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The Financial Geography of Resilience: A Case Study of Goldman Sachs

Michael A. Urban,^{*}  Vladímir Pažitka,[†]  Stefanos Ioannou,^{*}  and Dariusz Wójcik^{*} 

^{*}*School of Geography and the Environment, Oxford University Centre for the Environment, University of Oxford, UK*

[†]*University of Leeds Business School, University of Leeds, UK*

For all of its iconic character and controversial influence, Goldman Sachs has received rather shallow scrutiny in social sciences. This article combines an in-depth case study of Goldman Sachs with a theoretical contribution at the nexus of financial geography and evolutionary economic geography. We contend that spatial arbitrage and regulatory capture are fundamental to the organizational resilience of financial firms. Using empirical evidence, we further argue that financial centers' adaptive resilience is a product of their strategic positioning in financial firms' value chains. We formalize this contribution with a framework describing a set of paper, cyber, relational, and technical dimensions of financial centers' resilience and emphasizing regulatory capture in firms' response and adaptation to shocks. We deploy our framework in a case study of the evolution of Goldman Sachs between 1999 and 2017, focusing on how it contributed and adapted to the financial crisis of 2008–2009. Using original quantitative data and interviews, we shed light on how, as a product of the crisis, the firm unbundled its New York metro operations toward Salt Lake City and how the latter evolved from a brass-plate center to the bank's second largest U.S. office. *Key Words:* adaptive resilience, financial centers, global financial crisis, Goldman Sachs, regulatory capture.

Goldman Sachs has been the subject of innumerable media articles and entire books. Cohan's (2012) *Money and Power: How Goldman Sachs Came to Rule the World* says something meaningful about how the U.S. investment bank has captured the attention, perhaps even the lives, of many. Referring to the global financial crisis (GFC) of 2008–2009, a review of the book stated that it “lifts the lid on Goldman's pivotal role in the meltdown” (Watkins 2011). For better or worse, Goldman Sachs (GS) epitomizes narratives of high-powered finance. Although popular imaginaries of the investment bank persistently land on the footfalls of men in pinstriped suits frantically pacing up and down Wall Street, the substantive reality of one of the most systemically important banks in the world (Financial Stability Board 2019)—its people and infrastructure—is increasingly geographically removed from Manhattan. Goldman Sachs Group, Inc., is incorporated in the state of Delaware. Goldman Sachs Co., LLC, the group's fully owned broker-dealer, is headquartered in the State of New York with a business address on 200 West Street in New York City, yet its mailing address is 222 South

Main Street in Salt Lake City, Utah. As we show here, this dispersed geography is the product of shrewd spatial arbitrages aimed at optimizing the group's legal environment, its command-and-control functions, and its operational efficiency.

Although the geographical unbundling of financial firms' tasks and functions predates the GFC (Clark and O'Connor 1997), the shock arguably catalyzed unprecedented organizational shifts in response to changing regulation, increased scrutiny, and revenue compression (Davidoff and Zaring 2009; Dixon and Monk 2014). In this article, we contend that spatial arbitrage and regulatory capture were fundamental to the organizational resilience of financial firms to the GFC. In many ways, GS exemplifies a larger post-GFC trend in the financial sector whereby financial firms have increasingly shifted their legal entities toward more flexible jurisdictions and moved their operations toward frontier locations to reduce their operational costs (see, e.g., Haberly et al. 2019). By implication, we argue that the adaptive resilience of financial centers was, and still is, a product of their strategic positioning in global financial firms' value chains. To illustrate our argument,

we offer an in-depth case study of GS, one of the most influential and iconic financial firms of the twenty-first century.

Our research sits within a wider research agenda on the geographies of money and finance that burgeoned in the aftermath of the GFC (most notably, see Lee et al. 2009; Pollard 2013). Specifically, we position our contribution at the nexus of financial geographical work on financial centers and finance and advanced business services (see Wójcik 2021) and evolutionary economic geography (EEG) using the concept of adaptive resilience (for a general account see Fromhold-Eisebith 2015). In particular, we address persistent debates in EEG on whether the resilience capacity of complex economic systems is embedded in sectoral or regional contexts. The financial geographical approach we follow addresses this tension by using a sectoral-cum-regional approach positing that what happens to both regions and sectors ultimately depends on firms' responses to shocks.

To underpin our argument, we propose a novel financial geographical framework designed to study adaptive resilience by focusing on the concepts of spatial arbitrage and regulatory capture. We situate the former concept in financial geographical scholarship on global financial networks (Coe et al. 2014). The latter concept is situated in EEG and builds on critiques toward EEG's structuralism and neglect of human agency, power, politics, and scant treatment of actors beyond firms (Bristow and Healy 2014). Empirically, we favor a case study approach to provide an in-depth demonstration of firm-level responses and adaptation to shocks and show their implications for sectoral-cum-regional resilience. In doing so, we answer evolutionary economic geographers' call for in-depth studies on the process of adaptive response (Martin and Sunley 2015).

Methodologically, we use both quantitative and qualitative data. We draw insights from quantitative data on GS and other global systemically important financial institutions from a wide range of sources. We retrieved sub-prime-related investment banking transactions from Dealogic databases. We hand collected company-level data from annual financial statements, S&P Global, the Securities and Exchange Commission, and the Federal Deposit Insurance Corporation (FDIC). We also collected governance data on regulatory capture and systemic risks management from TruValue Labs and the Center for Responsive Politics.

Qualitatively, we derive insights from twenty-two semistructured interviews, involving current and former GS executives, as well as individuals who have had close dealings with the firm through government agencies, subcontractors, industry associations, and other investment banks. The interviews were conducted in person in New York City, Salt Lake City, Washington, DC, London, and São Paulo, and online with interview partners in Mexico City and Paris between June 2018 and March 2020. All interviews were recorded and transcribed. The transcripts were analyzed iteratively and supplemented with a triangulation approach (Jick 1979) to confront spoken lived experiences with secondary statistics. [Appendix A](#) offers an overview of the interview materials and references for in-text citations and quotes. Finally, we complement our quantitative and qualitative sources with content analysis of academic research, government reports, news articles, and books written about GS and the GFC.

Using this rich body of empirical evidence, we show the importance of spatial arbitrage and regulatory capture in the evolution of GS as a financial firm and uncover their implications for the evolution and resilience of financial centers toward, through, and beyond the GFC. Precrisis, our results emphasize GS's own dealings in subprime mortgages; its U.S. and East Coast focus, in terms of both operations and revenues; and its use of a Utah-based brass-plate bank to elude federal supervision. During the crisis, we uncover GS's deep relations with public officials in regulatory hotspots, particularly in Washington, DC, and New York City. We document how, to access government bailout facilities, the firm had to submit to federal supervision, rescind its Utah bank, and open a commercial bank in New York. Although supervision shifted back to the East Coast, much of the firm's operations were transferred to Salt Lake City, which effectively pivoted from an offshore office to a lower-cost back-office center.

Finally, we offer evidence to highlight three elements crucial to GS's organizational-cum-regional adaptation in response to the crisis: (1) GS's heavy-handed approach to fight back against reregulation in Washington, DC; (2) GS's diversification strategy, moving away from trading and into low-margin and technologically intensive activities, including asset management and retail banking; and (3) GS's improved operational efficiency, mainly achieved by moving large chunks of its back- and middle-office

functions away from the New York metro area toward “value-driven locations,” with Salt Lake City in the lead.

