount of HY indices. The rationale was that if they established the correct hedge ratio between longs and shorts, they would have a portfolio that generated returns in bankruptcies but was partially "financed" by the premiums they were collecting on the IG indices they sold. This positioning would also have the benefit of reducing RWA, provided they kept the net exposure under control, since RWA calculations did not distinguish between IG and HY risk, as well as muting losses on their short exposure if credit indeed rallied. While this seemed to be a good solution, they would somehow have to implement it within the allowed risk limits, despite the portfolio breaching its VaR and CSBPV limits at various points in January. The CIO had been able to obtain a temporary reprieve at the time, but they had a longer term solution in mind for this problem.



In addition to their new strategy, the CIO decided to implement a new VaR model which would both lower their stated risk and, importantly, their RWA. While it was not against bank policy for individual business units to develop risk models, to be then vetted by the Model Risk and Development office, it was definitely unusual. Furthermore, the quantitative analyst in the CIO tasked with this job, Patrick Hagan, had never before designed a VaR model in his career. Hagan was initially asked by Martin-Artajo in the middle of 2011 to begin researching a new risk model, with the rationale that the existing model was too conservative and overstated risk, and the new model would be more Basel III compliant. This somewhat coincided with a period when the investment team had greatly ramped up the size and risk of the portfolio to levels not previously seen.

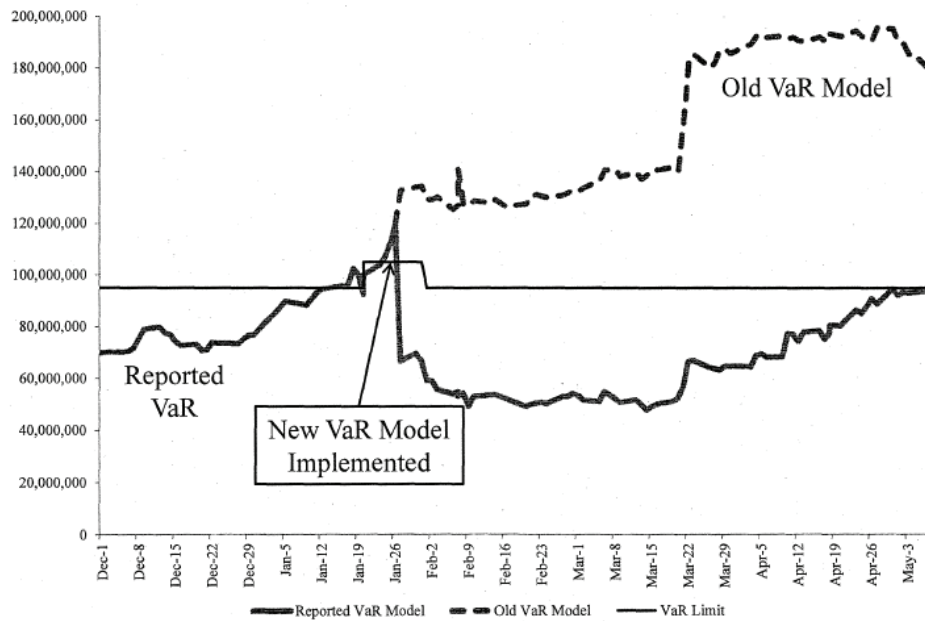
It was during the difficult days of January 2012 that the model's results were brought up again and compared to the existing risk model results. Given the favourable comparison of risk metrics, Martin-Artajo asked Hagan to complete work on this model for use with the SCP. When the CIO model was submitted to the Model Risk and Development office in January 2012, it responded by pointing out mathematical and operational issues, and requested an action plan to remedy these issues before approval would be granted.

Given the CIO's pressing need to implement the model to avoid further breaches of their risk limits and reduce RWA, Hagan was told to keep the pressure on the Model Risk office to approve the model for immediate use. In the end a compromise was reached with the Model Risk and Development office that if the January tests were acceptable, the CIO would be allowed to implement the model before a formal review was completed. The standard procedure was to run both models concurrently for several months and then analyse the divergence in results before any approval could be considered. But in this case the model was implemented without that comparison and without even fully addressing the issues previously raised. The immediate result was a massive reduction in VaR by 50% when compared to the original model. This was the official risk number the CIO would use for their risk limits going forward. For all of his work on the model, Hagan admitted to being surprised at the magnitude of the decrease.

