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The Collapse of Archegos Capital Management: How Regulatory Gaps in Family Offices Pose Systemic Risk

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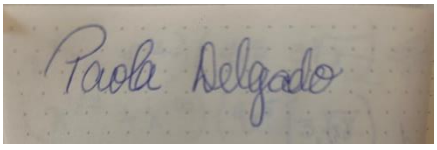

Abstract

This thesis will investigate the collapse of Archegos Capital Management (ACM) in 2001, while emphasizing the systemic risks caused by the regulatory gaps for family offices. The study examines how ACM's use of financial derivatives such as contracts for difference (CFDs) and total return swaps allowed it to amass highly leveraged positions without owing the underlying assets, resulting in significant market volatility when ACM defaulted. This case emphasizes pm the extensive vulnerability in the global financial system. The literature review focuses on discussing the systemic risk's complexity, interconnectedness, and the challenges posed by globalization. It employs a detailed case study approach, zeroing on ACM's collapse to analyze family office's regulatory environment and impact on market stability. The results reaffirm the need for increased transparency, standardized reporting and a robust regulatory environment for family offices to successfully manage potential systemic risks. The policy recommendations involve tough stress testing, regular audits and international regulatory collaboration. It concludes disclosing how improved regulatory frameworks are the pillars for global financial market stability.

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1. Introduction

The title of this paper, The Collapse of Archegos Capital Management: How Regulatory Gaps in Family Offices Pose Systemic Risk, captures the central theme of the research. The collapse of Archegos Capital Management (ACM) in 2021 provided a harsh reminder of the ongoing vulnerabilities within the global financial market, which was reminiscent of the 2008 financial crisis. This topic is critically relevant as it highlights the weak nature of interconnected financial systems, particularly when they involve insufficiently regulated entities such as family investment firms. The paper aims to contribute valuable insights to the academic and public discourse on financial systemic risk by performing a case study of the ACM collapse.

The key terms in this study include "systemic risk," "contracts for difference (CFDs)," "total return swaps," and "family offices." Systemic risk refers to the potential for a disturbance in a single entity or market to cause widespread instability in the financial system. CFDs and total return swaps are financial derivatives used by investors to speculate on asset price movements without owning the underlying assets. Family offices are private wealth management firms serving high-net-worth individuals or families, typically operating with less regulatory oversight compared to other financial institutions.

This research addresses the critical issue of systemic risk in the context of the ACM collapse. When ACM defaulted, it was heavily engaged with multiple prime brokers such as Credit Suisse, Nomura, and Goldman Sachs, using CFDs and total return swaps to hold significant positions in companies like ViacomCBS, Baidu, and Tencent Music. ACM's substantial financial commitments and influence over these companies' stock prices meant that its failure to meet margin calls led to sharp declines in these stocks, triggering broader market volatility. The rapid liquidation of positions by brokers exacerbated the market impact, affecting other investors and financial institutions. This case highlights the significant risks posed by insufficiently regulated family investment firms using funds that are borrowed extensively.

This study focuses on the specific events surrounding the collapse of ACM and its implications for systemic risk within the financial market. It examines the role of family offices, their regulatory environment, and their impact on market stability. The research will not cover systemic risks associated with other types of financial institutions, such as large banks or hedge funds, which have been extensively studied. By concentrating on family offices, this study aims to fill a gap in the current research on financial systemic risk.

The paper is organized into five main sections. The first section introduces systemic risk, their concept and challenges. The second section reviews the general regulations surrounding the non-bank financial intermediary sector, specifically family assets. The third section focuses on the methodology, establishing the conduct for the deep analysis of the

case study. The fourth section presents the research findings and discusses their implications for systemic risk management. The final section concludes the study, offering recommendations for improving the regulatory oversight of family offices and mitigating systemic risk. This structured approach ensures a logical flow and coherent presentation of the research findings

2.Concepts of Systemic Risk within the Financial Sector

2.1 Characteristics

Systemic Risk is considered to be the possibility of an event where an institution triggers severe instability or collapse throughout an entire industry or economy. It can also be used to describe small, specific problems, such as the security flaws for a bank account. (Chen, 2023) The term was proposed by the OECD because the interconnected, and globally impactful risks could not be handled in conventional terms. “Systemic risk refers to the risk or probability of breakdowns in an entire system, as opposed to breakdowns in individual parts or components, and is evidenced by co-movements (correlation) among most or all parts” (Kaufman & Scott, 2003, p. 372). There are different concepts of systemic risk that are relevant to discuss for this paper, such as interconnectedness, complexity, uncertainty, ambiguity and the ripple-effects beyond the source of risk. According to Renn et al (2020) complexity entails the difficulty of identifying and quantifying casual links between various possible elements and particular unfavorable consequences, and the cause-effect relationship is not obvious nor directly observable. This also develops uncertainty since the cause-effect relationship lacks reliability and hinders functional interactions, meanwhile ambiguity concerns to the variability of legitimate interpretations based on the same observations and data assessments, specifically what the data means for public health and ecosystem conservation. A good example of the severe ripple-effects beyond the source of risk is the financial crisis of 2008-2009. After this crisis, there has been a lot of research conducted on financial systemic risk. Financial systemic risk intertwines ideas from economics, social policy, finance, physics, computer science, mathematics, probability and statistics plus other sciences. (Hurd, 2019) Another way to describe this phenomenon is by identifying the risk of the default or financial stress of one or more institutions triggering additional defaults of stresses on other organizations, leading to widespread system failures. This is because the organizations that present this type of risk hold a significant influence on the financial system. The influence arises from the institution’s integration within the overall economy. Therefore, because of the interconnectedness, a crisis in one institution can quickly spread.

2.2 Challenges

Today's main systems are all elaborately intertwined across various sectors and geopolitical boundaries. As mentioned before, globalization has been a topic of discussion for a long time. It has had substantial economic implications, such as economic growth and development, and an exchange of technology that has accelerated innovation, yet it presents various issues. This phenomenon can lead to manipulation by international institutions of domestic policies, undermining national sovereignty. Researchers have often highlighted other consequences of how it can lead to significant issues such as growing economic inequalities, reliance on foreign investment, environmental degradation, trade conflicts between major global economies, and volatility in currency exchange rates (Kyove et al., 2021). Many studies on this phenomenon are motivated by the need to comprehend its effects. This understanding is necessary to increase corporate transparency, develop effective business strategies, improve market competition, and strengthen stakeholder awareness. According to Bruno & Shin (2014), globalization's influence has affected the financial system the most, shifting the international scope of business activities from market segmentation and diversification to a focus on resource and activity specialization. When examining how globalization impacts businesses, it is important to consider the company's ability to innovate and associate the risks. This phenomenon can induce not only opportunities but challenges as well. One of these challenges is the exposure to multiple types of risk, such as market volatility, competitive pressures, and the hardships of operating across different regulatory environments.

3.The Regulatory Framework for Financial Risk Management

3.1 General Regulatory Framework

The regulation of financial systemic risk has been a challenging yet invigorating area of focus for researchers and policymakers. Systemic risk refers to the risk that materializes when the failure of one or more financial institutions or markets triggers a broader economic collapse. This section discusses significant insights regarding the regulation of financial systemic risk, including macroprudential and micro-prudential regulations, with a focus on the regulation of non-bank financial entities, specifically family offices. The central aspects of these regulations include capital buffers, leverage ratios, stress testing plus the functions of supervisory bodies such as the Financial Stability Board (FSB) and the International Monetary Fund (IMF).

As reported by Gai and Kapadia (2019) macroprudential regulations focus on the stability of the financial system in general. Its purpose is to mitigate systemic risk and limit widespread disruptions. As mentioned earlier, one of the essential aspects of macroprudential regulations is the use of capital buffers. These are additional capital obligations placed on banks to aid them absorb losses during financial hardships. The Countercyclical Capital Buffer (CCyB) is an example of this, it fluctuates in response to the credit cycle with the purpose of counteracting pro-cyclicality. The Capital Conversation Buffer (CCB) is another example of capital buffers that demands banks to reserve additional capital to guarantee overall stability.

Continuing Kai and Kapadia's (2019) work, leverage ratios are also worth discussing when explaining macroprudential regulations. In contrast to risk-weighted capital requirements, leverage ratios are non-risk-based measures which restrain the amount of leverage a bank can assume. An example of this is the Tier 1 leverage ratio, which happens to be very common, it represents the ratio of a bank's key capital to its total assets, again, without quantifying risk. By using this, the financial institutions guarantee to not become excessively indebted, while assuring financial stability. Stress testing is another important mechanism in these types of regulations. By simulating adverse economic scenarios, stress

testing aids the evaluation of how banks manage possible financial shocks. These types of tests are organized by regulatory bodies such as the Federal Reserve in the United States and the European Central Bank (ECB). They help identify the vulnerabilities within the banking system, which in turn guide regulatory actions and policy decisions.

In the core of macroprudential regulations lie regulatory bodies. The FSB works to organize the performance of national financial authorities and international standard-setting institutions. They also establish and advocate for the implementation of adequate regulatory policies. While the IMF's role is to overwatch the global economy, it also provides policy advice to its member countries. The IMF focuses on conducting financial stability assessments and extending financial assistance to the countries that face problems in regard to balance of payments, with the purpose of stabilizing the international financial system.

On the other hand, micro-prudential regulation's focal point is the integrity and security of individual financial institutions. The purpose of these regulations is to ensure that banks conduct their business safely, minimizing the risk of failure that can have broader implications for the financial system. Capital adequacy requirements are essential for micro-prudential regulations because banks must hold a minimum level of capital relative to their risk-weighted assets to absorb losses. The Basel III framework introduced more stringent requirements, including the Common Equity Tier 1 (CET1) ratio, which measures a bank's core equity capital against its risk-weighted assets. This aims to ensure that banks have a solid capital base to cover potential losses.

Liquidity guidelines are also part of micro-prudential regulations. The standards such as the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) allow banks to have sufficient high-quality liquid assets in order to survive short-term liquidity disruptions and maintain stable funding over a longer time period. For example, the LCR mandates that banks retain enough liquid assets with the purpose of covering their net cash outflows for a 30-day stress period, while the NSFR ensures that banks maintain a stable funding profile over a one-year horizon.