Ultimately, our research highlights several possible disconnects between firm and sectoral resilience and the resilience of other complex adaptive systems. As previously argued, we further illustrate how the resilience of a firm and its sector can contribute to instability and ultimately plunge entire economies into austerity and precarity (Christophers 2016). Our original contribution lies in the demonstration that resilient firms might not necessarily collectively create resilient financial centers (commonly understood as cities with a high concentration of financial firms’ headquarters). As we show, the very mechanisms of resilience at the firm level can, in fact, undermine the resilience of their financial centers, given that they might move operations as part of their pursuit of spatial arbitrage. Consequently, the resilience of financial centers relates to what they can offer to financial services firms and how favorably they compare to other financial centers along the four dimensions of resilience we propose.

The rest of the article is organized as follows. We first discuss the merits of a financial geographical approach to the study of resilience and unpack an original conceptual framework to support it. We then deploy key elements of our framework in a case study of GS spanning almost two decades.

A Financial Geography Perspective on Resilience

The concept of resilience has become a central theme in EEG. It has been adopted by economic geographers interested in the responses of clusters (Martin and Sunley 2011) and regions (Boschma 2015) to economic shocks and crises and generated many qualitative and quantitative studies (Holm and Østergaard 2015; Ray et al. 2017). There are several definitions of resilience (Boschma 2015). We chose to use adaptive resilience, which is the most widely used definition of resilience in EEG and stems from complex adaptive systems theory. It is generally understood as the ability of complex systems to adapt to various market and environmental shocks and maintain their core functions, if necessary, by reallocating resources and altering their structure (Simmie and Martin 2010).

To study adaptive resilience, scholars have used regional as well as sectoral perspectives leading to persistent debates on where the resilience capacity of complex economic systems is nested. Numerous case studies have provided valuable insights on the specific mechanisms that make regions resilient (see Cowell [2013] on Buffalo and Cleveland; Bristow and Healy [2015] on Wales; Masik [2018] on Poland). In the sectoral approach, regions are understood as spaces where multilocal firms deploy resources and engage with other firms in their value chains. Because firms and whole sectors aim to ensure their survival through the implementation of supraregional, often global strategies, the resilience agency of regions is deemed limited. Instead, the resilience of regions is thought to depend on their strategic positioning within value chains and the production networks of multinational enterprises, in addition to region-specific resources that affect their attractiveness in respect to various sectoral configurations (Martin et al. 2016).

To formally bridge the gap between regional and sectoral approaches, Fromhold-Eisebith (2015) proposed to incorporate sectoral resilience as a complementary dimension of regional resilience and conceptualize links within value chains that transcend regional boundaries. She integrated sectoral and regional dimensions into a common framework featuring economic actors who flexibly respond to economic shocks by allocating resources and engaging with other firms within their sector across multiple regions of operations. This sectoral-cum-regional approach is implicit in most, if not all, theoretical and empirical research in financial geography. The very concept of “financial centers” rests firmly on the idea that sector (i.e., financial services) and region (i.e., cities) are ontologically inseparable. From historical accounts of financial centers such as London supplanting Amsterdam at the turn of the nineteenth century (Cassis 2006) to more recent studies on the global dominance of London and New York (Wójcik 2013), financial geography is deeply immersed in studying financial systems with a sector-region approach.

Financial centers have often been studied and presented hierarchically, as hubs of the international monetary system (Cassis 2006) and spaces competing against one another in the provision of financial services, as exemplified by rankings of financial centers. Recently, however, scholars have started to pay

more attention to financial center specialization, arguing that relatedness and complementarity are essential to financial center competitiveness in global markets. As Lai (2012) put it, “Financial actors capitalize and further develop on these differences through strategies of spatial arbitrage, resulting in functionally different but relationally interdependent roles” (1286). In the mutual funds industry, for instance, Luxembourg and Dublin have developed specialization in depository banking, valuation, documentation, and reporting, whereas London has specialized in investment management services, investment advisory, and financial engineering (Dörny 2016). Over the last decades, technology has come to claim an increasingly important role in seamlessly linking distant tasks and functions across multiple financial centers. Today, most large financial services firms operate complex and spatially extensive networks of captive offices and external providers that are strategically located in cities and regions that offer distinct competitive advantages including preferential regulation, innovation capacity, low taxation, cheap or specialized labor, inexpensive real estate, and advanced cyberinfrastructure. We contend that a financial firm’s ability to dynamically manage their network is a fundamental determinant of their vulnerability, reaction, and adjustment capacity, and ultimately their recoverability (i.e., their organizational resilience).

To frame our argument, we propose a framework built on four key dimensions of financial center specialization—relational, cyber, technical, and paper—to provide geographical explanations for the evolution and resilience of financial firms and financial centers. We follow Haberly et al. (2019) and maintain that, through technology, financial firms are increasingly capable of reaping variegated locational advantages across distant cities and regions. This technology-enabled geographical unbundling of financial firms’ capabilities is producing spatially extensive networks that feature competitive advantages that could challenge those traditionally offered by international financial centers (IFCs) like New York and London.

In particular, human labor is increasingly diverging between client-facing locations (relational specialization¹) and back-office locations (technical specialization), as firms optimize their human resource allocation globally by way of arbitrage between high-end customers’ preferences for face-to-

face interactions on one hand and the scale, scope, and costs of specialized labor pools on the other. Equally, cyberinfrastructure requires financial firms to balance connectivity (e.g., colocating servers with stock exchanges to ensure signal speed; Grote 2009) and cost reduction strategies (e.g., choosing frontier locations that offer cheap land and energy to host and power data centers). The paper dimension is also increasingly optimized using legal artifacts to link subsidiaries located in offshore jurisdictions that offer enhanced legal and regulatory flexibility.

Finally, we wish to insert “power and agency” as a hitherto understated catalyst of financial firms’ and centers’ competitiveness and resilience. Indeed, alongside murkier offshore activities, financial firms expand colossal resources onshore to embed the protection of their interests through the capture of regulatory processes. Analyzing data collected by the Center for Responsive Politics, we found that between 2000 and 2008, the finance, insurance, and real estate sector had the largest lobbying budget of all sectors in the United States (\$2.57 billion). The financial sector’s lobbying efforts to fight reregulation in the aftermath of the GFC are well documented, too (Helleiner 2014; Bayoumi 2017). The process of regulatory capture is prone to centralization and relies on a mixture of financial resources and relational and informational advantages. We identify regulatory hotspots as places that combine at least a legal-regulatory dimension with a relational specialization—an obvious example is Washington, DC. In the United States, regulatory capture could also affect individual states as firms seek to lower the costs of operating their servers by lobbying for favorable energy laws. The framework is presented in Figure 1, alongside a table describing centripetal and centrifugal forces affecting spatial arbitrage within each dimension.