### Exhibit 3

*Value-at-Risk Calculation for the CIO Portfolio as Reported in the 10-Q*

## Value-at-Risk for the CIO (10Q VaR)



Source: Subcommittee chart created from data provided by JPMorgan Chase, JPMC-Senate 1 Levin 000155-6

## Events of February to April 2012

Armed with the new risk model, the CIO entered February ready to implement their new investment strategy. However, as the credit markets continued to rally, they again lost money on the portfolio for the same reasons as before. To make matters worse, on February 13<sup>th</sup>, another constituent of the HY index, ResCap, filed a pre-packaged bankruptcy petition, which generated negative performance in the portfolio once more. Iksil still could not reduce the portfolio positions in this environment and concluded that the only way to stem the continued negative PNL was to further increase the long IG exposure, given that the existing hedge ratio of the portfolio seemed to be too “light”. Clearly this was not the ideal way to proceed, but it was justified internally by pointing to the increased amount of positive carry the portfolio would earn. Martin-Artajo also firmly believed that the market was “wrong”. During the month-end business review meeting between JPM senior management and the CIO team, they explained that they were reducing RWA as mandated, but they did not disclose that they were doing so by actually increasing the portfolio exposure overall. Most importantly, there was no mention of the portfolio’s losses, which included a \$69 million loss in February, meaning that the cumulative negative PNL was \$169 million.

**Exhibit 4**  
*Synthetic Credit Portfolio Risk Limit Breaches During 2012*  
**Synthetic Credit Portfolio Risk Limit Breaches**

<b>CS01</b>				
<b>CIO VaR</b>		Limit Raised	New Model Implemented; Old Model Later Restored Would Have Been In Breach	
<b>CSW10%</b>				
<b>CIO MTM Stress-Loss</b>				
<b>2012</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April (1-13)</b>

\* Tested Weekly. See 5/13/2012 "Discussion Materials," OCC-SPI-00000023, at 030.

Source: Subcommittee chart created from data provided by JPMorgan Chase, JPM-CIO-PSI 0000628.

In March, the CIO had no respite from their losing trades as the portfolio continued to lose money. Again, Iksil could not reduce their positions because the SCP had grown so large, but by the same logic he should not have increased the exposure even further, which is exactly what happened. By mid-March there was a sense internally that despite the risks – and there being a good chance that the market might be “on to them” – they had no choice but to continue growing the portfolio if they wanted to mitigate the negative performance. Iksil reluctantly added an additional \$40 billion of notional exposure to the portfolio in the form of the more recent, and liquid, CDX IG Series 17 and 18 and iTraxx IG Series 16 and 17 indices.

On March 20<sup>th</sup>, the same day that Drew and Goldman gave a presentation to the bank-wide directors’ Risk Policy Committee, the SCP reported its worst single day loss of \$43 million. In addition, Iksil and Martin-Artajo started discussing the possibility of a \$600-\$800 million “lag” in terms of further losses to the SCP as the discrepancy grew between their existing marks and those of the dealers. Again, none of this was discussed by Drew or Goldman at the meeting for the simple reason that she, as head of the CIO, was not even aware of the discussions surrounding the lag, nor the steep increase in portfolio exposure which continued in the days after the meeting.

It was on March 23<sup>rd</sup> that Ina Drew gave the order to her traders to stop trading (“Phones down”) after convening her team to review the size and exposures of the SCP, which shocked her. She had been told that the traders were “defending” their positions (buying to support the market price in order to avoid having to mark the position lower), a trading philosophy she

did not agree with. While Drew's order prevented the SCP from growing to an even larger size, the reality was that it had already become too unwieldy. The CIO had "become" the market in certain indices, as evidenced by price rebounds/declines in those indices once they were ordered to stop trading. This was not lost on other participants in the space, which were mostly credit-focused hedge funds, who now dubbed Iksil the "London whale". These funds began taking the opposite sides of the CIO's trades in the hope of forcing them into a messy unwind of the portfolio. They even started trading the single-name CDS on the underlying index credits to influence the fundamental value of the indices themselves. By the end of the month, the CIO's total cumulative loss had grown to a staggering \$718 million, of which \$319 million were taken on the last day of March.

