



Analysis of the Risk Transmission Mechanisms of Investment Banks Guiding Cross-Border Capital Flows

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Abstract. Against the backdrop of growing financial globalization, national economies have become more deeply interconnected. Cross-border capital flows have emerged as a core area of focus for investment banks. While the mechanisms of cross-border capital intermediation have matured to some extent, significant vulnerabilities in risk transmission persist. This is evident in instances where investment banks, due to flawed risk management practices, fail to address or transmit risks in a timely manner. Based on the current situation, this study adopts a comparative case study approach to examine two representative cases: the Credit Suisse–Archegos crisis in 2021 and Deutsche Bank’s role in the European Debt Crisis (2010–2012). These two cases serve respectively as typical examples of speculative derivatives risks and sovereign debt risks. By analyzing how investment banks function as systemic nodes, exploring risk transmission mechanisms, and integrating Case Analysis, the research confirms that these institutions act as both conduits and amplifiers in cross-border capital risk dynamics. Its structural design can directly affect the breadth and depth of risk transmission.

Keywords: Cross-Border Capital, Non-cleared derivatives, Offshore Jurisdictional Arbitrage.

1 Introduction

Against the backdrop of financial integration advancing alongside deepened global connectivity and trade, cross-border capital flows have grown increasingly dynamic. As core nodes in cross-border risk transmission, investment banks have overseen a sustained expansion in cross-border capital movements. While the general development trend is positive, critical issues remain, particularly in risk transmission mechanisms, which are marked by high leverage, derivative-driven exposures, and cross-jurisdictional contagion. But a holistic and systemic solution remains lacking.

This paper explores the cases of Credit Suisse (the Archegos event) and Deutsche Bank (the Eurozone debt crisis), which represent two classic paradigms of cross-border risk transmission: speculative risks from hedge fund activities and sovereign debt risks. These cases offer significant insights for the study's thematic focus. The research investigates two central questions: Through what structural designs do investment banks

actively promote or passively enable cross-border risk transmission? What are the essential differences in transmission strategies between speculative derivative risks and sovereign debt risks? Addressing these questions is vital for understanding the intrinsic logic of risk propagation in financial globalization and for providing theoretical foundations for systemic cross-border risk governance [1].

Previous empirical research shows investment banks proactively engineer risk transmission channels through two mechanisms: cross-border capital operations and financial instrument innovation. that banks typically transfer risks by expanding credit volumes and relaxing risk controls during capital inflows, particularly in undercapitalized institutions, where reducing risk management investments to sustain profitability accelerates credit risk transmission. The Archegos case is instructive: Credit Suisse utilized non-cleared Total Return Swaps (TRS), whose off-balance-sheet nature enabled risk accumulation beyond regulatory oversight [2]. Similarly, during the European debt crisis, Deutsche Bank exploited Basel II's sovereign debt risk weightings through synthetic Collateralized Debt Obligation (CDO) structures, strategically amplifying leverage within regulatory limits while maintaining compliance [3]. Notably, current research remains constrained by its focus on post-crisis risk contagion, overlooking investment banks' proactive role in designing transmission channels. For example, while Brunnermeier analyzed liquidity spirals, he did not address how banks use financial engineering to construct risk pathways; Acharya et al.'s systemic risk metrics overlooked derivatives' strategic role in transmission. The Archegos and European debt crises share a common pattern: banks deploy complex derivatives and cross-border Special Purpose Vehicle (SPV) structures to build concealed, regulatory-evading risk networks [4].

This paper explores the cases of Credit Suisse (the Archegos event) and Deutsche Bank (the Eurozone debt crisis), which represent two classic paradigms of cross-border risk transmission: speculative risks from hedge fund activities and sovereign debt risks, offering significant insights for the study's thematic focus, and investigates two central questions—Through what structural designs do investment banks actively promote or passively enable cross-border risk transmission? What are the essential differences in transmission strategies between speculative derivative risks and sovereign debt risks—whose answers are vital for understanding the intrinsic logic of risk propagation in financial globalization and for providing theoretical foundations for systemic cross-border risk governance; against the backdrop of recent studies that have increasingly centered on the strategic design mechanisms of risk transmission pathways, however, a unified analytical framework integrating instrument innovation, jurisdictional arbitrage, and network transmission dynamics remains underdeveloped, as existing literature syntheses indicate current research predominantly focuses on linkages between financial markets and product architecture, the role of non-bank financial intermediaries, technology-driven innovation, data sovereignty issues, and network interconnections, with these works notably failing to adequately address the holistic strategies employed by investment banks in proactively engineering risk transmission or sufficiently emphasize the pivotal role of investment banks within these transmission ecosystems, and thus the innovative contribution of this research resides in: 1) Deconstructing the struc-