Likewise, risk management criteria are also a core aspect of micro-prudential regulation. Banks are expected to have robust risk management frameworks in place with the purpose of covering various types of financial risks, such as, but not limited to credit risk, market risk. and operational risk. These criteria include having effective internal controls, governance structures, and comprehensive risk assessment procedures. Supervisory authorities are needed in order to perform regular reviews of banks' risk management practices and their financial health. These practices include on-site examinations, off-site monitoring, and the evaluation of banks' internal models and stress testing results. These supervisory activities help ensure that banks adhere to regulatory standards and maintain sound risk management practices. As has been already discussed, both macroprudential and micro-prudential regulations are very important to accomplish financial stability. Macroprudential policies are utilized to address financial systemic risks and the interconnectedness within this system, while micro-prudential regulations look out for the durability of individual institutions. Effective coordination between these two regulatory approaches is highly advised to achieve a comprehensive risk management framework.

3.2 Regulatory Frameworks for Family Assets

Another challenge that regulatory organization and policymakers face when it comes to financial institutions, is how to successfully construct a framework for non-bank financial intermediation. Family offices engage in sophisticated financial activities which happen to be similar to those of hedge funds and private equity firms, yet this non-bank financial intermediary (NBFI) operates with significantly less regulatory insight. This section will focus specifically on the regulation of family offices, the current state of their regulation landscape, the gaps and challenges, and recommendations for developing a robust regulatory framework such as increased transparency and scrutiny, plus standardized reporting requirements.

Historically, family offices have conducted their business in a considerable unregulated space. They are not required to divulge detailed documents of their operations, investments or financial positions, in contrast to publicly traded companies or registered investment advisors, which allows them to manage a considerate amount of assets with limited

oversight. The private stance and clear lack of transparency are found at fault in respect to the insufficient data surrounding their financial activities, which in turn complicates regulatory efforts. The FSB and other monitoring bodies have widely recognized the need to watch over and manage non-bank entities, including family offices. The March 2020 financial chaos accentuated the vulnerabilities in the NBFI area, in consequence, the FSB prepared an extensive business blueprint, with the purpose of increasing the resilience of NBFIs. However, specific guidelines for family offices are yet to exist. Regulations such as the Family Office Rule under the U.S. Investment Advisors Act, exempt these institutions from registering as investment advisers with the Securities and Exchange Commission (SEC), provided they manage the wealth of a single family. (FSB, 2023)

There are already various identified gaps and challenges that complicate the regulatory oversight of family offices. The first one sits at the core of this argument, the lack of transparency hinders effective oversight, complicating the monitoring bodies' job of assessing the systemic risk posed by these entities. The second issue is how easily these offices exploit the regulatory arbitrage by structuring their business framework in a manner that allows them to operate outside stringent policies. This enables them to perform high-risk financial activities with little or no scrutiny. Thirdly, family offices employ complex legal and financial agreements in order to manage assets such as trusts, or offshore entities. These structures conceal the veracity of their financial operations and risk exposure. Lastly, there is a substantial lack of data on family offices, therefore, there is no comprehensive understanding of their operations or and potential risks. There is not an efficient way to receive standardized reports.

The policy recommendations that will be discussed are aimed to remedy these challenges and be able to successfully construct the regulatory framework for family offices. It suggests new formalities directed at non-bank market participants with the purpose of ensuring enough money is available to quickly respond to margin calls.

1. "Market participants should incorporate the assessment of liquidity risks arising from margin and collateral calls in their liquidity risk management and governance frameworks." (FSB, 2024, p. 12) By incorporating these types of liquidity risks into the

overall liquidity risk management frameworks ensures that processes and systems are in place to manage them promptly. The frameworks should clearly assign responsibilities and tasks that guarantee timely and successful decision making. These risk management systems and operations should be well documented in order to conduct reports on its behavior. Hence allowing monitoring systems to better assess the situation. This also suggests that the risk management system of each entity must be proportionate to its international footprint or activity in affected markets, this way it recognizes the degree of their interconnection with other financial entities along with the counterparts' risk management practices.

2. "Market participants should regularly review and update their liquidity risk framework to ensure that liquidity risks arising from margin and collateral calls are robustly managed and mitigated, particularly under extreme but plausible stress scenarios." (FSB,2024, p. 14) This touches upon the need for regular reviews of risk frameworks with the purpose of maintaining their effectiveness while dealing with risk exposures. Due to the rapidly changing information across financial assets and limited market position transparency, the stakeholders should continuously seek information to improve their mitigation protocols. There should also be communications plans in place to facilitate updating the competent authorities.
3. "Robust stress testing should analyse a range of extreme but plausible liquidity stresses caused by changes in margin and collateral calls, as well as market participants' overall liquidity position." (FSB,2024, p. 16) This entails the preparedness these institutions have against unexpected market conditions. It proposes to consider the separate estimates of different types of derivatives, such as centrally cleared derivatives, and bilateral derivatives. When performing these types of stress testing, it is expected to account for idiosyncratic and system-wide stress sources, both from concentrated and leveraged positions.
4. "Market participants should have resilient and effective operational processes and collateral management practices." (FSB,2024, p. 17) To achieve this in an efficient manner, it is required from the market participants to have their cash and management system under constant review in order to have an appropriate understanding of the size,

nature and complexity of the family offices' transactions. This will ensure the verity and lawfulness of the various operations. Test trades should also be incorporated.

5. "Market participants should have active, transparent, and regular interactions with their counterparties and third-party service providers in collateralised transactions to ensure adequate operational resilience with respect to spikes in margin and collateral calls under stressed conditions." (FSB,2024, p. 19) This proposes that all interactions include (at least annually) evaluations. It discusses how these evaluations must include all third-party service providers, and how their risk management activities may reflect on other counterparties during stress events.

It is evident that for effective regulation of family offices, it is required collaboration and information sharing between monitoring bodies at all levels. An essential component of the regulatory mechanisms should be a communications framework, used to share risk exposures competently. It would also cover the issues raised by the cross-border operations that family offices tend to conduct. By requiring family offices to register with regulatory authorities and disclose information about their operations, regulators can gain better insights into their activities. This would enable a more accurate assessment of the risks these entities pose and allow family offices to be held by similar and stringent standards to other financial institutions. Standardized reporting requirements would help these regulations develop triumphantly because by having regular reports detailing financial positions, investment strategies, and risk management practices, regulators would have the data required to monitor family offices adequately. Standardization ensures consistency and comparability, making it easier to identify trends and potential risks.

The regulation of family offices presents unique challenges due to their private nature. Addressing these challenges requires a comprehensive approach that includes increasing transparency, introducing standardized reporting requirements, strengthening regulatory scrutiny, and fostering collaboration between regulatory bodies. By adopting these recommendations, regulators can monitor efficaciously and manage the risks posed by family offices, ensuring the stability and resilience of the broader financial system. Family offices play a significant role in managing substantial wealth and can influence financial

markets through their investment activities. As the financial landscape evolves, it is essential to adapt regulatory frameworks to address the emerging risks associated with family offices and other non-bank financial entities.

4.Methodology

4.1 Literature Review

In response to the already mentioned global financial crisis of 2008, the Financial Stability Board was created, with the purpose of overseeing and giving recommendations on how to maintain the health of the global financial system. It partners with global institutions like the International Monetary Fund and The World Bank to strengthen financial stability by monitoring its landscape, engaging to identify systemic weaknesses and propose ways to mitigate these risks. It counts on the involvement of 24 national financial authorities and international standard-setting institutions. (Jark, 2024) Once again, it is of the utmost importance that there is international cooperation due to the highly interconnected financial system. A key role of the FSB is to formulate regulatory and financial policies by engaging with stakeholders to prevent future crises. It also includes a non-bank financial intermediation sector, aiming to assure the resilience of the global financial system.

According to a report by the Financial Stability Board (2023), family offices are defined as institutions created by wealthy individuals within the same family, some cater to multiple families with the purpose of offering a range of services, from investment management to estate planning. The Deloitte Family Office Handbook (2021) provided a detailed guide to the formation and management of family offices, highlighting key operational and strategic considerations. Family offices, happen to be unique entities dedicated to overseeing the financial affairs of high net worth families, offer a formal structure for wealth management, risk mitigation, and the promotion of family legacy and values. These offices typically arise from significant business events, such as separations, liquidity events, or fund redemptions, driven by the need for greater control over investments and structured risk management.

Effective governance in family offices is crucial and involves balanced leadership, clear communication, board oversight, and succession planning. Operating costs for family offices generally range around 1% of assets under management, with various fee structures to cover these expenses. Attracting and retaining skilled personnel, particularly in key roles like CEO, CFO, is vital, with compensation and benefits constituting major portions of

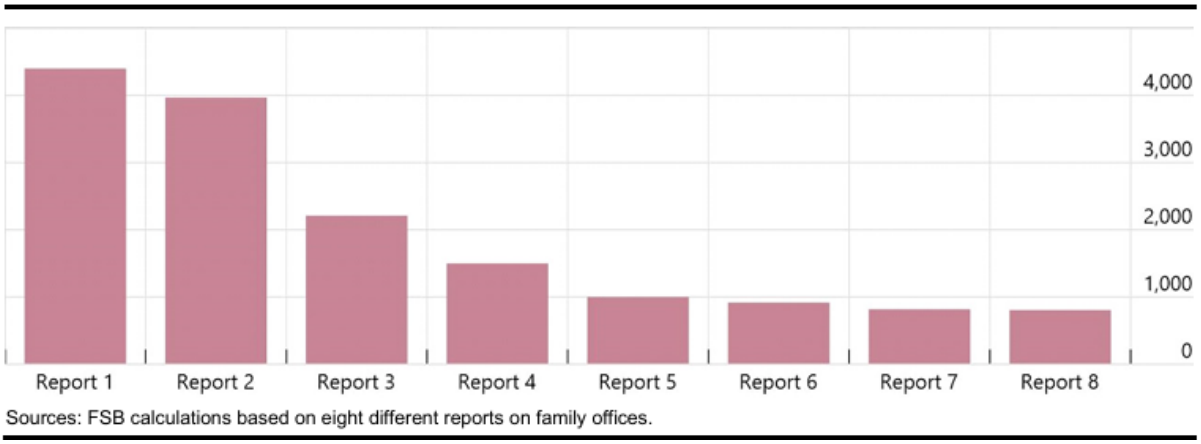
their budget. Risk management is a pillar of family office operations, addressing diverse risks including cyber threats, fraud, and operational challenges. A robust risk management framework with effective internal controls is essential. Additionally, the legal and tax structuring of family offices is critical, involving decisions on legal structure, ownership, control, and jurisdiction to ensure compliance with laws and regulations.