### Exhibit 5

#### *CIO Position Size in Various Credit Tranches Relative to Total Volume Traded in 2012*

ITRAXX SERIES 9 7Y			
Month	CIO Notional Traded	Street Volume	CIO %
Jan-12	\$ 993,000,000	\$ 6,181,250,000	16%
Feb-12	4,751,750,000	9,754,250,000	49%
Mar-12	775,000,000	8,325,375,000	9%
Apr-12	487,500,000	5,004,150,000	10%
Total	\$ 7,007,250,000	\$ 29,265,025,000	

ITRAXX EUROPE SERIES 9 10Y			
Month	CIO Notional Traded	Street Volume	CIO %
Jan-12	\$ 11,769,250,000	\$ 26,758,710,300	44%
Feb-12	7,244,900,000	15,205,250,000	48%
Mar-12	6,601,250,000	13,806,250,000	48%
Apr-12	338,750,000	5,570,925,000	6%
Total	\$ 25,954,150,000	\$ 61,341,135,300	

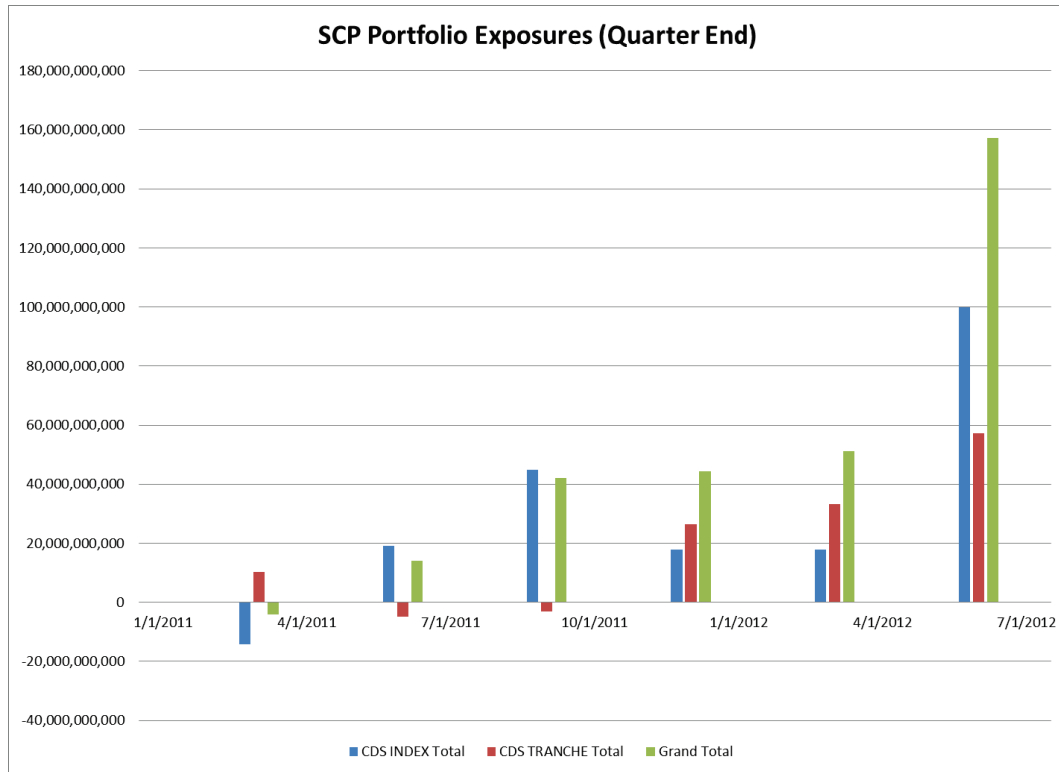
ITRAXX EUROPE SERIES 16 5Y			
Month	CIO Notional Traded	Street Volume	CIO %
Jan-12	\$ 26,440,500,000	\$ 206,771,511,713	13%
Feb-12	36,359,500,000	216,991,196,801	17%
Mar-12	26,075,000,000	199,058,170,509	13%
Apr-12	25,000,000	13,785,754,578	0%
Total	\$ 88,900,000,000	\$ 636,606,633,601	