tured operations through which investment banks exploit non-cleared derivative instruments and offshore jurisdictional arbitrage, using the paradigmatic cases of the Credit Suisse collapse and the Deutsche Bank Eurozone debt crisis to unmask the proactive design mechanisms of risk transmission channels preceding systemic stress; 2) Analyzing the systematic methodologies adopted by investment banks in risk orchestration; and 3) Elucidating the centrality of investment banks in the sequential processes of risk transmission, for by dissecting these mechanisms through case-based analysis, this study aims to bridge the literature gap by highlighting investment banks' strategic agency in shaping cross-border risk propagation networks, rather than treating them as passive conduits of systemic shocks.

2 Case Analysis

Table 1. Comparison table of the characteristics of the two cases

Dimension	Credit Suisse - Archegos Crisis (Speculative Risk)	Deutsche Bank - Eurozone Debt Crisis (Sovereign Debt Risk)
Risk Source	Hedge fund high-leverage speculative trading	Eurozone sovereign debt credit risk
Core Instruments	Non-cleared Total Return Swaps (TRS), over-the-counter (OTC) derivatives	Credit Default Swaps (CDS), Synthetic Collateralized Debt Obligations (CDO)
Arbitrage Strategy	Exploiting offshore jurisdictions (e.g., Cayman Islands) to construct off-balance-sheet transaction structures	Exploiting loopholes in Basel II's sovereign debt risk weightings
Transmission Path	Single-institution risk → Multi-bank correlated default → Market liquidity drain	Sovereign credit risk → Bank capital impairment → Cross-border financing freeze
Risk Amplification Mechanism	Margin calls in leveraged trades triggering chain liquidation	Derivative notional amount far exceeding the scale of underlying assets

In March 2021, U.S. hedge fund Archegos Capital collapsed due to highly leveraged positions in equities such as ViacomCBS, triggering systemic ripples across financial markets and Table 1. As its prime broker, Credit Suisse structured trades via non-cleared Total Return Swaps (TRS)—a framework inherently obscuring material risks. Archegos' fail-ure resulted from overlapping strategic weaknesses and structural risks, rooted in its aggressive investment approach [2].

2.1 The Credit Suisse–Archgos Crisis: Risk Fission in Non-Cleared Derivatives

The fund's core strategy—concentrated positioning with leveraged investments—pursued excess returns, delivering a 35% annualized return in the decade before collapse. This masked critical fragilities: Extreme concentration: Its top five holdings exceeded 70% of assets under management, far above the 32% industry benchmark. This created vulnerability to single-stock declines; for example, heavy bets on Chinese tech exposed it to regulatory shifts or sector shocks like U.S.-China trade tensions. Opaque leverage: Using derivatives, Archgos controlled over \$50 billion in assets with just \$5 billion net worth (10x leverage). Non-cleared TRS and prime brokerage loans enabled this, but unlike exchange-traded derivatives, TRS positions lacked public disclosure, allowing unmonitored accumulation of massive exposures [5].

Broker liquidity dependency: As a non-cleared derivative counterparty, it relied on prime brokers. When Viacom CBS' stock drop in March 2021 triggered margin calls, synchronized forced liquidations by brokers flooded markets, exacerbating price falls and turning idiosyncratic risks systemic.

Flawed risk management: Past success bred complacency, with risk models likely understating tail risks. The 35% return obscured volatility—10x leverage turned 1% portfolio declines into 10% losses, leaving minimal buffer against market disruptions.

Credit Suisse's TRS engagement with Archgos revealed a gap between economic reality and legal structure. Bilateral margin agreements set initial margins at 10%, entrenching 10x leverage and systemic risks. TRS' exemption from Central Counter-Party (CCP) clearing weakened mark-to-market discipline and risk pooling, letting risks fester bilaterally [6].