Family offices also play a significant role in investment management, developing investment objectives, managing liquidity, overseeing due diligence, and reporting performance. Philanthropy is another core activity, unifying family members around a common purpose and creating meaningful social and environmental impacts. As families become more globally mobile, family offices must navigate the complexities of global communication, tax implications, and regulatory compliance.

Emerging trends such as increased focus on philanthropy, technological advancements, direct private equity investments, and global mobility are reshaping family office operations, necessitating new skills and resources. The Deloitte Family Office Handbook underscores the importance of strategic planning, effective governance, risk management, and technology in ensuring the success and sustainability of family offices, adapting to the evolving needs of wealthy families to preserve and grow their wealth and legacy. Single-family offices typically manage assets over $150 million. Forbes (2021) mentions how these discreet and private institutions have taken care of the wealth of the world's richest for well over a century, yet they are subject to light regulations, if any. The reason is that family offices are considered to be extensions of private individuals managing their own assets rather than those of external parties. Therefore, these institutions are not required to report their size and other information regularly. This makes it difficult to monitor their activity and the scale of their businesses. Even the data utilized by the FSB in terms of this particular non-bank financial entity is unofficial, unaudited and non-validated, as it is seen on Graph 1, the estimated average of assets under management varies depending on the data provider. It is important to consider how restricted access to data, the issues in compiling existing data and the challenges assessing reliable leverage indicators might lead to an underestimation of overall leverage in the non-bank financial intermediary sector,

specifically insufficiency when it comes to identifying large and concentrated positions. This lack of consistency highlights the data gaps and unclarities of the industry. The growing concentration of wealth is seen as the major reason as to why the family office sector has broadened. The more the family offices grow, the riskier the investments they make. As stated by the FSB (2023) in their Financial Stability Implications of Leverage in Non-Bank Financial Intermediation, North America is the most sought-after location for family offices, making up an estimated 30-60% of active offices around the world, followed by Europe with an estimated 10-20%, the rest is assumed to be in the Asia-Pacific region, Latin America and the Middle East. One of their sources stipulates that the total assets under management of this sector are around $6 trillion, it seems that the industry is highly concentrated, with assessments indicating that the top ten largest family offices handle approximately $885 billion in assets.

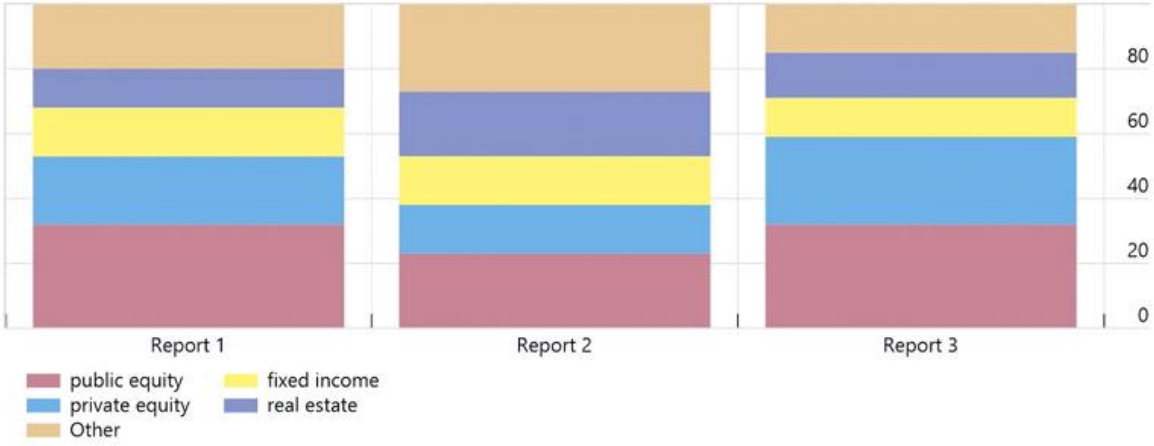
Average AUM by family office, 2019-2022



Graph 1

As illustrated by Graph 2, family offices invest consistently in public and private equity, and in hedge funds, which means that there should be an asset count overlap between assets under managangement and family offices, followed by fixed income and real estate. Public equities appear to be the largest investment across all the reports.

Top 4 Consistent Investments by Family Offices



Sources: FSB calculations based on UBS (2022), *Global Family Office Report*, Citi Private Bank (2022), *Family Office Survey Report*, Campden Wealth Limited (2022), *The North America Family Office Report*, Royal Bank of Canada.

Graph 2

Calls for increased regulation of family offices have grown, especially considering recent financial scandals, such as the one that will be discussed later, the Archegos Capital Management failure. Experts argue that just because there is a gap of information or lack of transparency regarding the transactions conducted by family offices means that those transactions happen to be small or not conducted with any important entities. The FSB recognizes that the weakness in risk management and governance is an important cause as to the ineffectiveness of liquidity readiness by non-bank market participants.

The regulation of financial systems is vital to the stability and integrity of the global financial system. According to Ellis, Sharma, and Brzeszczyński (2022) after the 2008 Financial Crisis and the COVID 19 pandemic, there has been a demand to enhance the regulatory frameworks to oversee systemic risks. Internationally, there are already various frameworks which purpose is to oversee financial institutions. For example, there is the Basel III Accord, which was developed by the Basel Committee on Banking Supervision (BCBS), it is a broad series of reform measures designed to promote regulation, supervision and risk management within the banking sector. It incorporates methods to bolster bank capital requirements, offer leverage ratios and enforce liquidity requirements such as the

liquidity coverage ratio and the net stable funding ratio. Basel III has fortified the resilience of individual banks by securing sufficient capital to absorb shocks, yet it is not applied evenly across different regions, therefore leading to inconsistencies in global baking practices.

In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act was authorized also in response to the financial crisis of 2008 with the aim to minimize the risks in the financial system. One of the core components is the Volcker Rule, which limits banks from participating in proprietary trading, followed by the creation of the Financial Stability Oversight Council (FSOC) to specifically manage systemic risk. Dodd-Frank greatly amended the regulatory environment in the US by heightening transparency and accountability, even though its complex and broad stipulations have proven to lead to expensive compliance costs for financial entities. On the other hand, in the European Union, the Capital Requirements Regulation aligns with Basel III yet it solely focuses on bank capital adequacy, stress testing, and liquidity. Meanwhile the Single Supervisory Mechanism consolidates the oversight of the Eurozone banks under the European Central Bank, while the Markers in Financial Instruments Directive II strengthens the transparency and investor protection in financial markets. These EU frameworks have led to a more stable market while simultaneously bolstering investor confidence. However, these structures have received a lot of criticism due to their complexity and the regulatory strain placed on financial entities.

In continuation of the insights from Ellis, Sharma, and Brzeszczyński (2022) the International Financial Reporting Standards 9, was designed by the International Accounting Standards Board with the purpose of addressing the classification, measurement, impairment and hedge accounting of financial instruments. The International Financial Reporting Standards 9 has refined the accuracy and transparency of financial reporting, however there are still many challenges and gaps in the accounting practices. One of them being regulatory arbitrage, as financial institutions exploit the variation of regulations across jurisdictions in order to lighten the regulatory burdens, undermining the effectiveness of the framework already in place. The shadow banking sector accommodates

non-bank financial intermediaries such as hedge funds, private equity firms, and family offices, which often conduct business outside traditional structures, leading to systemic risk due to their size and interconnectedness with the banking sector.

Global collaboration continues to be challenged, as discrepancies between implementation and enforcement of regulations drive regulatory fragmentation, weakening the overall stability of the international financial system. To address this issue effectively it is impetuous to implement continuous cooperation among international regulatory bodies, reinforced supervision, and adaptive regulatory approaches in order to remain up to date with the evolving financial landscape. As has been mentioned before, family offices have grown significantly in number and influence over recent years. Despite their increasing prominence, these entities engage with limited regulatory oversight compared to other financial institutions. They engage in complex investment strategies, including private equity, hedge funds, and real estate, often involving significant amounts of capital. In many jurisdictions, family offices are not classified as financial institutions, therefore exempt from many regulatory requirements that apply to other asset managers. For example, in the U.S., the Dodd-Frank Act exempts family offices from registering with the Securities and Exchange Commission as investment advisers.

Large family offices pose systemic risks due to their significant market positions and leverage, with failures having widespread repercussions for financial markets. Regulatory arbitrage is another concern when it comes to family offices, due to the institution structuring their operations to purposely avoid restrictive regulatory requirements, which leads to competitive disadvantages for regulated entities and the undermining of the market integrity. Furthermore, investor protection is often limited because this NBFI typically serves a small number of wealthy clients, reducing the regulatory focus on safeguarding their interests. The lack of regulatory scrutiny can result in inadequate risk management and governance practices. Moreover, family offices are not required to report their activities or holdings in the same manner as other financial institutions, hindering regulators' ability to monitor their impact on financial markets.

4.2 Case Study: Archegos Capital Management

In this case study, there is an in-depth analysis that aims to examine the factors and events leading to the collapse of Archegos Capital Management. It involves an extensive inspection of various data sources such as financial reports, news articles, and expert analysis. This method intends to reach results that aid in the creation of efficient policy and regulations. Another purpose is to highlight the vulnerabilities that the nonbank financial sector faces in order to bolster risk management practices.