CDXNAIG.9 7Y			
Month	CIO Notional Traded	Street Volume	CIO %
Jan-12	\$ 7,091,500,000	\$ 55,936,345,841	13%
Feb-12	8,387,000,000	48,791,460,000	17%
Mar-12	2,017,000,000	41,738,540,328	5%
Apr-12	256,000,000	23,310,200,000	1%
Total	\$ 17,751,500,000	\$ 169,776,546,169	

CDXNAIG.9 10Y			
Month	CIO Notional Traded	Street Volume	CIO %
Jan-12	\$ 28,528,000,000	\$ 83,065,700,000	34%
Feb-12	20,032,000,000	48,049,133,456	42%
Mar-12	9,819,500,000	72,016,977,456	14%
Apr-12	677,000,000	31,722,763,000	2%
Total	\$ 59,056,500,000	\$ 234,854,573,912	

Note: April data extends to April 26, 2012.

**Exhibit 6**  
*Synthetic Credit Portfolio Exposures by Calendar Quarter End*



Source: JPM-CIO-PSI 0037609

Up until the last day of the quarter, there could be some slight leeway in terms of robustness of marks (though marking policy should technically be consistent year round), but for quarter end they would have to be reliable and solid. These marks would be the official values that JPM would use to calculate its quarterly earnings; any error or misrepresentation could force it to restate its financials – sending a very bad signal to the market.

The typical marking policy was to obtain a bid and ask price on each security from several different dealers and to take an average or weighted average of the midpoint of those prices. Ideally, those prices would be based on a recent transaction of reasonable size and liquidity, i.e. not a firesale of a small position. However, sometime in early 2012, Iksil was instructed by Martin-Artajo to disregard that conventional approach and to mark the portfolio at “fair value” using his judgment because they believed the market was being irrational. As such, Iksil and his colleagues became more selective about which dealer quotes they felt were more “real” (such as those dealers with whom they traded more frequently) and discounted the others. According to the Valuation Control Group (VCG) of the CIO, the traders were afforded some discretion in their marks provided they remained within certain pricing thresholds, as determined by the aggregated dealer marks. In this specific case, their approach, while highly subjective and unsystematic, did not exceed those thresholds.