Interestingly, the resilience literature has paid little attention to the importance of regulatory capture. Yet lobbying intensity has been shown to directly contribute to the buildup of systemic risk. A report published by the International Monetary Fund in 2009 showed that between 2000 and 2007 higher lobbying activities by mortgage lenders were associated with faster growing and riskier loan portfolios, ultimately leading to higher mortgage delinquency rates. It concluded that “lobbying may be linked to lenders expecting special treatments from policymakers, allowing them to engage in riskier lending

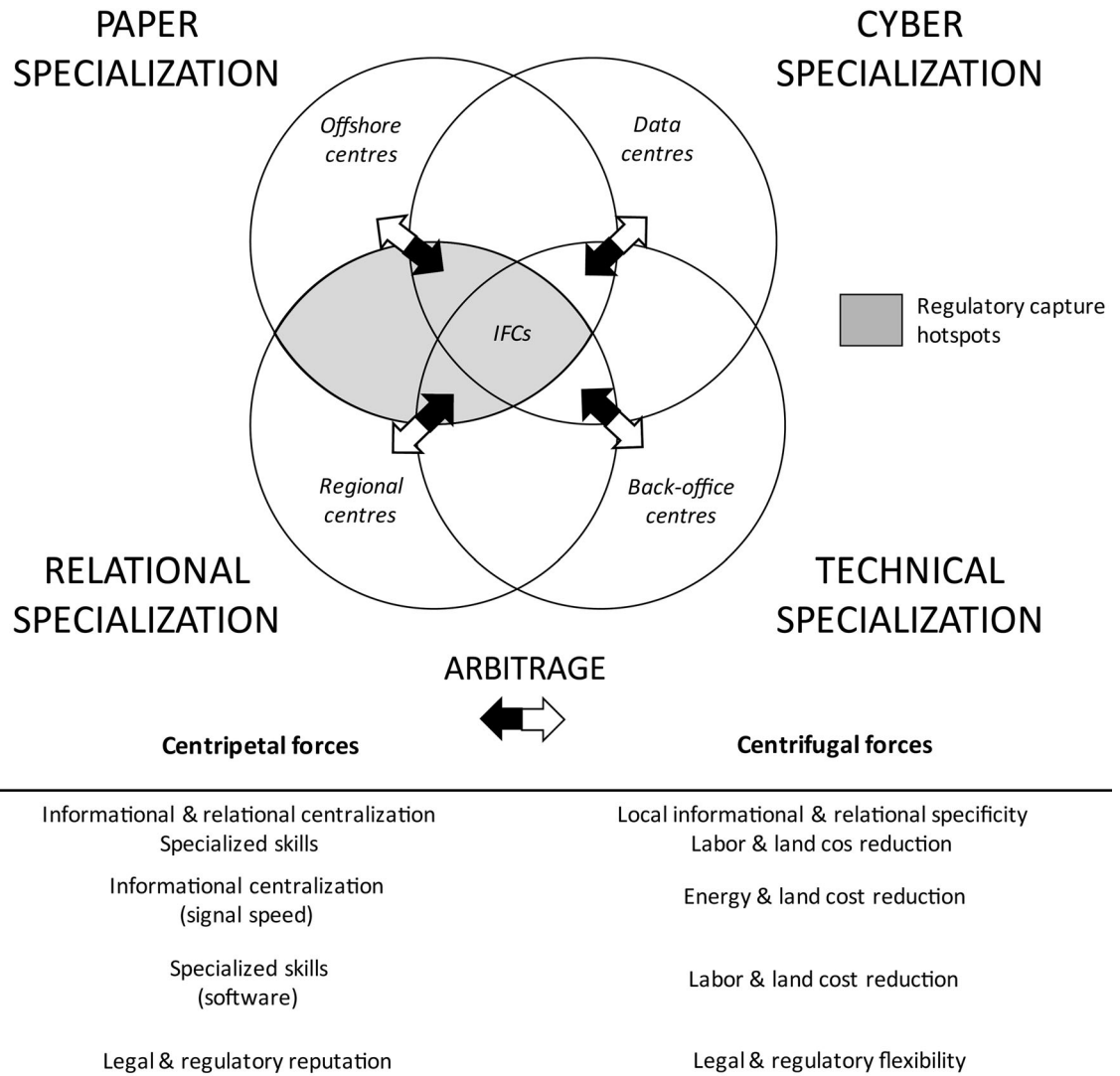


Figure 1. Financial center specialization and complementarity. Source: Adapted from Haberly et al. (2019).

behavior” (Igan, Mishra, and Tressel 2009). The lack of appreciation for mechanisms akin to power and agency in the resilience literature can be linked to the origins of resilience thinking in ecology. Whereas physical and ecological systems can be argued to evolve in a predictable manner, human agency allows for the reconfiguration of socioeconomic systems in ways that might be difficult to anticipate (Fromhold-Eisebith 2015). Instead of simply responding to their environment, economic actors use foresight and power to actively and consciously shape it.

Due to power asymmetries between economic actors, socioeconomic systems tend to evolve and reconfigure in response to the actions of the most influential actors. *Strong agents* have the capacity to actively shape their environment and influence the

actions of others (Bristow and Healy 2015). They have advanced cognitive abilities and are goal-oriented, and their decisions are the product of their own agendas, as well as their interactions with other agents. In contrast, *weak agents* are influenced by their environment and the actions of strong agents (Ramalingam et al. 2008). Following a shock, when collectives (regions, sectors, national or supranational economies) decide how to restructure themselves, economic actors with the most significant resources, political power, and network capital are often called on to draw the contours of economic change (Smith and Stirling 2010). By controlling key resources and influencing policy, strong agents shape the opportunities and choices available to weak agents (Pain and Levine 2012).

“[W]ho governs?” ... [W]hose system framing counts? ... [W]hose sustainability gets prioritized?” become key questions for the identification of strong agents driving the process of resilience (Smith and Stirling 2010, 1). As a result, the analysis of crisis response warrants an approach that engages with governing bodies, such as states and regulators, as well as influential lead firms. Although complex systems cannot be controlled by individual actors, governance structures tend to bring together a handful of strong agents to collaborate and resolve systemic problems. As a result, crisis management often reflects regional-cum-sectoral power asymmetries. The role of U.S. government agencies in bringing together leading financial services firms, strategic investors, and broker-dealers in financial distress illuminates the importance of facilitated cooperation (Davidoff and Zaring 2009).

Ultimately, we contend that the study of financial organizations’ resilience and, by extension, complex financial systems’ resilience can be enhanced by a financial geographical approach that pays particular attention to lead firms’ spatial arbitrage and regulatory capture capacity. To substantiate our argument, we study GS’s geography in the years leading up to, during, and after the GFC. In the remainder of this article, we deploy our framework and offer a financial geographical tale of resilience in three acts, following Martin and Sunley’s (2015) conceptualization of resilience:

1. 1999 to 2006: We set the stage by positioning GS organizationally and geographically in the buildup of systemic risk in financial markets. This corresponds to Martin and Sunley’s (2015) first stage of resilience, characterized as “vulnerability and exposure to shocks” (13).
2. 2007 to 2009: We document GS’s response to the acute phase of the financial crisis by unpacking the political dimension of crisis response as well as the paper and technical arbitrages that led to the first major geographical unbundling of GS’s operations away from the New York metropolitan area. This corresponds to Martin and Sunley’s (2015) second and third stage, described as “depth of reaction to shock” and “extent and nature of adjustment to shock” (13).
3. 2010 to 2017: Finally, we unpack GS’s deep involvement in the process of regulatory capture and document the firm’s shrewd corporate reorganization. This corresponds to Martin and Sunley’s (2015) fourth and last stage of resilience, “recoverability” (13).

1999 to 2006: Paper and Technical Arbitrage in the Trading Boom

The turn of the century was marked by mounting competitive pressures in the residential mortgage market in the United States. Traditionally, mortgages used to be held to maturity by the commercial banks that issued them. In the late 1990s, however, originators of mortgages started to sell them off to wholesale mortgage companies. Investment banks, government-sponsored mortgage companies, and insurers then proceeded to repackage them into tradable mortgage-backed securities (MBS) and sell those to institutional investors worldwide. The trend marked a “shift from a ‘locally originate and locally hold’ model of mortgage provision to a securitized ‘locally originate and globally distribute’ model” (Martin 2011, 595). This not only allowed commercial banks to underwrite more mortgages than their balance sheet could support but it also aggravated the problem of moral hazard as mortgage issuers would no longer bear full exposure to the credit risk associated with newly issued mortgages (Wilmarth 2009). To exploit such opportunities, financial institutions started to develop increasingly sophisticated products and expand the size of their balance sheets to support the issuance and the market-making for MBS.