Credit Suisse routed TRS through a Cayman Islands special purpose vehicle (SPV), using a three-tier off-balance-sheet strategy [7]. Accounting isolation: The SPV's \$16 billion TRS exposure stayed off Credit Suisse's consolidated statements, creating disclosure gaps. Regulatory capital arbitrage: Excluding SPV assets from risk-weighted asset (RWA) calculations inflated its leverage ratio to 25x, hiding solvency risks. Risk capital avoidance: Cayman jurisdiction exempted the SPV from credit risk mitigation capital rules, cutting reserves by \$800 million (23% below Swiss requirements).

This structure created a harmful feedback loop: 10% margins and non-cleared TRS amplified volatility, with market shocks triggering cascading margin calls. The SPV's legal separation masked Credit Suisse's true exposure, leaving \$16 billion in TRS liabilities outside regulatory and internal oversight. This formed the risk accumulation phase of the Credit Suisse-Archgos crisis, enabling subsequent transmission [4].

In the triggering stage, Viacom CBS' 27% single-day drop forced Archgos into margin default, leading to liquidation of its holdings (e.g., Baidu, Discovery). In transmission, banks like Credit Suisse sold related stocks to hedge risks, sparking asset price crashes—Credit Suisse suffered most due to slow liquidation. Amplification saw liquidity depletion create a vicious cycle, leaving Credit Suisse with \$5.5 billion in losses. This eroded investor confidence, paving the way for its eventual forced merger [8].

The case illustrates how off-balance-sheet arbitrage via non-cleared derivatives and regulatory arbitrage drive risk transmission. Credit Suisse exploited offshore jurisdictions for arbitrage but incurred heavy losses due to structural flaws and failed risk transfer when risks materialized. Sample Heading (Third Level). Only two levels of headings should be numbered. Lower level headings remain unnumbered; they are formatted as run-in headings.

2.2 Deutsche Bank-European Debt Crisis: Derivatives Amplification of Sovereign Risk

Prior to the 2010 Greek sovereign debt crisis, Deutsche Bank developed a risk-amplification system using Synthetic CDO and CDS. This mechanism exploited regulatory loopholes and accounting disclosure gaps through a "compliance arbitrage - risk amplification - covert disclosure" logic, proactively designing risk transmission via financial engineering [3].

A key flaw in 2004's Basel II—0% risk weights for Organisation for Economic Co-operation and Development (OECD) sovereign debts to ease capital flows—enabled Deutsche Bank's "risk regularization" [9]. It bundled €5 billion of Greek bonds (near BBB), €3 billion of German AAA corporate bonds, and €2 billion of French bonds into a €10 billion Synthetic CDO. Structured as senior/subordinate tranches, the senior tranche earned an S&P AAA rating, as rating agencies assumed "near-zero default risk for OECD sovereign debt" despite underlying Greek risks, repackaging high-risk assets as "compliant low-risk" ones. This also released capital: direct holding of €10 billion Greek bonds would require €800 million in risk capital (8% ratio), but the AAA senior tranche (20% risk weight) needed only €160 million. The freed €640 million could fund €4 billion in additional risky assets, forming a "low capital occupation - high risk exposure" cycle.

Deutsche Bank's Greek CDS activities went beyond hedging, amplifying risks via the "nominal amount vs. actual exposure disconnect"—a speculative abuse. By 2011, it held €30 billion in nominal Greek CDS, but actual exposure from Greek bonds and CDO was only €5.1 billion (17% of CDS nominal value), leaving 83% as "naked shorts" (betting on Greek default without hedging assets). This turned CDS into a risk amplifier. CDS "nominal inflation" heightened systemic risks: first, €30 billion in CDS trading (28% of Greek bonds) pushed CDS spreads from 100 to 1,500 basis points (2010–2011), lifting Greece's 10-year bond yields above 15%; second, a Greek default would force payouts on the €30 billion nominal amount, with excess liabilities (€12.45 billion at 50% recovery) equaling 5.4 times its 2010 net profit (€2.3 billion), eroding capital.

Deutsche Bank used a Luxembourg SPV ("Rhein Credit Investment Company") to issue CDO and hold CDS, signing a "risk participation agreement" that limited joint liability to SPV losses over 50%. This classified €20 billion in exposure as "contingent liabilities"—under IFRS, disclosed only in notes, not on balance sheets or risk-weighted assets. Thus, it reported a 10.2% 2010 Common Equity Tier 1 ratio, but consolidating the SPV's exposure would lower it to 7.8% (below the 8% threshold). By 2010, this had spread a single sovereign risk globally via derivatives—showing investment banks

as "risk transmission designers". Risks are not naturally spreading but "directionally transmitted" and amplified through financial structures.