In 2001, Sung Kook "Bill" Hwang launched a hedge fund, Tiger Asia Management, thanks to seed money from billionaire Julian Rorbertson. Eleven years later, in 2012, due to regulatory issues in Hong Kong and the United States, Hwang's hedge fund had to shut down. This also led Hwang pleading guilty to wire fraud relating to illegal trading of Chinese bank stocks and having to pay $44 million to the U.S authorities to settle the charges of insider trading. By early 2013, he had restructured Tiger Asia Management into a family office named Archegos Capital Management. During the 2019 COVID pandemic, Hwang started to gather substantial positions in various securities such as media company ViacomCBS by trading derivatives with Wall Street banks. These types of contracts are facilitated by major banks, enabling the buyer to collect the returns and absorb the losses in exchange for a fee. In other words, when the price of a security increases, the seller must pay the buyer the difference. Also known as contracts-for-difference (CFDs). This strategy allows for the trade to amass significant leverage positions in these stocks without owning the underlying share. The use of derivatives provides the liberty of not having to disclose their holdings publicly, therefore hiding the entity's market activity.

According to the regulations by the U.S. Securities and Exchange Commission, investors that own more than 5% of a publicly listed company's equity are required to disclose their holdings. However, by utilizing CFDs and spreading its trades across multiple prime brokers. ACM managed to go unnoticed by the SEC using this strategy even though it had exposures exceeding 10% in multiple companies. Thus, making it difficult for regulators and other market participants to monitor ACM's real market risks. Archego's conducted business by holding long-short positions, with grand investments in media companies such

as Discovery, Farfetch, ViacomCBS, as well as U.S. listed Chinese technology stocks involving Baidu, GSX Techedu, iQIYI and Tencent Music. On March 24, 2021 ViacomCBS announced a stock sale which causes their share price to plummet. Additionally, the SEC launched a law that threatened to delist the foreign firms that fail to comply with the U.S. auditing standards, which resulted in a substantial decline in U.S-listed Chinese stocks. This in turn, caused Archego's financial strategy to unravel.

The situation obligated ACM to face margin calls from its prime brokers, which included major banks such as Credit Suisse, Nomura Holdings, Deutsche Bank, Goldman Sachs, Mitsubishi UFJ, Morgan Stanley, UBS and Wells Fargo. The margin calls were made to ensure additional collateral as a means to cover potential losses. Nevertheless, ACM lacked the liquidity required to meet these calls, which produced a cascade of forced sales by the banks to cover their exposures. In an attempt to mitigate their own risks, the banks began to dissolve the stocks tied to ACM's swaps through block trades. Block trades happen when large quantities of securities are sold off-market to avoid drastic price drops. On March 26, 2021 Goldman Sachs sold $6.6 billion worth of shares in Baidu, Tencent Music, and Vishop Holdings before the U.S. market opened. This action was followed by the sale of $3.9 billion worth of shares in ViacomCBS, Discovery, Farfetch, iQIYI and GSX Techedu. Even though most banks were able to avoid catastrophic losses by exiting their positions quickly, Credit Suisse and Nomura acted slower, therefore suffered significant financial loss. The estimated overall losses for the banks in business with Archegos were between $6-10 billion. Nomura reported to have lost an approximate $2 billion while Credit Suisse disclosed to have lost around $4.7 billion. In the immediate aftermath, Nomura and Credit Suisse's stock price collectively lost around $9 billion in value.

The use of the case study on the collapse of Archegos Capital Management demonstrates how systemic risks are associated with inadequate regulation of family offices. By examining the details and consequences of the ACM collapse, it is possible to discuss the vulnerabilities within financial systems and the critical need for regulatory oversight. The collapse of ACM in March 2021 serves as a strong reminder of the potential dangers posed by family offices operating with high leverage while using complex financial instruments.

The first document to be discussed is The Failure of Archegos Capital Management: Estimating Potential Spillovers to ASEAN+3 Financial Systems, written by AMRO. It focuses on the involvement of globally significant banks with ACM, specifically Nomura and Credit Suisse. It also handles the estimation of the systemic risk posed by ACM collapse using the SuNWEI model. The SuNWEI model functions by assessing financial interconnectedness and the expected additional costs from further shocks to the banks.

One of the issues with the interconnectedness of the global financial system is that the distress experienced by these banks have the potential to cause ripple effects, resulting in the destabilization of other financial institutions. The ACM failure case exposed various banks to exponential losses, specifically Nomura, which happened to be Japan's eighth largest bank with estimated assets of $405 billion, and Credit Suisse, which was part of the 30 global systematically important bank (G-SIBs) (FSB 2020) with a total of $910 billion in assets. As it is shown in the Figure 1, Archegos was part of a highly interconnected and concentrated network. The magnitude of the entity's involvement with major banks is the main reason as to why the interconnectedness is a problem when discussing financial crisis. Figure 1 demonstrates how the complexity and potential for systemic risk have increased within the financial markets for the past two decades, on an international and a regional level (ASEAB+3).

Financial Integration

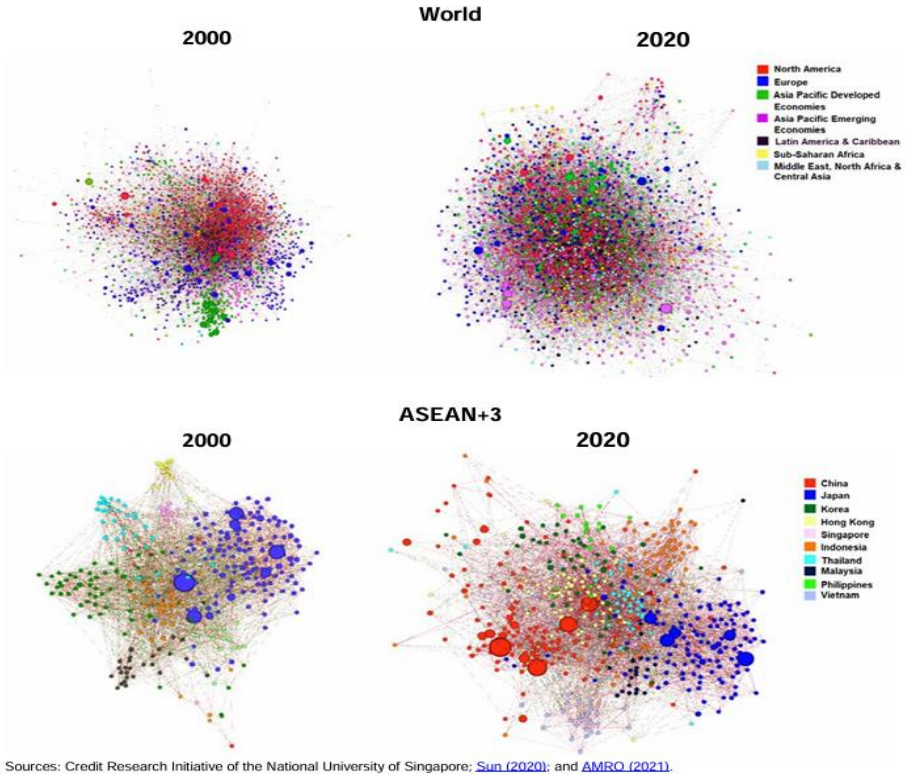
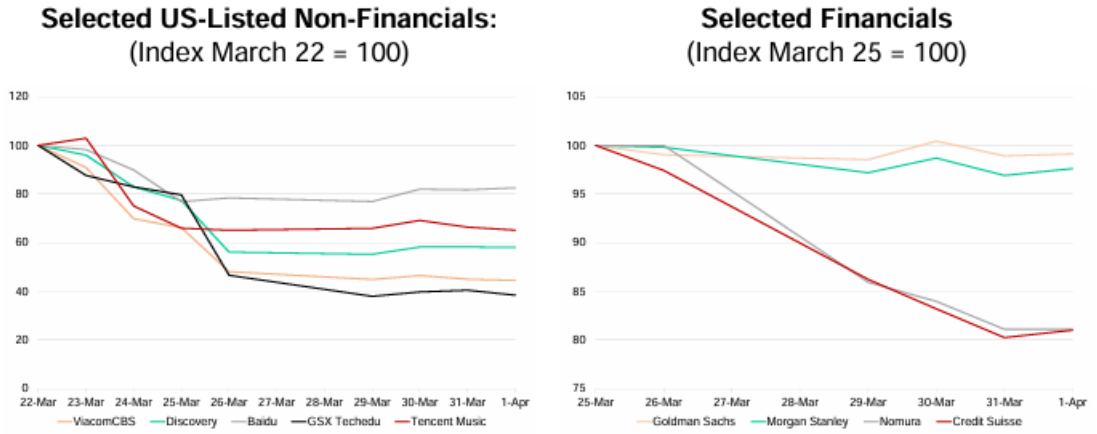


Figure 1

This case, even though it has been denominated as not an appropriate example to discuss the risk posed by NBFIs (FSB, 2024) due to the reasons as to why ACM defaulted (deliberate fraudulent behavior). It does serve to identify how issues with liquidity and governance for margin and collateral calls might be causes of systemic risk. As shown in Figure 2, the sharp decline in stock prices for the companies involved with ACM emphasizes how the forced liquidation had an immediate impact on the financial market. Having a good risk management framework is required to contain possible spillovers.

Impact on Stock Prices from ACM Default

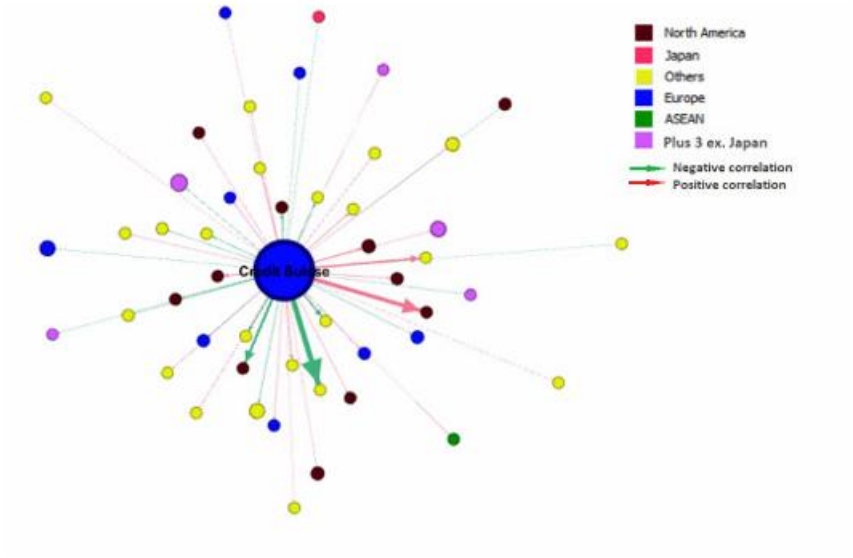


Sources: New York Stock Exchange; and AMRO staff calculations.