In the 1990s, to access adequate funds for expanding their operations, many U.S. broker-dealers became publicly listed companies. GS was the last major broker-dealer to go public. In 1998, its partners voted in favor of an initial public offering (IPO) and filed Goldman Sachs Group, Inc.’s original certificate of incorporation with the Delaware Secretary of State. According to Romano (1985), reincorporating in a different state is often motivated by major organizational changes such as IPOs. At the time, Delaware was already a coveted paper geography. In particular, it offered a sophisticated corporate code as well as “the most comprehensive body of case-law ... afford[ing] firms greater predictability of the legal outcomes of their decisions, facilitating planning and reducing the costs of doing business” (Romano 1985, 280).

Following a successful IPO in 1999, GS became heavily involved in the securitization of residential and commercial mortgages. Between 1999 and 2006, the bank was one of the ten largest issuers of MBS worldwide, with \$492 billion of MBS earning \$528

million in revenues (Dealogic). In addition to its underwriting activities, GS expanded its relational geography by lending billions to mortgage originators, primarily the subprime lenders Ameriquest, Long Beach, Fremont, New Century, and Countrywide. According to the Financial Crisis Inquiry Commission (FCIC 2011), between 2004 and 2006 GS further bought back \$53 billion worth of mortgages from subprime lenders to securitize and sell them off to clients. Finally, GS was an active player in market-making and held significant positions on its own account in MBS and collateralized debt obligations (CDOs).

There is a lesser known paper arbitrage that propped up this securitization and trading boom. From the late 1990s onward, many investment banks started setting up industrial loan companies (ILCs) to finance their mortgage origination activities. Unlike other depository institutions, ILCs had the advantage of being able to offer FDIC-insured accounts yet remain free from federal supervision—ILCs were exempted from the Bank Holding Company Act of 1987. Launched in the early 1900s, ILCs were intended to be small, state-chartered organizations making uncollateralized loans to low-income workers who could not access financing otherwise.

Throughout their existence, ILCs have remained confined to a short list of states including Utah, California, Nevada, Colorado, Minnesota, Indiana, and Hawaii. Although the scheme has remained relatively small, it has spurred much controversy, because ILC status allows nonfinancial companies to own a banking subsidiary—a loophole at odds with a long-standing tradition to keep commerce and finance separate in the United States (Clark Neely 2007). Interestingly, there has been little debate around financial companies owning and operating ILCs. Yet, right at the time when an increasing number of commercial banks and mortgage providers began to exploit the so-called subprime mortgage market, the scheme attracted many soon-to-become problematic investment banks, including Lehman Brothers and Merrill Lynch. GS set up its own ILC, Goldman Sachs Bank USA, in 2000 in Salt Lake City, Utah.

By 2006 there were sixty ILCs in operation in the United States with a total of \$120 billion in assets, 90 percent of which were in Utah. Merrill Lynch Bank USA, the largest ILC at the time, held \$67

billion of assets (Clark Neely 2007). FDIC filings reveal that although Goldman Sachs Bank USA had humble beginnings—up until March 2005, it held less than \$25 million of assets—by the end of 2006, its assets ballooned to \$12.7 billion. At that point, the vast majority consisted of trading account assets and repurchase agreements on treasury bonds, the proceeds of which were mostly used to purchase riskier securities. Loans, on the other hand—the intended core business of ILCs—accounted for less than 4 percent of its total assets.

Up until 2007, GS's labor force in Salt Lake City remained negligible, despite its ballooning balance sheet—in December 2006, GS's ILC had only eight full-time employees, according to a report submitted to the FDIC. A 2013 interview of David Lang (GS Utah boss) in *The Salt Lake Tribune* reveals how in its first years, the broker-dealer's Salt Lake City capabilities were primarily relational, limited to a small client service operation dedicated to support a new online brokerage business. Badly hit by the dot-com bubble, it never took off and instead pivoted toward a technical orientation, aimed at supporting private wealth operations. In particular, the office capitalized on its Portuguese-speaking staff to specialize in building software for its private wealth management operations in Brazil. As emphasized by a number of interviewees, foreign language skills in Utah are relatively high. This is largely a product of the strong local presence of the Church of Latter-day Saints (also known as the Mormon church). Indeed, Latter-day Saints missionaries are often tasked to learn a foreign language to support assignments abroad (IP_03, IP_04, IP_06, and IP_14).

Overall, the mismatch between asset growth and low employment numbers suggests the ILC scheme laid the regulatory grounds for GS, and other too-big-to-fail banks, to run FDIC-insured shell companies, exempt from federal supervision, for the booking of financial assets that had little to do with consumer loans for low-income workers—a legal artifact characteristic of other brass-plate paper geographies such as offshore financial centers. Interestingly, although the FCIC (2011) report mentions the role ILCs played in the manufacturing of subprime securities, it never criticizes or questions the scheme, nor does it highlight the rapid growth and concentration of investment-bank-run ILCs in Utah prior to the crisis.

The period was also marked by GS's first large-scale nearshoring experiment. We interviewed a site

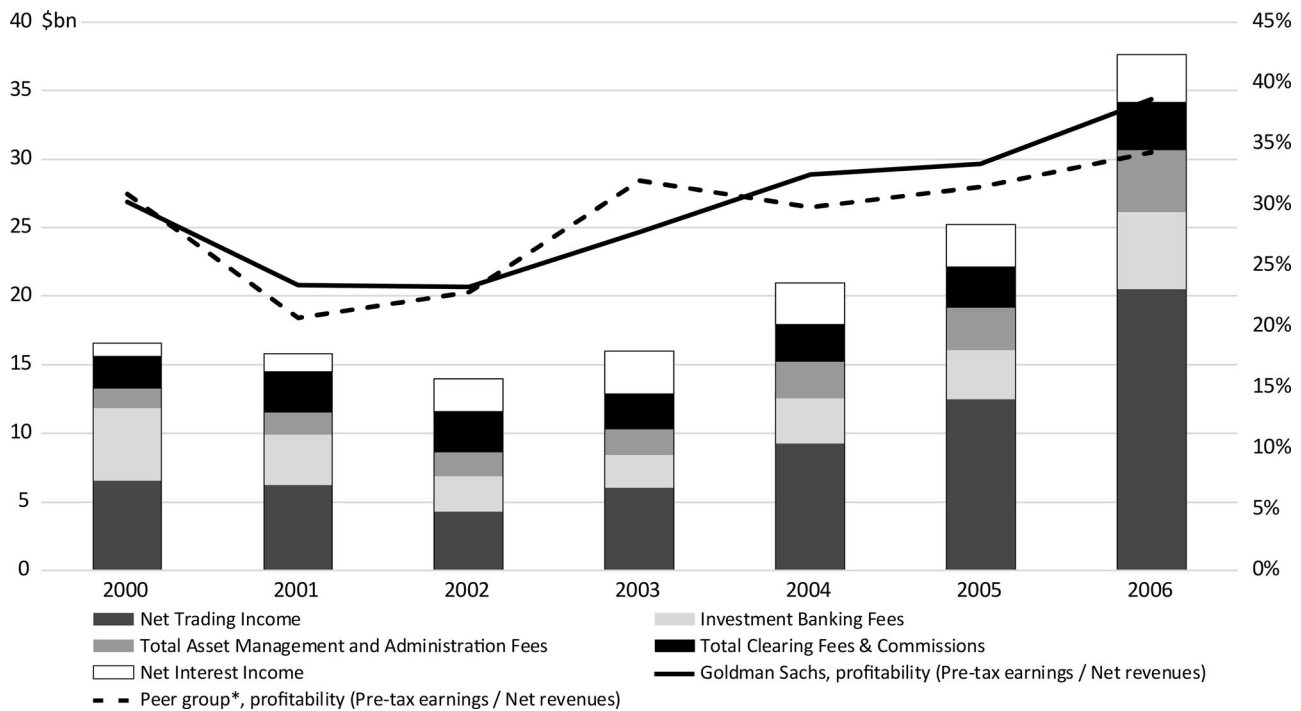


Figure 2. Goldman Sachs revenue breakdown and profitability against peer group (JPMorganChase, Bank of America, Citigroup, Morgan Stanley, Lehman Brothers, and Merrill Lynch), 2000 to 2006. *Source:* Authors' calculations based on annual financial statements.