3 The Practical Significance of Optimizing the Transmission Pathway and Cross-border Risk Mitigation

When environmental changes occur and external shocks (such as sharp stock price declines or rating downgrades) trigger risk release, investment banks design buffer mechanisms in a systematic manner. In this process, SPVs (Special Purpose Vehicles) and Credit Obligation Documents (COD) – as structural tools and credit carriers commonly used by investment banks – have their design logics that directly influence risk transmission paths [10].

Investment banks transfer aggregated risks to a broader range of market participants through jurisdictional arbitrage and regulatory arbitrage, enabling cross-border risk diffusion and thereby reducing their own risk-bearing capacity. In the case of Credit Suisse, an illusion of risk isolation was created through a Cayman Islands SPV. Legally, Total Return Swap (TRS) transactions were borne by the SPV and excluded from Credit Suisse's consolidated financial statements. This not only allowed evasion of Switzerland's regulations on high leverage but also dispersed risks to other investment banks through over-the-counter transactions. When Archegos defaulted, the risks were no longer merely a bilateral matter between Credit Suisse and Archegos; instead, they continued to spread to the entire stock market through the connections among multiple investment banks.

In the case of Deutsche Bank during the European debt crisis, the bank exploited a loophole in the Basel Accords – the "zero risk weight for OECD sovereign bonds". It converted synthetic COD risk exposures into assets with low capital requirements, bundled low-rated Greek government bonds with high-rated corporate debts, and used structural stratification to conceal the risks of underlying assets. By packaging Greek debts into standardized products, it created a carrier for risk transfer. Mean-while, it sold Greek Credit Default Swaps (CDS) through its branches in New York and London, infiltrating risks into European and American financial markets and forming a global risk network.

The commonality between these two mechanisms lies in their reliance on investment banks' status as core nodes in the financial network. Credit Suisse, as a prime broker, connects hedge funds and the stock market; Deutsche Bank, as a systemically important bank, links sovereign bonds and global capital. Their risk release can trigger a domino effect through network connections.

The lessons from the Archegos incident and Deutsche Bank's experience in the European debt crisis collectively indicate that tools themselves are neither inherently good nor bad – the key lies in their design logic. If SPVs are used solely to "evade regulation" (e.g., through disorderly asset packaging), they can become "black boxes" for hiding risks; if CODs are used merely for "speculative trading" (e.g., simply betting on sovereign bond price fluctuations), they can become "levers" for amplifying risks. However, when embedded with buffer mechanisms, SPVs become "barriers for risk

stratification" and CODs become "yardsticks for risk early warning" – which precisely align with investment banks' need to "control risk transmission".

4 Conclusion

This study takes the 2011 Credit Suisse-Archeegos crisis and the role of Deutsche Bank in the European debt crisis (2010-2012) as case studies. Through comparative analysis, it explores the risk transmission mechanisms in which investment banks guide cross-border capital flows. The key findings are as follows:

First, investment banks are not merely passive recipients of risks spreading in international markets; instead, they can act as active designers of risk transmission networks. By leveraging structured instruments such as non-cleared derivatives, synthetic financial tools; and offshore special purpose vehicles, they proactively construct risk transmission pathways. They exploit regulatory arbitrage to accumulate and amplify risks while evading supervision, forming a systemic *modus operandi*.

Second, although the transmission mechanisms of speculative derivative risks and sovereign debt risks differ, they share a common logic in terms of systemicity. For instance, the Credit Suisse-Archeegos case originated from the speculative risks of hedge funds' high-leverage trading. Through non-cleared over-the-counter derivatives and cascading liquidations triggered by margin calls, risks evolved from a single institutional risk into a market liquidity shock. The Deutsche Bank case, on the other hand, shows that sovereign debt risks were amplified through synthetic instruments and regulatory arbitrage, spreading from regional sovereign debt risks to global equity and financial markets. Both cases confirm that the structural design of financial instruments and arbitrage strategies can effectively transmit risks to external parties, reducing the impact on the banks themselves.

Finally, the "instrument innovation-jurisdictional arbitrage-network transmission" framework is critical for understanding the dynamics of cross-border risks. By strategically using off-balance-sheet structures, investment banks create information asymmetry and regulatory blind spots, allowing risks to accumulate under normal conditions and spread rapidly during shocks.

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