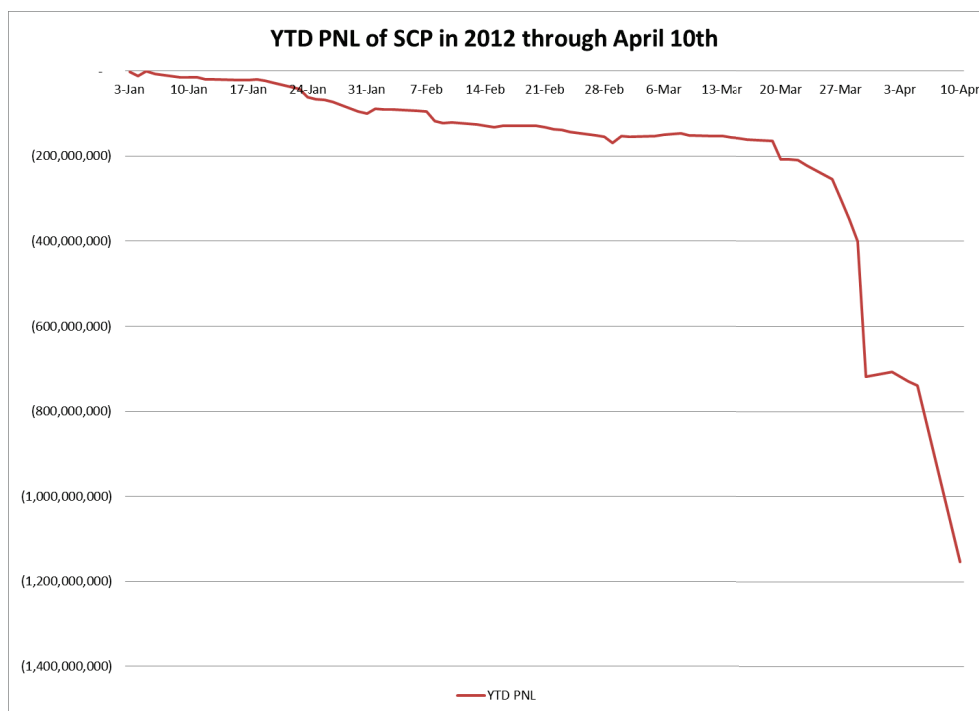
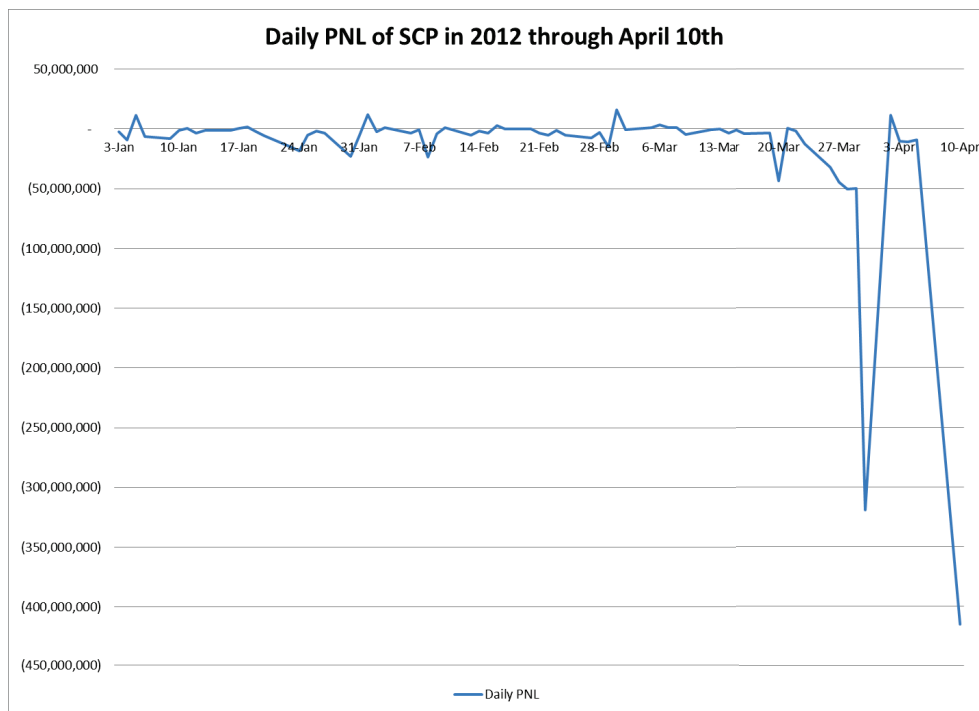


Unfortunately for JPM as a whole, it should have been noticed that the CIO VCG had obtained a “Needs improvement” rating from a JPM internal audit on March 30<sup>th</sup> for using untested risk models and weak justification when setting its allowable pricing thresholds. Furthermore, as stated in the SCP’s own mandate, the CIO conceded that they were not experts in derivatives valuation and were thus “price takers” when it came to portfolio valuation. When the SCP was originally conceived, if there was a pricing discrepancy the CIO was supposed to defer to the investment bank’s marks, as there was no fundamental reason for a gross discrepancy to exist. As the CIO began exercising more pricing discretion, however, this became a source of contention between them and the investment bank’s credit derivatives desk. Not only was this a blatant internal inconsistency within JPM, but it created an awkward problem as the CIO and the investment bank now found themselves on opposite side of the same trade.

Any hope of keeping this problem internal vanished on April 4<sup>th</sup>, when the *Wall Street Journal* contacted JPM to inform them that it was writing an article on the CIO’s credit index portfolio. They were able to name Bruno Iksil as the trader and even to estimate the size of their positions in the market. A week or so before JPM’s CEO was to discuss preliminary Q1 2012 results, the financial press was about to shine a very bright light into a dark corner of a bank which had prided itself on its risk management ability.