selector commissioned to run a survey for GS in the late 1990s to find a cost-effective location to move some of the firm's New York-based technical workforce. After recommending Salt Lake City for its large, specialized yet inexpensive labor pool, he recalled management's response: "Are you kidding? Going out to Mormon country ... are you nuts?" (IP_10). At the time, it appears the New York firm preferred the culturally and geographically proximate Jersey City—as we will see, the preference was short-lived.

In 2004, GS completed 30 Hudson Street, a forty-story back-and-middle-office building in Jersey City, New Jersey. When the project was approved by the planning commission in 2000, GS offered to move half of its workforce to the new building. By its completion, however, the firm had already set eyes on a development in Lower Manhattan, scaled back its plans, and announced it would only move a quarter of its workforce to New Jersey (Bagli 2007). An ex-employee recalled, "They initially thought of it as cheaper real estate, lower taxes and lower payroll ... but they soon realized that ... New Jersey is still kind of expensive" (IP_03). Throughout this period, GS engaged in a bidding war for tax abatements by

promising jobs to local authorities on both sides of the river. Up until 2007, the firm's operational preference remained tipped in favor of Manhattan, where the firm employed around 9,000 people, compared to 3,500 in Jersey City (Bagli 2007).

By 2007, GS's geographical reach, in terms of both operations and revenues, was limited. Indeed, although GS was already a global investment bank, the bulk of its paper, technical, cyber, and relational functions were domestic and focused on very specific activities. A country head in Latin America recalled, "We were [precrisis] ... extremely U.S.-centric ... and extremely averse to emerging markets volatility" (IP_20). Indeed, between 1999 and 2006, GS derived, on average, 70 percent of its revenues from the Americas. As shown in Figure 2, by the end of this first period, more than half of GS's revenues (55 percent) came from proprietary trading, whereas investment banking and asset management contributed only 15 percent and 12 percent of revenues, respectively. Fueled by rapidly growing trading revenues built on the expanding U.S. real estate bubble, from 2004 onward, GS began to consistently outpace competition in terms of profitability. At that time, like other U.S. broker-dealers, GS relied heavily on

leverage to maximize its profitability. Between 2000 and 2006, its leverage ratio increased from 17:1 to 23:1 and peaked at a staggering 40:1 in 2007 (FCIC 2011). GS's financials were ripe for a meltdown of epic proportions—at this point, a mere 2.5 percent decrease in the value of the bank's assets would have wiped out the whole of its \$35.8 billion of equity capital.

Overall, this first period was primarily characterized by a centripetal shift of the firm's paper geography toward regional financial centers (Wilmington, Delaware, and Salt Lake City, Utah) that offer highly specialized forms of legal and regulatory flexibility with which New York simply cannot compete. On the other hand, centrifugal forces prevailed and kept the firm's relational and technical geographies concentrated largely in and around the Big Apple.

2007 to 2009: Resilience Politics and the Great Unbundling

We had tremendous liquidity through the period, but there were systemic events going on. ... It was a more nervous position than we would have wanted. We never anticipated the government help, we weren't relying on those mechanisms. (Lloyd Blankfein, CEO of Goldman Sachs, in FCIC, 2011, 362)

A decline in U.S. housing prices coupled with record levels of foreclosures at the end of 2006 set off the GFC. As MBS and CDOs plummeted, global credit markets froze and a number of mortgage companies and hedge funds collapsed. Meanwhile, broker-dealers, central actors in the securitization and trading of MBS, wavered (Wilmarth 2009). Early on, what differentiated GS from other broker-dealers and hedge funds was the foresight of its Mortgage Department Structured Products Group. Already in 2006, alerted by a drop in the ABX BBB, a subprime MBS index, GS started reducing its exposure to MBS and CDOs on subprime mortgages. To do so, it used credit default swaps (CDSs) underwritten by AIG to short the subprime market and sold off its MBS and CDOs in the form of structured products to its own clients. The controversial Hudson Mezzanine 2006-1 transaction alone yielded "a gross profit of \$1.7bn at the direct expense of the clients" (Merkley and Levin 2011, 525). From December 2006 to August 2007, GS underwrote and sold a total of \$25.4 billion of CDOs to its clients to reduce its inventory of MBS (FCIC 2011).

In addition, GS relied on some \$20 billion notional value of CDSs underwritten by AIG to hedge its position in subprime MBS. The counterparty risk associated with this position came under scrutiny when AIG lost its AAA credit rating and struggled to post collateral to GS. This led to fears about the financial stability of AIG and, consequently, GS's ability to rely on its CDS hedge. From then on, GS's risk management focus shifted from its own market positions to its counterparties, which it would come to rely on for its financial stability (FCIC 2011).

GS's decision making on the East Coast had resounding repercussions for its Salt Lake City operations, particularly from the last quarter of 2007. As shown in Figure 3, in six months, GS's ILC's assets jumped by another \$10 billion—these primarily included repurchase agreements on treasury bonds (\$5.3 billion) and trading account assets (\$1.7 billion). Over the course of four quarters (Q4 2007 to Q3 2008) the ILC reported huge net income losses totaling \$1.96 billion, largely attributable to \$2.2 billion trading account losses. These financial results contrast starkly with GS's consolidated financial statements, which reported positive pretax earnings of \$10.9 billion over the same period and suggest the ILC was used to book underperforming assets in the early phase of the crisis. The end of 2007 also marked a turning point in GS's nearshoring strategy, as the firm decided to staff its Salt Lake City office with more than 1,300 people. An ex-employee recalled, "The initial move here [Salt Lake City] was to replace positions that were in New Jersey ... to move operations out here ... like clearing, and some of the transaction process" (IP_03). Seemingly overnight, Salt Lake City became a major back-office operation for GS. In a moment of acute pressure, GS saw an opportunity to implement a major cost reduction strategy by moving a large portion of its workforce to a low-cost location—a move characteristic of the centrifugal forces that shift technical geographies away from IFCs toward second- and third-tier financial centers.

