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Matthew A. Lieber

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Matthew A. Lieber

Steven H. Kasoff

*Yale University School of Management*

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# Yale Program on Financial Stability

## Lessons Learned

Stephen King

By Matthew A. Lieber and Steven H. Kasoff

*Stephen King started his career in finance at Bankers Trust in 1997 as a computer scientist with a business degree. He worked on structured credit transactions when credit derivatives were just being invented. In 2005, King joined Barclays' structured credit group, where he managed a CDO (collateralized debt obligation) correlation desk that was different from standard dealer CDO units. In 2009, he launched C12 Capital Management to relieve Barclays of distressed subprime positions. Presently, King finances and builds luxury hotels as founder and CEO of Sardis Developments. This Lessons Learned summary is based on an interview with King.*

### **The dawn of structured finance was a promising time for financial wizards like King and the institutions that employed them.**

King brought computer engineering training, high-end quantitative skills, and a creative mindset to Bankers Trust (BT). The 1998 Long-Term Capital Management crisis interrupted his initial assignment to emerging markets. BT reassigned King to its structured credit unit. "It was right at the dawn of structured asset-backed derivatives."

Deutsche Bank acquired BT in 1999 and moved King to its derivatives group in New York. One deal King recalled was Rhombus, "which involved selling protection on a portfolio of asset-backed securities owned by Bayerische Landesbank, buying protection from insurance companies and other counterparties around the world." Another named Descartes involved a similar approach. "We would go and buy a portfolio of securities, fund them in their conduit, buy protection, and find a way to take out the carry as an arbitrage."

For Deutsche and then for Barclays from 2005 through 2008, King's groups engineered complex credit deals that offered profitability across a range of different scenarios. These transactions commonly had many sides. In one deal, they might exchange risk for cash flows, buy swaps to mitigate risk, and use leverage to exploit the difference.

We [had] various ways of generating profit for the bank, whether in structured client transactions, proprietary trading, trading book profits, anything and everything that [was] associated with asset-backed securities [ABS].

### **King's ABS correlation desk at Barclays went by many names—and brought many ways to profit.**

There were many names for King's group, and it had many ways to make money. "It was called a principal mortgage trading desk in one caucus of people. It was a structured synthetic ABS desk in another, it was a synthetic CDO in another, it was [an ABS] correlation desk in another." What made it unique beyond the complexity of its transactions was the way the group combined unorthodox, creative deal-making and disciplined attention to risk. Whereas a more conventional CDO structuring group would accumulate risk, structure it,

then sell it, King's desk "would accumulate risk in one or a number of markets, then create instruments that referenced those risks and place those into another market." From there, opportunities followed to "take a mixture of profits from basis, carry, or directional positions," depending on different market scenarios and volatilities.

The name "ABS correlation desk" referred to a strategy distinct from standard dealer CDO structuring groups. Similar to corporate correlation desks, King's group at Barclays was accumulating risk, then creating derivatives linked to that risk in the form of protection from other investors. Customizing these new derivatives to fit investor appetites and acquiring ratings on them permitted King and Barclays to charge a premium price. However, these trades provided only a partial and imperfect hedge, which then had to be risk-managed and further hedged. This approach is often referred to as delta hedging.<sup>1</sup>

**Correlation had at least two aspects, spurring King's group to assess risk based on (1) industry standards and (2) "market-implied numbers" derived from a multiplicity of factors.**

Delta hedging forced King's group to think seriously about correlation, which took on at least two meanings in the case of the Barclays group: the correlation of risk (of loss or default) among mortgages within a mortgage-backed security and the correlation of risk between different CDO tranches or mortgage-backed securities. In a typical transaction, an investor approached them seeking to acquire \$100 million of exposure to a AAA-rated tranche that referenced a portfolio of subprime mortgage-backed securities. King's group identified the particular subprime bonds (but did not need to actually acquire them), get the AAA rating on the tranche, and make an offer to the investor. Offer accepted, they had a synthetic short risk position in the mortgage bonds; "we needed to hedge" by buying the ABX Index or other derivatives linked to a similar portfolio of mortgage bonds. They had to make sense of two different probability distributions, King said: the rating agency modeling based on historical asset value and defaults versus market-implied numbers.