## Appendix A

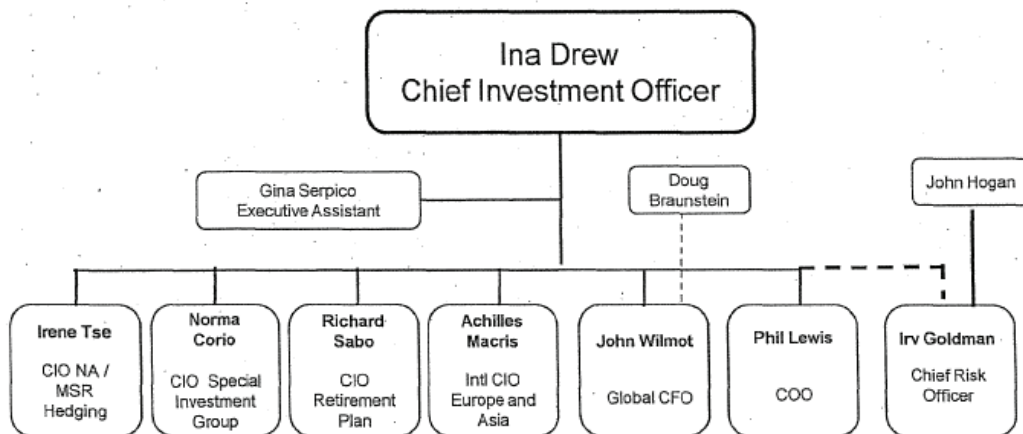
### Daily and Year-to-Date PNL of SCP through April 12<sup>th</sup> 2012



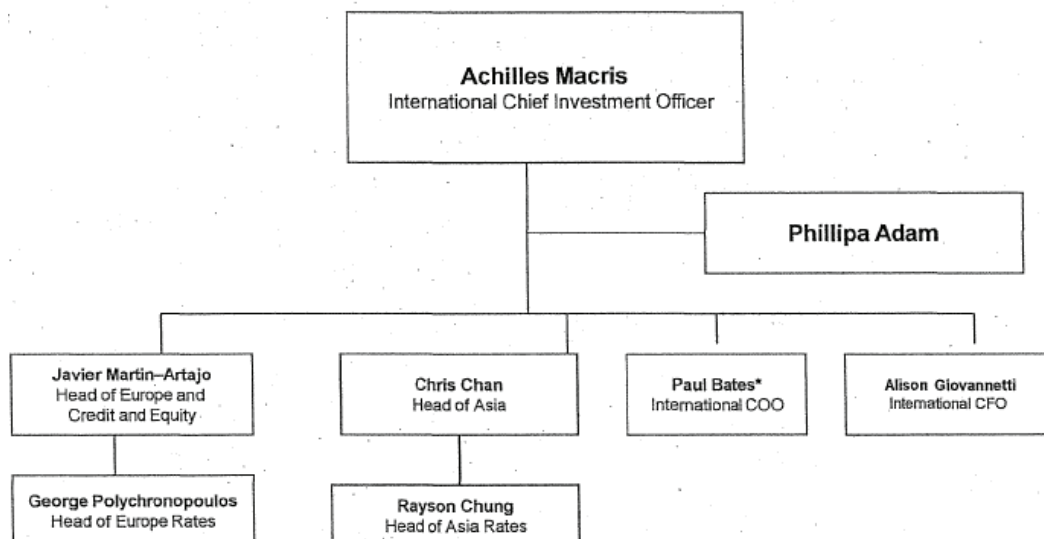
Source: Subcommittee chart created from data provided by OCC spreadsheet, OCC-SPI-00000298, Numbers do not reflect restated P&L figures,