Meanwhile, GS's exposure to other large broker-dealers and the associated counterparty risk became a key concern for the firm, as well as regulators and policymakers in New York and Washington, DC. After numerous meetings in 2007 and 2008 involving leading broker-dealers (including GS), the U.S. Treasury, the Federal Reserve (Fed), and the

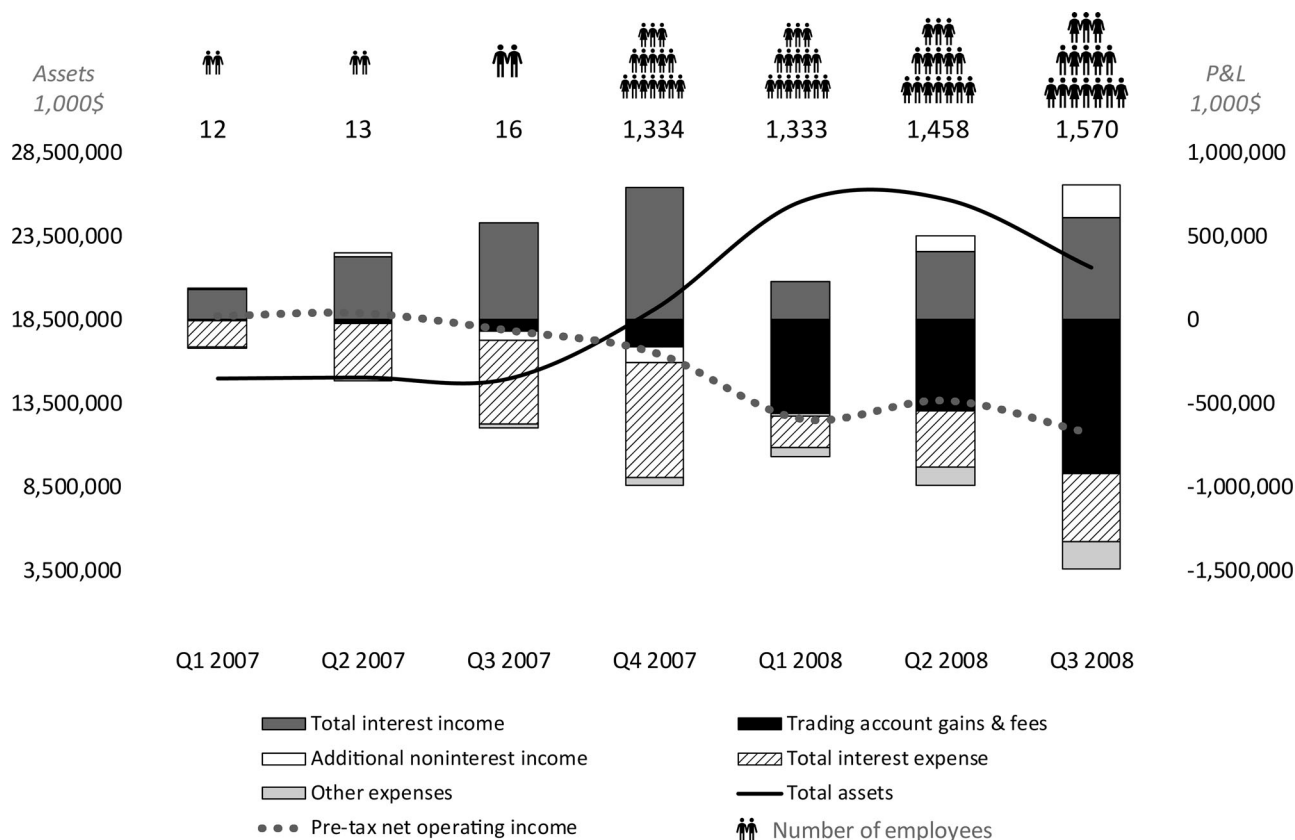


Figure 3. Goldman Sachs Bank USA, Salt Lake City, total assets and net income breakdown, in thousands of U.S. dollars, Q1 2007 to Q3 2008 (Goldman Sachs Bank USA's closure). Note: P & L=profit and loss. Source: Authors' calculations based on Federal Deposit Insurance Corporation data.

Securities and Exchange Commission, political and regulatory elites finally concluded that a failure of one of the large broker-dealers could set off a domino effect leading to the widespread collapse of financial institutions (Ioannou, Wójcik, and Dymski 2019).

Representatives from the U.S. Treasury and the Fed became increasingly active in matchmaking between potential acquirers (large U.S. universal banks) and broker-dealers in financial distress (Davidoff and Zaring 2009). These efforts led to the acquisition of Bear Stearns by J. P. Morgan, Merrill Lynch by Bank of America, and Wachovia by Wells Fargo. As the crisis deepened in September 2008, Lloyd Blankfein, GS's CEO, reportedly called Vikram Pandit, Citigroup's CEO, to discuss the possibility of Citi taking over GS, a proposition Pandit rejected at once (Alloway 2008). The story underscores the sense of urgency among Wall Street giants to find strategic solutions to weather the crisis.

Attempts to find an acquirer for Lehman Brothers failed and the firm filed for Chapter 11 bankruptcy

protection on 15 September 2008. The news set off a sharp drop in investors' and creditors' confidence and propagated fears about the financial stability of Morgan Stanley and GS, the largest broker-dealers at the time (Sorkin 2009). The Lehman Brothers bankruptcy led to major outflows from hedge funds. In turn, in an effort to regain liquidity, hedge funds started withdrawing funds from their brokerage accounts with investment banks. Coupled with difficulties accessing short-term financing in money markets, it precipitated the fall of GS's liquidity pool, which went from \$120 billion to \$57 billion in the week following Lehman's bankruptcy (Sorkin 2009).

GS's precarious financial position and mounting counterparty risks pushed the firm to rely on its relationships with U.S. government agencies. Although there is no conclusive evidence that GS received preferential treatment from U.S. government agencies, it is clear that the firm enjoyed privileged relationships with their representatives in New York as well as in Washington, DC, the country's two main hotspots for regulatory capture in finance. Henry

Paulson, the U.S. Treasury Secretary and a key figure in bailout negotiations, was GS's CEO until 2006. Paulson's close connections to Wall Street and GS's dealings gave him a unique perspective on what was to unfold when he took office in 2006. The financial crisis inquiry revealed that, by the time Paulson assumed public office, he was already well aware of the widespread circulation of bad loans. In his own words, "Most of the toothpaste was out of the tube ... and ... there really wasn't the proper regulatory apparatus to deal with it" (FCIC 2011, 142).

In fact, much of Paulson's efforts were directed at circumnavigating his limited powers. At the height of the crisis, Paulson was granted an ethics waiver allowing him to engage in meetings with GS's executives to discuss contingency plans (Sorkin 2009). Paulson actively lobbied for emergency powers to use public funds to rescue failing nonbank financial institutions, including systemically important broker-dealers.

It's very frustrating to feel a great sense of responsibility to act and not have the emergency powers you need, and to know that you can't get them from Congress. For a long time we knew that if we went to Congress and tried to get emergency powers and failed we would precipitate the crisis we were trying to prevent. (Henry Paulson, quoted in interview with Cohan 2018)

In these testing times, economic and political elites argued that saving the financial system was paramount to the financial stability and economic resilience of the country; it meant no less to GS. Starting in 2008, a succession of bailout facilities was put in place. Looking back, Felkerson (2011) estimated that close to \$29 trillion in bailout funds was dispensed to stabilize the financial system. Although the majority of funds were provided to alleviate pressures in credit and money markets by using market mechanisms, swaths of public money were also spent to bail out specific institutions that, allegedly, posed systemic threats.