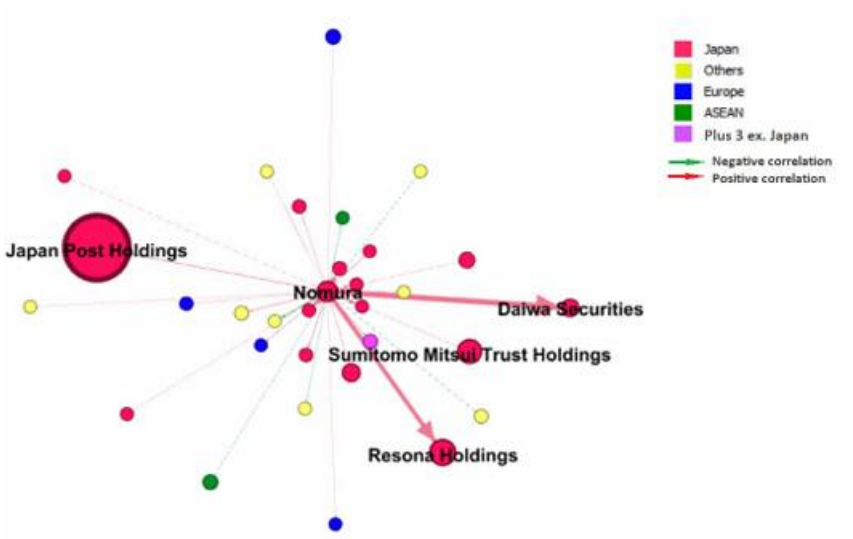
Figure 2

Meanwhile, Figure 3 demonstrates the first-order interconnectedness of financial institutions directly associated with ACM. Each node represents a financial entity and the edges or connections between the nodes symbolize the economic relationship along with the exposures. The size of the nodes depends on the individual institutions' liabilities, while the colors are used to identify to which region it belongs to. This figure is used to highlight the immediate impact the crisis had on their direct counterparties. The substantial losses suffered by Credit Suisse and Nomura are evidence on how this situation influenced their financial health and stability. The interconnected natures of these type of relationships lead to a fast-spread contagion which can affect the stability of institutions that are not directly associated.

Global Financial Networks: First Round Interconnectedness



Nomura



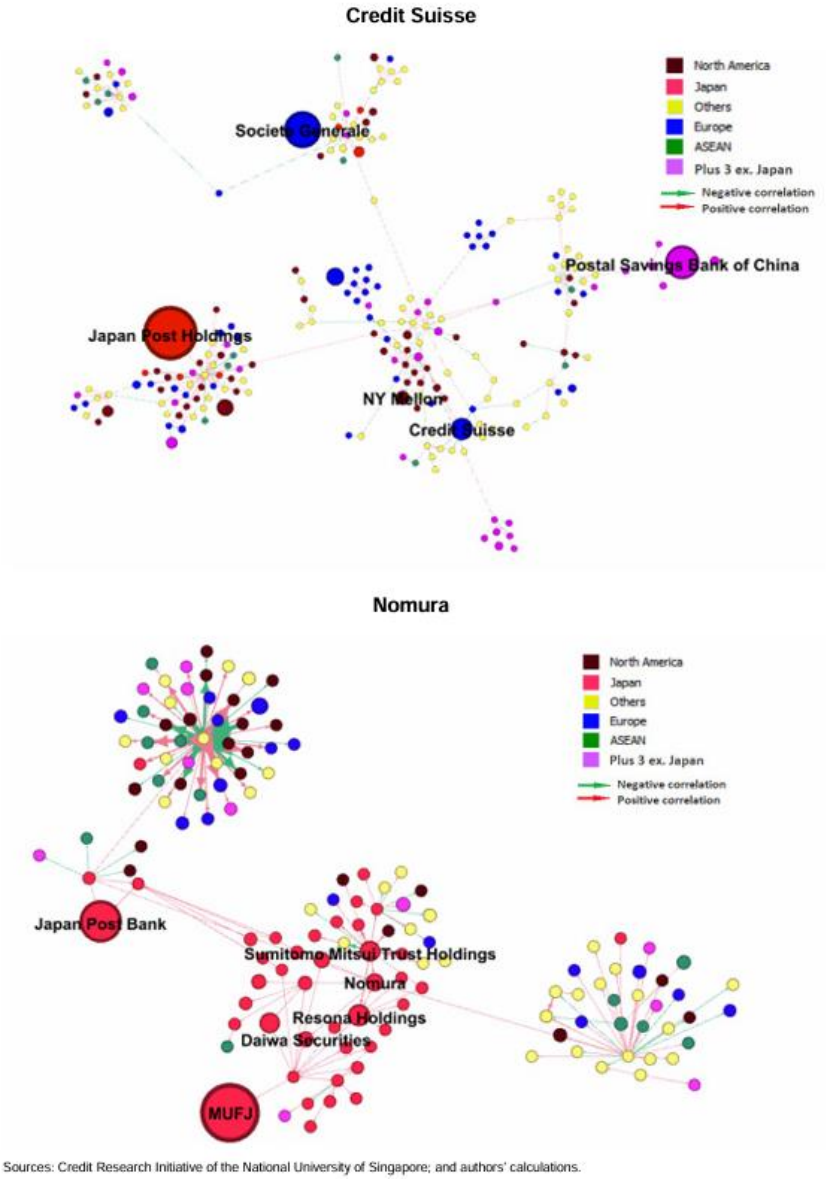
Sources: Credit Research Initiative of the National University of Singapore; and authors' calculations.

Figure 3

Figure 4 expands on the concept mentioned above by demonstrating the second-order interconnectedness. It includes the direct connections showed on the previous figure (Figure 5), plus the indirect relationships between the financial organizations that happen to

be one step removed from the direct counterparties of ACM. As the network progresses, and it becomes denser and more complex, it displays an extensive web of financial dependencies, hence the potential contagion pathways. This figure considers the possibility of systemic risk posed by ACM. By showing how financial distress can spread beyond immediate peers to influence a wider range of institutions.

Global Financial Network: Second Round Interconnectedness



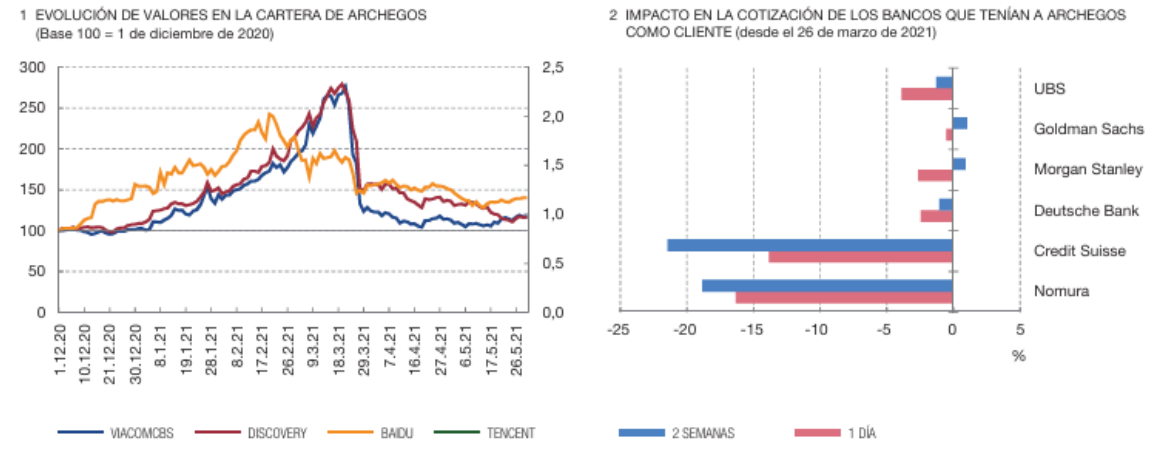
Sources: Credit Research Initiative of the National University of Singapore; and authors' calculations.

Figure 4

The other document that will be used in this case study to illustrate the systemic risks associated with the lack of regulation in family offices and the NBFI sector is “Revista de Estabilidad Financiera n. 41, Otoño 2021. Archegos y Greensill: caída, reacciones y aspectos comunes”. By analyzing in detail, the events that led to ACM’s downfall, it would be easier to understand the vulnerabilities produced by the gaps in regulatory framework therefore highlighting the need for stringent regulation.

In Figure 5, the authors call to attention how by the end of March 2021, some of the shares in which Archegos held open positions, such as ViacomCBS, plummeted, which resulted in ACM not being able to respond to their margin calls.

Daily Closing Price Movements



FUENTES: Bloomberg y cálculos propios.

Figure 5

Even though Hwang tried to resolve the default in an organized way, prime brokers such as Goldman Sachs and Morgan Stanley had already begun to sell the securities that covered their short positions. This contributed to the decline in stock prices and greater losses on the

banks that were slow to sell. By Monday March 29, 2021, Credit Suisse stock price had tanked by more than 14% and Nomura's by 16%.

This document also explores the Greensill scandal. Although Greensill and Archegos are different types of financial entities, their failures are compared because both business models exploited the lack of transparency in certain regulatory instruments. Greensill's business model was based on buying invoices issued by the suppliers of distressed companies at a discount while financing the operation by securitizing those invoices. Therefore, relying on complex financial instruments and high leverage.