You carried two separate views of the world: (1) a real-world view affecting how we're putting portfolios together for investors and rating agencies; and (2) what models are we using to extract that same info from the market?

Deriving market-implied distributions for CDO tranches was challenging given the illiquidity and complexity of the security. In the corporate market, King explained, "specific names were quoted at specific maturities on homogeneous contracts. The ABS world wasn't like that." Valuations of single names were not informative. King's group had to assess the likelihood and correlation of losses within and between the tranches.

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<sup>1</sup> James Chen, "Delta Hedging," Investopedia, updated January 28, 2021, <https://www.investopedia.com/terms/d/deltahedging.asp>.

**King's strategy meant that running the desk was a high-maintenance affair with multiple keys required for success: hedging to limit risk, constantly updating the assumptions, stress-testing pre-crisis.**

King recognized a proliferation of models, each with its own assumption and flaws, and favored an internally developed tool called Matrix Price. "It took in every bit of information we could gather every day on every bond." King worked at length with statistician David Li but said that their math exercises were ultimately not elucidating. Rather, determining the correlation values required making assumptions and constantly updating them whenever prices moved.

**Delta hedging forced King's group to approximate a marked-to-market position when market prices were not available.**

In early 2007, after receiving kudos for his profits in 2006, King stress-tested his portfolio using high correlation values of 60% to 70%. The results were alarming enough for him to act early in 2007 to increase his hedging across the portfolio.

If I'd have sat and just taken price testing, or just said, "Don't worry, it's in a non-mark-to-market book"—just wait for the steam roller to ride over me. That's why we're here today. We wired ourselves up to those Matrix Prices and had marked-to-market "super senior." We had to react because we were marked to market. And if we weren't marked to market, it was tough.

**With sufficient vision, technical expertise, and discipline, you could profit and survive in subprime CDOs—though such a combination was uncommon.**

Noteworthy in this case, delta hedging was effective in its market acuity and its execution. King's group deployed a combination of computer skills and engineering, independent-mindedness, and discipline. They questioned market wisdom without dismissing it, aware of the Barclays mandate that allowed somewhat freewheeling methods within clear limits.

**The institutional investors who bought subprime CDOs were not stupid; rather, they reacted to market pressures and went after what they saw was working.**

As the housing market turned bad and mortgage lenders failed in 2006–07, spreads on CDO tranches were slow to respond. "They did not widen as they should have," King explained, "because of tremendous amounts of demand from investment banks and structured investment vehicles [SIVs]." His counterparties were non-US banks and SIVs attracted to the CDOs' substantial yields. The buyers were not naive or stupid, he said, but driven to operate in a very competitive setting. The higher yields helped subsidize their core lending businesses, which were far less profitable. He described a herd effect as the CDO bubble expanded:

A little portfolio emerges in one or more of the more aggressive corporate banks. And then the other corporate banks that are near the corporate banks say, "Hold on. How

are they managing to price their middle-market lending 2 basis points inside what we're doing?"

The credit investors followed each other as they were trying to maintain a commercially viable and competitive bank lending business amidst low rates. They realized, "I can get 350 to 400 [basis point spread] on this synthetic tranche. Well, I don't even need to do much of that now to offset a huge amount. So, let's allocate some more capital to that. Well, now we're even more successful." The bullish sentiment favoring CDOs persisted into 2007, even with housing prices deteriorating, limiting any short positions in King's hedged book.

**Many CDO investors anticipated having to ride out a housing slump—the distressed assets would recover—but the dash for cash forced them to sell at huge losses.**

The fire sale came in 2008 and escalated with a vengeance. Thanks to disciplined hedging, King's group survived with profits, but it was tough going. For many CDO investors, the thinking had been, "We are golden, as long as we don't have to mark to market." Then came the realization that, "Oh, ----. If the borrowers can't refinance, then those historic numbers are garbage." Next, a tap on the shoulder: "Can you get rid of that portfolio?" Now, the loss is crystallized. King had long been bearish, but "I'm not even sure we considered quite the way it would have gone from the mortgage market to the banking to the sovereigns."

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