**Appendix B**  
*Organization Charts of CIO*

## Chief Investment Office – Direct Reports

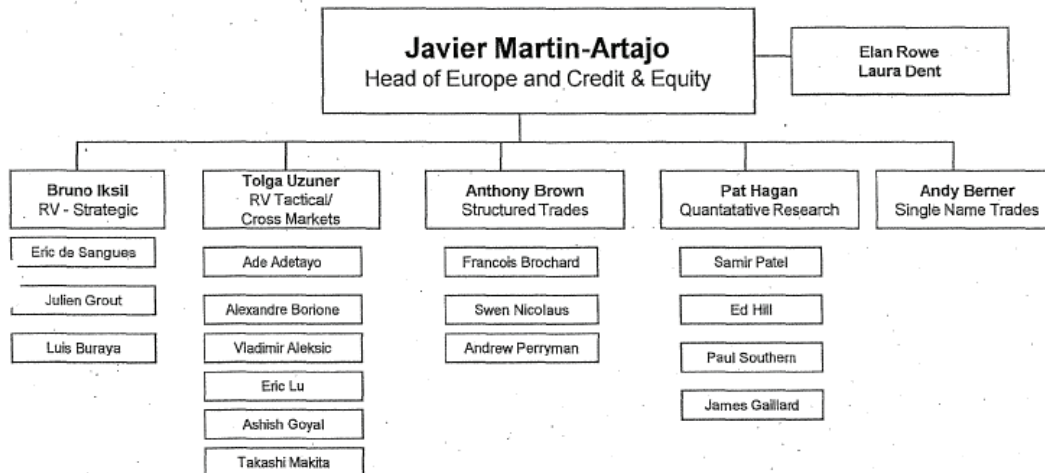


## International CIO

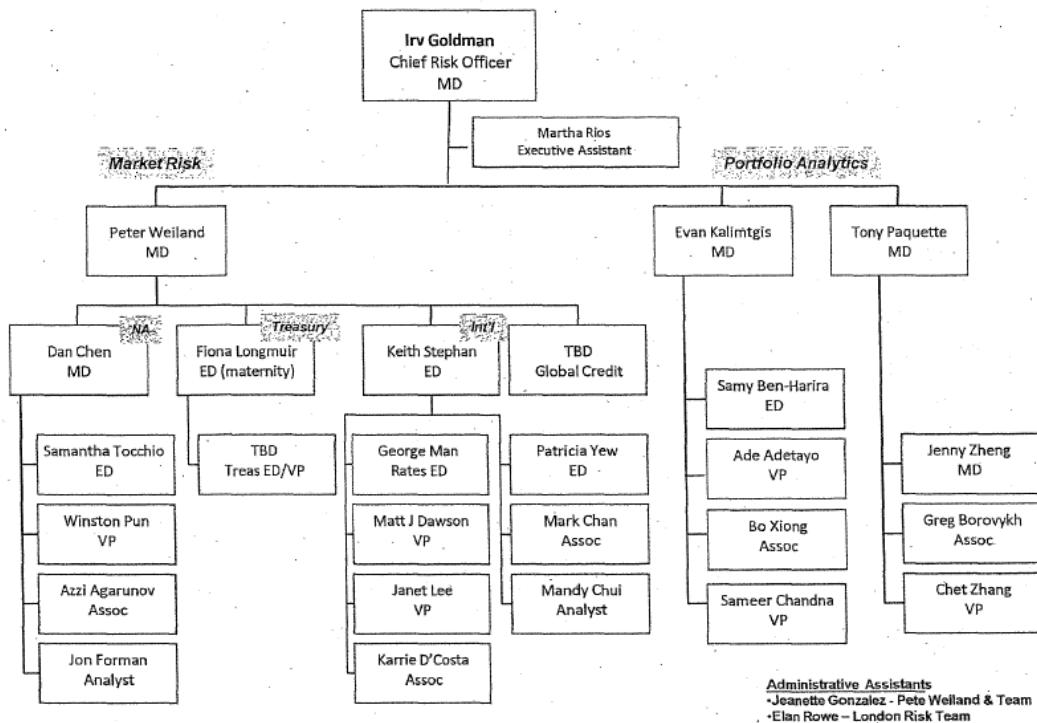


# International Chief Investment Office

## Equity and Credit



## CIO RISK MANAGEMENT TEAM



**Appendix C**  
*CIO Historical Timeline of Events*

**Timeline: Key Events in JPMorgan Chase Whale Trades**

Nov. 2006	Bank authorizes Chief Investment Office (CIO) to trade credit derivatives.
2008	Synthetic Credit Portfolio (SCP) acquires its name.
2009	As financial crisis eases, SCP earns \$1 billion.
2010	OCC examines CIO investment portfolios; SCP is not explicitly mentioned. OCC requires documentation of investment decisions; Ina Drew criticizes OCC intrusiveness.
2011	Over 2011, SCP's notional size increases tenfold from \$4 billion to \$51 billion.
Nov. 2011	SCP makes \$1 billion credit derivatives bet for gain of \$400 million.
Dec. 2011	Bank & CIO managers decide improving economy lessens need for credit protection. Jamie Dimon instructs Ina Drew to reduce the CIO's Risk Weighted Assets (RWA).
Dec. 22, 2011	CIO traders propose reducing RWA, in part, by manipulating models. CIO quantitative head Pat Hagan develops CIO models that artificially lower SCP risk results.
Jan. 6, 2012	SCP trading breaches CS01 risk limit; breach continues and increases until CIO risk metrics are overhauled in May.
Jan. 16-20, 2012	SCP trading causes four-day breach in bankwide VaR; breach reported to Jamie Dimon.
Jan. 23, 2012	Dimon and Chief Risk Officer John Hogan approve a temporary bankwide VaR limit increase to end the breach; told a new CIO VaR model will reduce CIO's VaR by 44%.
Jan. 27, 2012	CIO names SCP for the first time in a routine VaR report to OCC. New VaR model approval is rushed through and drops CIO's VaR overnight by 50%.
Late Jan. 2012	SCP losses escalate. CIO traders begin mismarking SCP values to minimize losses. Mr. Dimon orders bank to stop giving daily CIO profit/loss data to OCC; OCC objects; Chief Financial Officer Doug Braunstein restores data, angering Mr. Dimon.