Early emergency facilities included the Primary Dealer Credit Facility, which offered overnight loans of cash in exchange for collateral, and the Term Securities Lending Facility, which functioned as an extension of the Fed's Treasury lending program. In the week following the Lehman Brothers bankruptcy, GS accessed \$5 billion from the Primary Dealer Credit Facility and \$13.5 billion from the

Term Securities Lending Facility to increase its liquidity pool. This was followed by a strategic investment of \$5 billion from Berkshire Hathaway. Throughout the remaining months of 2008, GS would keep resorting to the Fed's emergency facilities (FCIC 2011). Paulson kept collaborating actively with Ben Bernanke, the chairman of the Fed, and Tim Geithner, the chairman of the Federal Reserve Bank of New York to find a way to address their concerns over the liquidity and survival of GS and Morgan Stanley. On 21 September 2008, they approved an immediate transformation of both firms into bank holding companies to give them access to emergency lending facilities available to commercial banks. An individual close to Utah industry leaders, regulators, and policymakers recalled:

When the crisis hit ... they said: "If you want access to the Troubled Asset Relief Program [TARP] ... you have to become subject to the Fed." And so, [GS] said: "Well, now that we're subject to the Fed because we took the TARP, it doesn't do us any good to be in Utah as an industrial bank, we might as well go get a commercial bank in New York." (IP_14)

On 26 September 2008 GS's ILC was converted to a commercial bank. A week later, on 3 October 2008, U.S. President George W. Bush signed the TARP into law, giving the U.S. Treasury the authority to stabilize financial institutions by purchasing their toxic assets (FCIC 2011). As a result, troubled financial institutions could offload illiquid and hard-to-price assets (including MBS and CDOs) from their balance sheets and regain liquidity. GS received \$10 billion of the \$700 billion authorized by Congress for TARP. It further benefited indirectly from TARP by trading AIG's stock on its own account to bet on the insurer's government rescue (Rushe 2011). A total of \$180 billion of TARP monies was allocated to asset repurchases aimed at preventing the failure of AIG. As the FCIC report reveals, GS was one of AIG's largest counterparties, in terms of both lending and CDS, and has been paid \$4.8 billion for lending commitments and \$14 billion for CDS obligations from the rescue financing received by AIG (FCIC 2011).

Although GS worked hard to remain free of government shackles and appear as self-reliant as possible—as Lloyd Blankfein's statement introducing this section illustrates—there is little doubt that, in the critical phase of the crisis, GS's fate came to rest on public institutions. In fact, using data collected by

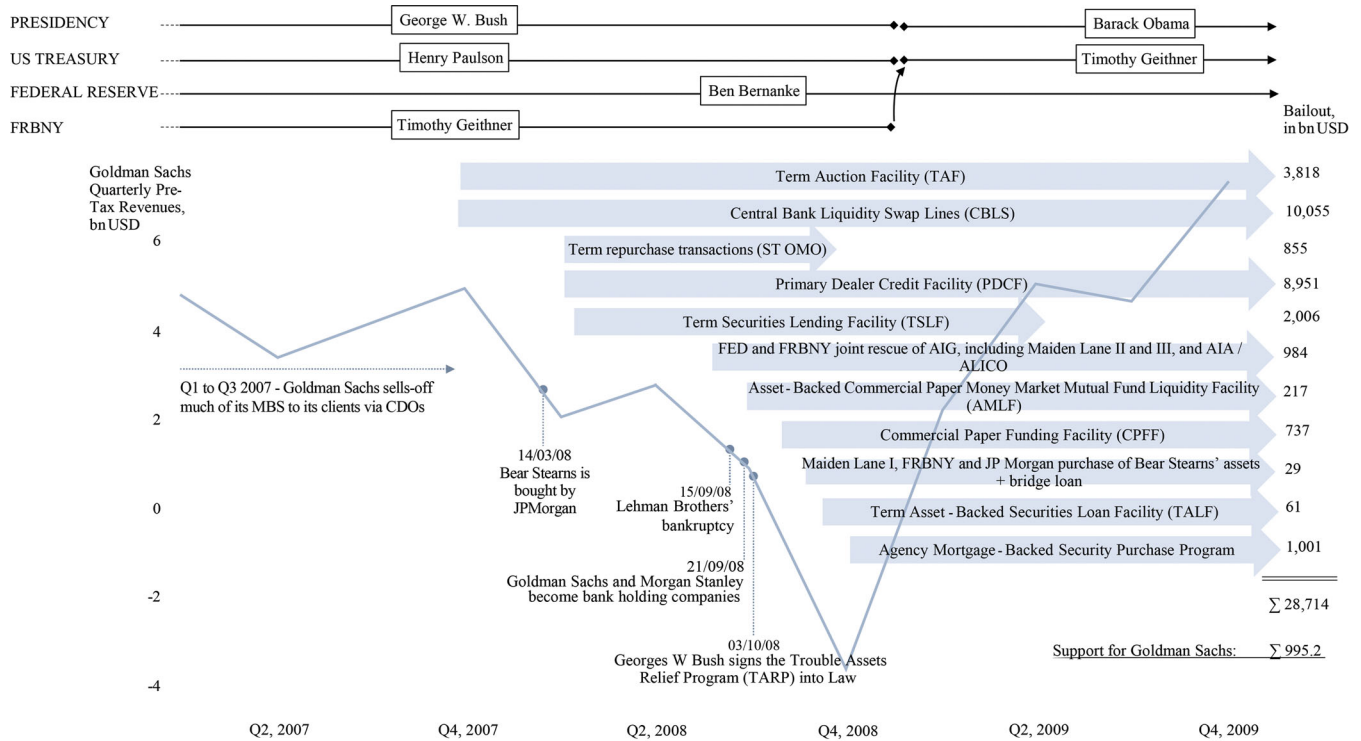


Figure 4. Goldman Sachs and the global financial crisis. *Note:* MBS = mortgage-backed securities; CDOs = collateralized debt obligations. *Source:* Authors' calculations based on Felkerson (2011) and Financial Crisis Inquiry Commission (2011).

Felkerson (2011), we estimate that GS was the eighth largest corporate recipient of government help with \$995 billion. Figure 4 provides an overview of how GS weathered the crisis by overlaying a timeline of salient stakeholders, GS's quarterly revenues, and the bailout facilities it accessed (note that the figures are based on consolidated financial statements that do not cover the ILC's financial results).

In 2009, GS moved to its new \$2 billion headquarters facing the Hudson River at 200 West Street in Manhattan. Interestingly, "the name of the firm appears nowhere on the exterior, or in the lobby, or even on the uniforms of the security personnel or the badges given to visitors ... the Goldman building appears to have been designed in the hope of rendering the company invisible" (Goldberger 2010). Although investment banks do not need to advertise themselves to retail customers on the street, the firm's efforts to hide in plain sight in the aftermath of the crisis seem symptomatic of the reputational damages it endured.

In fact, GS's presence on the East Coast, the epicenter of the financial crisis, shrunk significantly in its aftermath. Whereas GS's Jersey City operations never took off to the extent local policymakers had hoped for, their presence in Salt Lake City saw rapid

growth. GS's nearshoring experiment in Utah turned into a firm commitment right after the financial crisis. In 2009, Gary Herbert, who centered his economic development plan on corporate tax breaks, was elected governor of Utah. The same year, GS signed a deal worth \$47.3 million in tax rebates over the following twenty years in exchange for committing to invest \$51 million, maintain a local workforce of at least 1,065 employees, and keep their wages at 50 percent above the average wage in Salt Lake City County (LaCapra and Wachtel 2012). The employment commitments were met and exceeded as Salt Lake City became GS's number two U.S. office. In a remarkably short period of time, Salt Lake City transitioned from an offshore paper hub to a major back-office technical operation.

2010 to 2017: Regulatory Capture and Corporate Reorganization

The acute phase of the crisis was followed by a regulatory rollercoaster. In Washington, the Obama administration, which came into power in January 2009, was quick to the task. Within six months, several bills aimed at reforming the financial sector

were sent to Congress. These bills would later become part of the promising and eventually controversial text known as the Dodd–Frank Wall Street Reform and Consumer Protection Act. In 2010, after signing the new law, Barack Obama announced, “These reforms represent the strongest consumer financial protections in history. ... The American people will never again be asked to foot the bill for Wall Street’s mistakes. There will be no more taxpayer-funded bailouts. Period” (Administration of Barack H. Obama 2010, 2). The objective of the new law was ambitious: “to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end ‘too-big-to-fail,’ to protect the American taxpayer by ending bail-outs, to protect consumers from abusive financial services practices, and for other purposes” (Dodd–Frank Wall Street Reform and Consumer Protection Act 2010, 1).