5. Results

5.1 Evidence from Case Study

The collapse of Archegos Capital Management offers an interesting study by demonstrating the significant risks that if not handled correctly could have posed systemic risk. In this section it will be discussed how these risks are related to the blatant lack of regulation and transparency not only in the NBFI sector but specifically in family offices. The systemic vulnerabilities and regulatory shortcomings' roles in the financial turmoil will be highlighted as well.

The regulatory gap in which Archegos was conducting business ensured that their actions and financial operations went by without spiking concern. It being a family office meant that it was subjected to different regulations depending on the country. Therefore, had the opportunity to build their business model in a nonethical way that would allow them to reach risky positions without the acknowledgement or approval of their counterparts. This specifically allowed them to build massive leveraged positions by employing total return swaps. These swaps made it possible for ACM to gain synthetic long positions, which also enabled them to avoid disclosing its substantial market exposures. As the value of these positions grew, so did the potential for market disruption if Archegos became unable to meet its obligations. In result, Archegos was able to manipulate stocks and mislead banks into extending continuous credit lines. (Credit Suisse, 2021)

The Credit Suisse Group Special Committee's report on Archegos provided a thorough examination of the risk management failures and regulatory gaps that consequently led to ACM's collapse. As was mentioned in the past paragraph, the use of TRS along with the obscurity of their transactions led to undetected leverage. By December 2020, Archegos' top five positions accounted for 175% of its nets asset value (NAV), which is an indicator of extreme concentration risk. Credit Suisse's risk management practices were critically flawed. This extreme concentration, along with the relatively illiquid state of some of these stocks meant that if any need arose where they needed to rapidly liquidate positions, it would potentially lead to significant market disruptions and losses. These concentrated

positions make for a fragile and weak portfolio structure. The major bank's Prime Services division expedited cash trading along with synthetic trading with ACM because these activities are considered to be low-risk due to the expected successful margining and hedging. However, Archegos' cash positions were already dynamically margined, having adjusted the margins based on portfolio volatility and concentration, meanwhile its swap positions were statically margined. The static margining meant the initial margin remained stagnant regardless of the portfolio's appreciation, which also led to increased leverage and risk. The inability to adjust these margins led to the risk buildup that happened to be inadequately monitored.

Even though this family office frequently breached the limits of scenarios, and Potential Exposures (PE), Credit Suisse's risk management systems opted to not conduct decisive action. By April 2020, Archegos' PE was ten times the set limit, and by August 2020 it had substantially increased to twenty-five times the limit, as it is shown on Figure 6, these transgressions flagged significant risks, yet there was a systemic failure when it came to addressing these issues because of the cultural reluctance to challenge business actions and a lack of sufficient investment when it comes to risk management and personnel. (Credit Suisse, 2021) The repeated breaches of risk limits justify the systemic risk in oversight and internal control at the major bank (G-SIBS) (FSB, 2020).

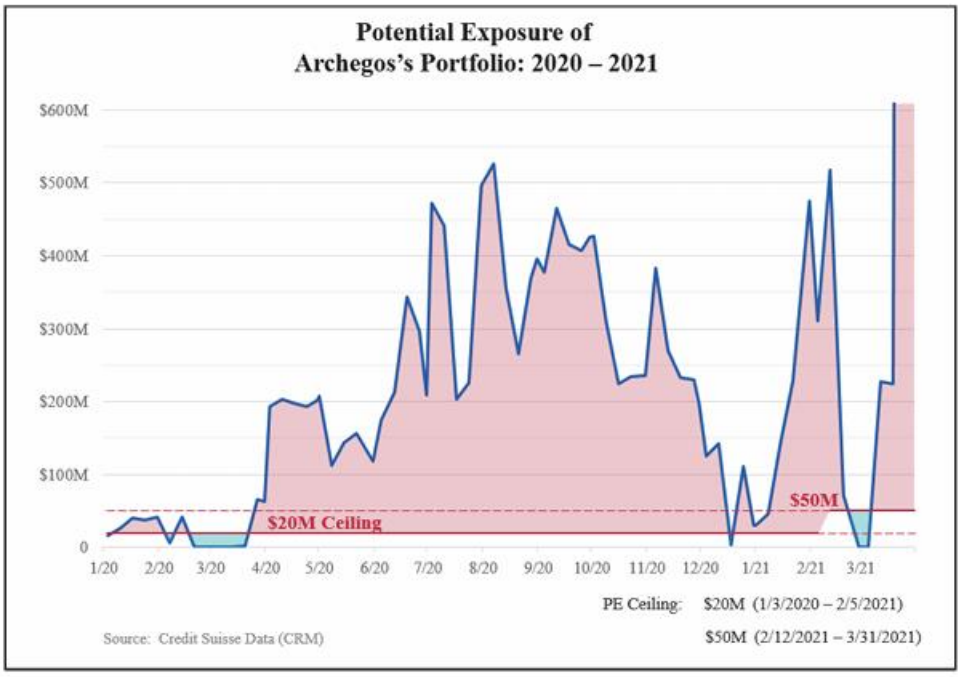


Figure 6

"CRM agreed that it was "comfortable monitoring the Archegos portfolio on a Bad Week basis," which it did from September 2020 until late February 2021. However, as shown in the chart below, which tracks the dollar amount of Archegos's scenario exposure from June 2020 through March 2021, regardless of the scenario used by PSR to determine exposure over time (i.e., Bad Week for 9/20–2/21 and Severe Equity Down for the rest of the time), Archegos was still well in excess of the prescribed limit." (Credit Suisse, 2021, p. 86)

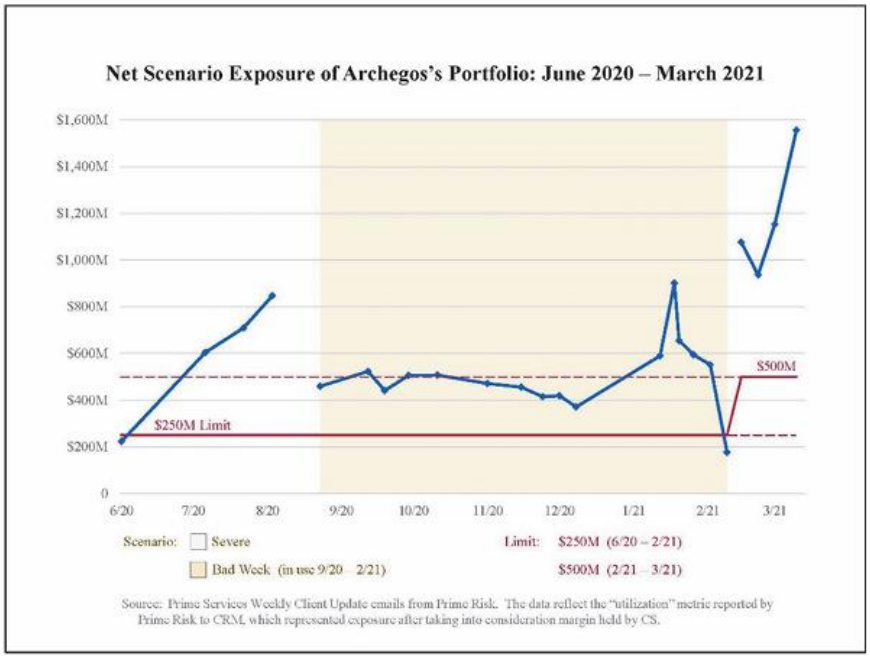


Figure 7

"Firms like ACM, which manage the wealth of individuals or families, have the potential to become systemically important for financial stability." (AMRO, 2021, p. 7) According to a report by UBS (2020) the 121 largest single-family offices collectively manage a net worth of an estimated $142 billion. In contrast, a report published a year earlier by Beech calculated that there are around 7,300 family offices globally, with total assets under management reaching $5.9 trillion. These figures highlight the immense financial influence that family offices possess. The failure of Archegos emphasized the vulnerabilities in the financial system, particularly at a time when global bank balance sheets were already strained due to rising credit risks from the COVID-19 pandemic.

Despite the harsh financial consequences from ACM's collapse, the AMRO report expresses how the ASEAN+3 financial institutions were largely insulated from the direct impact of this event. Their relative resilience to the spillover might be attributed to stronger regulatory frameworks and more conservative risk management practices that this area applies. However, this resilience should not be misunderstood as complacency. The international financial system is highly interconnected, and regional financial systems

remain vulnerable and exposed by major banks to spillovers from such events. The AMRO report also highlights the importance of effective and strong risk management practices. It suggests that these financial institutions incorporate stress testing and scenario analysis to be able to identify potential vulnerabilities. The desired result is to mitigate the impact of sudden market shocks and to prevent cascading failures.

Another suggestion the AMRO report proposes is the improvement of the regulation of derivatives and other complex financial instruments. These instruments are evidenced to amplify risks and lead to significant losses, as demonstrated by Archego's use of total return swaps. Policy makers and regulatory institutions need to make sure that these instruments are used in a transparent and ethical manner, along with the appropriate capital and collateral requirements to cover potential losses. This would help in reducing the systemic risks associated with these instruments.

Meanwhile the "Revista de Estabilidad Financiera n. 41, Otoño 2021. Archegos y Greensill: caída, reacciones y aspectos comunes" expresses how the interconnectedness of the financial sector with Archegos was one of the most worrisome aspects of ACM's collapse. Major global banks acted as intermediaries, facilitating the crisis, therefore highlighting the systemic relevance posed by the interconnectedness of the financial and NBFI sector. Even though the consequences did not reach a systemic catastrophe, major banks were still affected (Credit Suisse and Nomura) further emphasizing on how interconnections can amplify the consequences of a concentrated financial default.