Late Jan. 2012	CIO trader Bruno Iksil gives presentation showing SCP lost \$100 million in January and could lose \$300 million more; proposes "trades that make sense" -- buying more longs to offset losses and reduce RWA. OCC holds standard quarterly meeting with CIO; told SCP would be reduced.
Feb. 2012	Over February, SCP loses another \$69 million.
Mar. 2, 2012	Comprehensive Risk Measure (CRM) used to calculate RWA indicates SCP could lose up to \$6.3 billion in 2012, in worst case scenario. CIO risk manager calls result "garbage."
Mid-Mar. 2012	Julien Grout, SCP trader, keeps 5-day spreadsheet showing reported SCP values deviated from midpoint prices by over \$400 million. Trader Bruno Iksil calls SCP's booked values "idiotic" and calls SCP book "more and more monstrous." Over two weeks, CIO traders acquire \$40 billion more in multiple long credit derivatives, in what OCC called "doubling down" on an already losing trading strategy.
Mar. 20, 2012	Traders Iksil and Grout report internally \$40 million loss, largest SCP loss to date, and a \$600-800 million "lag" in SCP book, but Ina Drew says she did not read the email.

Permanent Subcommittee on Investigations  
**EXHIBIT #1i**



### Timeline: Key Events in JPMorgan Chase Whale Trades

Mar. 23, 2012	Ms. Drew orders "phones down" and stops SCP trading. SCP trading breaches CSW10% limit; it continues until risk metrics overhauled in May.
Mar. 29, 2012	SCP trading breaches CIO Stress Loss limit, which is tested weekly, through April.
Mar. 31, 2012	At quarter end, SCP's notional size triples from \$51 billion to \$157 billion, and SCP flips from net short to net long. Total quarterly losses reported internally as nearly \$719 million. CIO London office head Achilles Macris says he's "lost confidence" in his team, SCP has moved into "crisis mode."
Apr. 5, 2012	After media inquiries, bank prepares talking points that SCP is a "hedge" and regulators were "fully" informed of trades, but then drops both words from talking points.
Apr. 6, 2012	Bloomberg and Wall Street Journal report whale trades by JPM CIO office in London.