This report coincides with the AMRO and Credit Suisse reports in terms of making a point of how important it is to have an efficient risk management system. This includes having a strong mitigation framework across all financial sectors, plus ensuring all parts have the relevant and necessary information to conduct the more efficient courses of action. The report also expresses how even though new regulations have been implemented, they are very broad, therefore there are gaps remaining. The collapse of Archegos is not an isolated case, but it does reflect a bigger problem associated with "shadow banking". This term refers to financial activities conducted outside the traditional banking system, which can generate systemic risks due to a lack of adequate regulation. The Financial Stability Board

(FSB) has identified five economic functions associated with potential sources of systemic risk in this area. In the case of Archegos, the relevant economic function was the use of leveraged investment vehicles through intermediaries to operate in financial markets. (Banco de España, 2021)

5.2 High Probability of Systemic Risks

The results discussed in the previous section, highlights how the collapse of Archegos Capital Management can be used to identify the substantial systemic risks associated with the current regulatory framework governing family offices. These institutions have repeatedly engaged in high-risk investment strategies similar to those of hedge funds even though the goal of family offices is to manage the wealth of high-net individuals or families. Since family offices are supposed to be private entities, they are not required to disclose their holdings nor their leverage, therefore creating a blind spot. This blind spot can conceal rising risks until it is too late to mitigate them.

This is a very important aspect of systemic risk that is posed by family offices, their ability to conduct high-risk business without regulatory oversight. As has been mentioned before, family offices are free from many of the requirements other financial institutions have to face. This allows family offices to perform shady trades without attracting scrutiny. In the case of ACM, by being able to hide their substantial market position, the moment they were unable to meet the margin calls had the consequence of a market crisis.

It is also very important to discuss how the use of complex financial instruments further aggravates these types of risks. The derivatives that Archegos were using, such as the contracts-for-difference (CFDs), provided the opportunity for them to amplify their exposure without alarming anyone. The way these derivatives have been used exacerbates the difficulty that market regulators and market participants face when having to assess the true risk posed by family offices. In the case of Archegos, the firm's use of CFDs meant that it could take on large, leveraged positions without owning the underlying securities, thus avoiding disclosure requirements and regulatory scrutiny.

The regulatory gaps have produced substantial consequences. The collapse of Archegos Capital Management is an example of how hidden leverage within family offices can lead to significant market disruptions. The evidence of this is how swiftly all the stocks that were associated with Archegos plummeted. Archegos' position caused significant volatility in the stock prices of affected companies, leading to widespread market instability. The volatility induced by the Archegos collapse was not an isolated incident but a manifestation of systemic vulnerabilities within the financial ecosystem. The sudden selloffs triggered by the margin calls on Archegos's leveraged positions led to significant losses for its prime brokers. These losses were estimated to be between USD 6-10 billion, highlighting the interconnectedness of financial entities and the potential for contagion effects. The way that the prime brokers reacted, getting rid of their positions in such a hurried manner not only affected the banks directly involved but also led to a ripple effect across the market, impacting investor confidence and causing broader market disruptions.

The lack of quantized data on the leverage used by family offices further complicates risk assessment. Estimates suggest that while some of the family offices use minimal leverage, a significant number engage in highly leveraged strategies. Data from various sources indicate that around 17% of family offices have leverage exceeding 20% of their assets under management, and this leverage can be concentrated within a few large family offices. (FSB, 2023) Such high leverage levels, combined with the significant assets under management controlled by these institutions, can lead to market destabilization if several family offices face simultaneous financial distress.

Additionally, the role of prime brokers in extending leverage to family offices without sufficient oversight or understanding of their aggregate exposures constitutes another layer of risk. Prime brokers may unknowingly provide excessive leverage to family offices, which can lead to significant financial stress in times of market distress. The Archegos collapse showed how such relationships could amplify market movements and cause substantial losses across the financial system. The concentration of prime brokerage services among a few large financial institutions further increases the risk of systemic contagion during times of financial shocks.

The regulatory status of family offices, therefore, presents a clear systemic risk. Without mandatory disclosure and comprehensive regulatory oversight, the financial system remains vulnerable to the kind of shock exemplified by the Archegos collapse. The lack of transparency and the high leverage used by some family offices can lead to significant market disruptions, as seen in 2021. To mitigate these risks, there is a pressing need for enhanced regulatory frameworks that include stricter reporting requirements and better monitoring of leverage and financial activities within family offices.

6. Discussion

6.1 Potential Solutions

The financial sector is characterized by its complexity and the dynamics between various actors, one of which is the family office. This section examines potential solutions to address the risks these entities pose by enhancing regulatory frameworks, increasing transparency, and improving risk management practices, with contributions from notable authors in the field.

As mentioned before, family offices frequently conduct business with substantial leverage and extravagant investment strategies, yet they lack the rigorous regulatory scrutiny applied to other financial entities. This regulatory gap can lead to systemic risks, as evidenced by cases like Archegos Capital Management, where insufficient transparency and oversight resulted in significant market disruptions. To address such vulnerabilities, it is essential to establish a comprehensive regulatory framework specially made to the unique operations of family offices.

The first step would be to bolster regulatory frameworks with the purpose of clearly defining what constitutes a family office and establish the boundaries at which they are to be subjected to regulatory oversight. This involves specifying the types of financial activities and the levels of assets under management that require regulation. Currently, the definition of family offices is vague, allowing many to operate under the radar of financial regulators. By creating a clear and precise definition, regulators can better identify which entities need oversight, ensuring that those with significant market influence are sufficiently monitored.

Mandatory reporting requirements are another crucial aspect of a strong regulatory framework. Family offices should be required to disclose detailed information about their leverage, investment positions, and counterparty exposures. Such transparency would allow regulators to monitor systemic risks more efficiently, empowering them to take preemptive actions to mitigate potential threats. The lack of such reporting was a critical factor in the Archegos' failure, where the extent of leveraged positions was not apparent until it was too

late. Regular reporting would provide a clearer picture of the financial landscape and help prevent similar incidents.

Another possible solution would be to implement periodic audits and stress tests. These tools are essential for assessing the financial health and risk management practices of family offices. These audits would ensure that family offices maintain adequate capital reserves and robust risk mitigation strategies. Stress tests, similar to those conducted on banks, would evaluate how family offices might perform under various adverse market conditions, providing insights into their resilience and helping to identify weaknesses that need to be addressed.

Additionally, coordination among national and international regulatory bodies is vital for effective oversight, especially for family offices operating in multiple jurisdictions. Cross-border operations can complicate regulatory efforts, as different countries have varying standards and practices. This coordination would ensure consistent oversight and management of the risks posed by global family offices. This could involve the creation of international regulatory frameworks or agreements that facilitate information sharing and collaborative oversight.

Throughout this whole report, it has been discussed how transparency is at the core of financial stability, and its lack in family office operations poses significant hidden risks. The convert nature of these entities makes it difficult for regulators and market participants to assess their activities and potential vulnerabilities. Improving transparency would mitigate these hidden risks and enhance market stability. One approach that can be taken in order to ensure the increase of transparency is to require family offices to publicly disclose their investment strategies, risk exposures, and leverage levels on a periodic basis. Conferences would allow market participants to better understand the potential risks and interconnections within the financial system. This level of transparency would not only aid regulators but also help other financial institutions and investors make more informed decisions, thereby contributing to overall market stability.

A different approach to ensure transparency is to implement real-time data reporting systems that would provide regulators with up-to-date information on family office activities. These systems would facilitate the timely identification and management of emerging risks. For example, if a family office significantly increases its leverage, real-time reporting would allow regulators to intervene in a timely fashion, before the situation escalates into a systemic threat. Such proactive measures are crucial in maintaining financial stability in a rapidly changing market environment.

Additionally, by adopting centralized databases with the purpose of collecting and analyzing data on family offices it would also aid in improving transparency. These databases should include comprehensive information on the assets, liabilities, and counterparty exposures of family offices. By aggregating this data, regulators could conduct more thorough risk assessments and identify trends or patterns that might indicate potential systemic risks. Centralized databases would also facilitate better coordination among regulators, allowing for a more unified approach to oversight.

Enhanced communication channels between family offices, regulators, and other financial institutions are essential for a collaborative approach to risk management. Regular dialogues and information-sharing sessions can help identify and address potential threats more proactively. For example, if a family office is experiencing liquidity issues, early communication with regulators and counterparties can lead to coordinated efforts to manage the situation and prevent broader market disruptions. This collaborative approach fosters a more resilient financial system where risks are managed collectively rather than in isolation. Effective risk management is critical for maintaining financial stability, particularly for entities like family offices that often engage in sophisticated investment strategies. Strengthening the risk management frameworks within family offices is essential to ensure they are better prepared to handle financial shocks and systemic risks.

Liquidity management is another critical aspect of risk management that needs to be addressed. Family offices should implement stringent liquidity management practices to ensure they can meet their short-term obligations without resorting to asset fire sales, which can destabilize markets. Effective liquidity management involves maintaining adequate

cash reserves and having access to reliable sources of funding. This ensures that family offices can navigate periods of market stress without contributing to broader financial instability. Establishing leverage limits is also essential to prevent excessive borrowing and speculative investments. These limits should be based on the risk profiles of the family offices and their potential impact on the broader financial system. Excessive leverage was a key factor in the Archegos collapse, and similar situations can be avoided by imposing prudent leverage limits. By capping the amount of leverage family offices can employ, regulators can reduce the likelihood of significant market disruptions caused by forced deleveraging.

Moreover, bolstering governance structures within family offices is also crucial for effective risk management. Adopting best practices in governance, such as the establishment of independent risk committees and the appointment of Chief Risk Officers (CROs), can significantly improve oversight and decision-making processes, as it was seen on the Credit Suisse report. Independent risk committees can provide unbiased assessments of risk exposures and ensure that risk management strategies are adequately implemented. The role of a CRO is to oversee the overall risk management framework, ensuring that risks are identified, measured, and managed effectively.

It is also very important to ensure that the institutions perform ongoing training and education for family office personnel on risk management and regulatory compliance to ensure high standards of risk management. The financial industry is constantly evolving, and staying updated with the latest knowledge and skills is essential for managing risks effectively. Regular training programs and workshops can help family office staff stay informed about new regulations, emerging risks, and best practices in risk management. This continuous learning approach ensures that family offices are well-equipped to handle the complexities of modern financial markets.

The systemic risks posed by the lack of regulation in family offices are various and demand a holistic approach in order to mitigate. By bolstering regulatory frameworks, increasing transparency, and improving risk management practices, regulators can address these risks and ensure a more stable financial system. Establishing clear definitions and limits for

regulatory oversight, mandating comprehensive reporting requirements, and conducting regular audits and stress tests are essential measures when it comes to improving regulatory frameworks. Strengthening transparency through public disclosures, real-time data reporting, and centralized databases will help manage hidden risks and ensure market stability. Bolstering risk management practices by mandating comprehensive risk assessments, implementing stringent liquidity management, establishing leverage limits, enhancing governance structures, and providing ongoing training and education will ensure that family offices are better prepared to handle financial shocks and systemic risks. Collectively, these measures will contribute to reducing the vulnerabilities and potential disruptions associated with family offices, fostering a more resilient and stable financial system.

The contributions of various authors and institutions have provided valuable insights into the systemic risks posed by family offices and the potential solutions to address these risks. Angela Stuart discusses resilience strategies and approaches for systemic threats, which align with the comprehensive risk assessments and governance structures proposed here. Meanwhile, The Financial Stability Board provided insights into the financial stability implications of leverage in non-bank financial intermediation, which support the need for regulatory frameworks, transparency, and improved risk management in family offices. The FSB's analysis highlights the importance of implementing mandatory reporting requirements, conducting regular audits and stress tests, and enhancing coordination among national and international regulatory bodies to ensure consistent oversight and address cross-border risks. Ortwin Renn et al contribute interdisciplinary approaches to systemic risks, emphasizing the need for integrated risk management strategies as suggested in the proposal. Their work underscores the importance of collaboration and communication among family offices, regulators, and other financial institutions to foster a proactive and holistic approach to risk management.

By implementing these measures and drawing on the contributions of experts in the field, regulators can mitigate the systemic risks posed by family offices and ensure a more stable and transparent financial system. Enhanced regulatory frameworks, increased transparency,

and improved risk management practices will collectively contribute to reducing the vulnerabilities and potential disruptions associated with family offices. This comprehensive approach will help create a more resilient financial system, capable of withstanding the complexities and challenges of modern financial markets.

7. Conclusions

7.1 Main Lessons Learned

The study of Archegos Capital Management's collapse offers profound insights into the systemic risks posed by family offices and the urgent need for improved regulatory oversight. The main lesson learned from this case is the importance of transparency and disclosure when mitigating systemic risks. The blind spots that family offices pose for regulatory institutions and policymakers due to their operating with minimal oversights, unlike other financial entities, allow for potentially destabilizing risks to accumulate while going unnoticed.

A particularity of the Archegos collapse is the sheer scale of the leverage employed without adequate regulatory scrutiny. Family offices, which manage the wealth of high-net-worth individuals, have increasingly adopted sophisticated and high-risk investment strategies. However, the exemption from many disclosure requirements enables them to take on substantial leverage and obscure their true risk exposure through complex financial instruments like derivatives. The Archegos case demonstrated how such practices could lead to sudden and severe market disruptions when the hidden risks materialize.

The interconnected nature of the global financial system further amplifies these risks. The failure of Archegos did not only affect the firm itself but also had significant repercussions for its prime brokers, including major financial institutions like Nomura and Credit Suisse. The losses incurred by these banks, estimated between $6-10 billion, highlighting how the financial distress of a single, highly leveraged entity can spread through the financial system, affecting numerous other actors and potentially triggering broader market instability.

An important lesson from this study is the need for enhanced risk management practices within both family offices and their counterparties. The Archegos collapse exposed deficiencies in the risk management frameworks of prime brokers, who failed to adequately assess and mitigate the risks associated with their client's leveraged positions. Improved due diligence and risk assessment procedures are essential to prevent similar incidents in

the future. Prime brokers and other financial institutions must implement more stringent oversight of highly leveraged clients, including regular stress testing and maintaining adequate collateral to cover potential losses.

Another significant lesson is the necessity of a more cohesive and stringent regulatory framework for family offices. The current regulatory environment allows for significant gaps that can be exploited, as evidenced by the Archegos case. A unified regulatory approach, similar to that applied to hedge funds and other financial entities, would help ensure that family offices obey the same standards of disclosure and risk management. This would involve mandatory registration, detailed reporting of investment positions and leverage, and regular audits to verify their compliance.

Furthermore, the use of complex financial instruments like derivatives by family offices exacerbates the opacity and risks associated with their activities. Derivatives, such as contracts-for-difference used by Archegos, enable these entities to amplify their exposure significantly while evading typical disclosure thresholds. This creates a significant challenge for regulators and market participants in assessing the true risk posed by these entities. Regulatory bodies must tighten the rules surrounding the use of such instruments, including setting stricter limits on leverage and requiring comprehensive reporting on derivative positions.

The Archegos collapse also emphasizes the importance of interdisciplinary cooperation while managing systemic risks. Effective governance of systemic risks requires collaboration between regulators, financial institutions, and other stakeholders. This includes the development of sophisticated modeling tools to better understand the interconnected nature of financial markets and the potential ripple effects of a single entity's failure. An integrated approach that combines empirical data with insights from complex science and social response patterns is essential for identifying and mitigating systemic risks before they escalate into broader financial crises.

Lastly, the main lessons learned from the Archegos collapse highlight the urgent need for better regulation and oversight of family offices to mitigate systemic risks. Enhanced

transparency and disclosure requirements, improved risk management practices, stricter rules on the use of complex financial instruments, and a more cohesive regulatory framework are essential steps in safeguarding the stability of global financial markets. Without such reforms, family offices will continue to pose a hidden threat to financial stability, capable of triggering widespread disruptions with potentially severe economic consequences.

7.2 Identified Research Gaps

While the study of the Archegos collapse provides valuable insights into the systemic risks posed by family offices, several research gaps remain that are in need of further investigation. Identifying these gaps is crucial for developing a comprehensive understanding of the impact of regulatory changes on family offices and the broader financial system. One significant research gap is the lack of detailed data on the operations and risk exposures of family offices. Due to minimal regulatory requirements, family offices often operate under the radar, making it challenging to gather comprehensive data on their activities. Future research should focus on developing methodologies to collect and analyze data from family offices, including their investment strategies, leverage levels, and use of complex financial instruments. This data is essential for understanding the full extent of the risks posed by family offices and for designing effective regulatory frameworks.

Another area for future study is the impact of enhanced transparency and disclosure requirements on family offices. While increased transparency is widely recognized as a crucial step in mitigating systemic risks, the specific effects of such measures on family offices and the broader financial system remain unclear. Research should examine how mandatory reporting of investment positions and leverage affects the behavior of family offices, their risk-taking activities, and their interactions with other financial entities. This includes assessing whether greater transparency leads to more prudent risk management practices or whether it has unintended consequences, such as driving risky activities further underground.

The role of complex financial instruments in exacerbating systemic risks is another critical research area. The use of derivatives like CFDs by family offices allows them to amplify their exposure significantly while evading disclosure thresholds. Future research should explore the specific mechanisms through which these instruments contribute to market instability and the potential regulatory measures that could mitigate these risks. This includes examining the effectiveness of leverage limits, reporting requirements, and other regulatory interventions in reducing the opacity and systemic risks associated with derivative usage by family offices.

Additionally, the interconnectedness of financial markets and the potential contagion effects of a single entity's failure highlight the need for research on systemic risk propagation. The Archegos collapse demonstrated how the financial distress of one entity could spread through its connections with other major financial institutions, causing widespread market disruptions. Future studies should focus on developing sophisticated models to simulate the propagation of systemic risks across interconnected financial networks. These models can help identify potential vulnerabilities and inform the design of regulatory measures to contain the spread of financial distress.

The impact of regulatory changes on the broader financial system is another area that requires further investigation. While bolstering the regulation of family offices is essential, it is also important to consider the potential effects on other financial entities and market dynamics. Research should explore how changes in the regulatory environment for family offices might influence the behavior of hedge funds, investment banks, and other financial institutions. This includes assessing whether stricter regulations for family offices lead to a shift in risk-taking activities to other less-regulated entities, thereby merely transferring rather than mitigating systemic risks.

Moreover, the potential unintended consequences of regulatory changes on market liquidity and innovation should also be examined. While stricter regulations aim to enhance financial stability, they could also affect the ability of family offices to provide liquidity and support market functioning. Future research should investigate the trade-offs between regulatory measures designed to mitigate systemic risks and the potential impacts on market liquidity,

efficiency, and innovation. This includes assessing whether certain regulatory interventions might stifle financial innovation or lead to reduced market participation by family offices.

Another critical research gap is the need for a deeper understanding of the behavioral aspects of risk management within family offices. The Archegos collapse highlighted deficiencies in the risk management frameworks of both the family office and its counterparties. Future studies should investigate the decision-making processes within family offices, including how they assess and manage risks, the role of behavioral biases, and the effectiveness of existing risk management practices. This research can inform the design of more effective risk management frameworks and regulatory guidelines tailored to the unique characteristics of family offices.

While the Archegos collapse provides valuable lessons on the systemic risks posed by family offices, several research gaps remain that require further investigation. Future research should focus on collecting detailed data on family office operations, assessing the impact of enhanced transparency and disclosure requirements, examining the role of complex financial instruments, and developing models to simulate systemic risk propagation. Additionally, the potential unintended consequences of regulatory changes on the broader financial system, market liquidity, and innovation should be explored. Finally, a deeper understanding of the behavioral aspects of risk management within family offices is essential for designing effective regulatory frameworks and risk management practices. Addressing these research gaps will be crucial for mitigating systemic risks and enhancing the stability and resilience of the global financial system.

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List of Acronyms:

ACM: Archegos Capital Management

CFD: Contracts For Differences

FSB: Financial Stability Board

IMF: International Monetary Fund

ECB: European Central Bank

CET1: Common Equity Tier 1

LCR: Liquidity Coverage Ratios

NSFR: Net Stable Funding Ratio

NBFI: Non-bank Financial Intermediary

SEC: Securities and Exchange Commission

BCBS: Basel Committee on Banking Supervision

FSOC: Financial Stability Oversight Council

G-SIBs: Global Systematically Important Banks

NAV: Net Asset Value

PE: Potential Exposures

CRO: Chief Risk Officer

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