The financial sector reacted swiftly by fighting every word of Dodd–Frank’s 2,300 pages. At this stage, the freshly ratified law was still “a skeletal structure with few affirmative commands ... heavily dependent on administrative implementation” (Coffee 2012, 1065). The industry attacked it vigorously and with much success. The watering down of the regulatory project entailed a process of attrition led by Wall Street–sponsored lobbyists and facilitated by the revolving door of U.S. politics. According to the Center for Responsive Politics, the securities and investment industry’s lobbying efforts peaked precisely in 2010. The same year, GS, the sector’s largest contributor to corporate lobbying over the last two decades, increased its lobbying spending by 63 percent compared to the year before. GS’s lobbying firepower was further aided by its unique relationship with public institutions. Besides Paulson, the Center for Responsive Politics holds records of forty-seven individuals who have held positions at GS and as legislators or regulators, a record number for the industry. Although the actual sway of GS’s revolvers is difficult to assess, there is little doubt over the firm’s extensive and influential network in political and corporate spheres (see DealBook 2017).

The Volker Rule, one of the central pieces of Dodd–Frank intended to address the too-big-to-fail problem, was subject to significant alterations to the benefit of banks. Leaving the problem of bank size unaddressed, the rule was instead designed to avoid

bank failures by constraining their risk-taking (Whitehead 2011). In negotiations on the final version, Treasury Secretary Tim Geithner and Senator Chuck Schumer (New York) were instrumental in offering banks further leeway to keep their proprietary trading activities at 3 percent of tier one capital. Incidentally, Geithner has built strong ties with industry by hiring numerous top Wall Street bankers to work for him at the Fed. Notably, he hired GS’s ex-chief economist William Dudley in 2007 to run the Fed’s trading floor. Dudley eventually succeeded Geithner as the head of the Federal Reserve Bank of New York in 2009 when Geithner was appointed to replace Paulson as the head of the U.S. Treasury (see Figure 4).

To corroborate these findings, we sourced time series of key governance indicators on GS and its peers from TruValue Labs (TVL), a financial technology firm that offers corporate sustainability ratings on a range of environmental, social, and governance (ESG) issues for more than 16,000 companies. These ratings are predominantly purchased by institutional investors (pension funds or insurance companies) and other financial institutions that use insights from nonfinancial data to enhance the financial and sustainability performance of their investments. TVL is based in San Francisco and was recently acquired by FactSet. TVL’s ESG scores are constructed by mining vast amount of unstructured data across 120,000 sources, including news media, scientific journals, nongovernmental organization research, and trade blogs. These sources are analyzed in real time using natural language processing to identify information pertinent to twenty-six ESG subdimensions. Here we focus on how GS scores relate to its investment banking and brokerage peers, as well as against a smaller sample of bulge bracket investment banks, focusing on two dimensions, namely, regulatory capture and systemic risks. The dimensions are defined by the Sustainability Accounting Standards Board (2020) as follows:

Regulatory capture ... addresses a company’s level of reliance on regulatory policy or monetary incentives, actions to influence industry policy, overall reliance on favorable regulatory environment for business competitiveness, and ability to comply with relevant regulations. Systemic risks ... address the company’s contribution to, or management of, systemic risks resulting from large scale weakening or collapse of systems upon which the economy and society depend.

The results are presented in Figure 5.

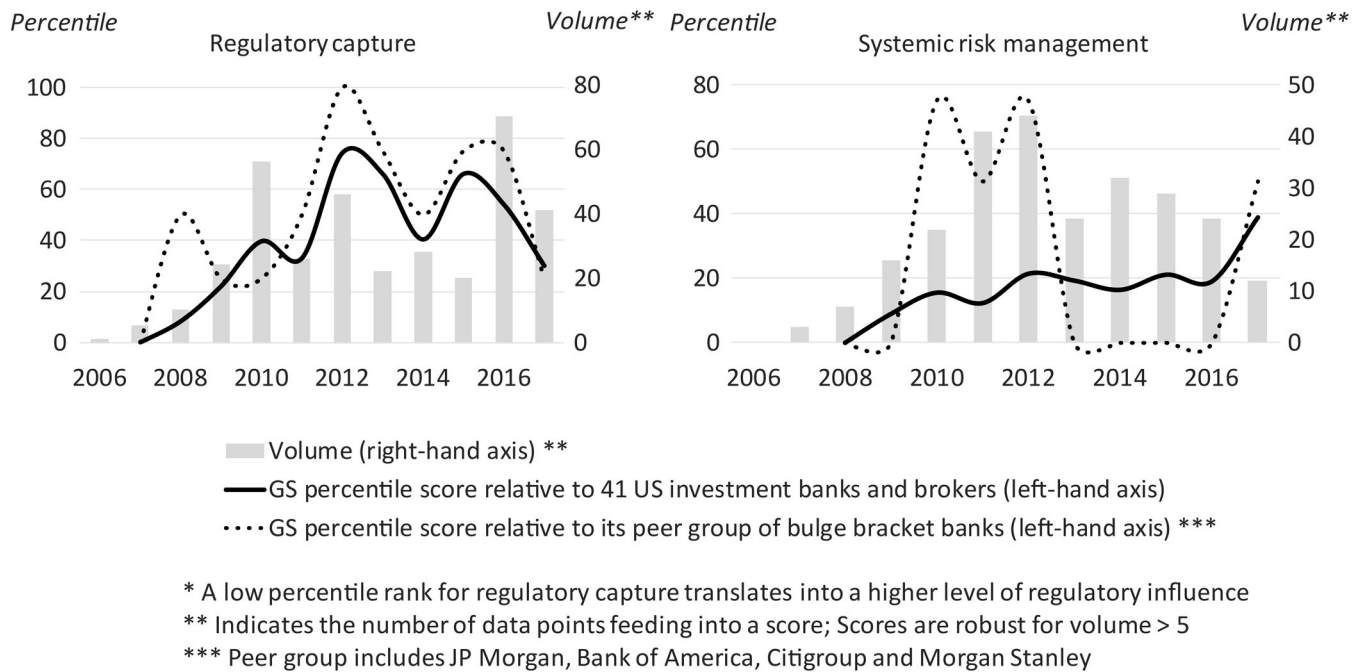


Figure 5. Goldman Sachs's relative performance on two key governance indicators, 2006–2017. *Source:* Authors' calculations, based on TruValue Labs.

Overall, we find that GS exercised more influence on regulation before the crisis and that this tapered off consistently afterward as shown by the improvement of its regulatory capture score. A similar pattern emerges across both indicators: In governance terms, GS was clearly an industry laggard in the years leading up to the financial crisis and improved markedly afterward. In particular, in 2007, GS's ranking in terms of regulatory capture and systemic risk management was at rock bottom, whether measured against a peer group of dozens of investment banks and broker-dealers or against a smaller peer group of bulge bracket firms. Although the low standing of GS in terms of regulatory capture was a clear problem from a societal and systemic point of view, it most likely meant the opposite for the firm's resilience as it translated into an increased capacity to influence crisis policy and regulatory responses to its advantage. In the years following the crisis, GS showed considerable improvement and raised its governance profile to reach the middle of the pack on both indicators.

Although Wall Street won numerous regulatory battles, banks including GS had to adjust to new constraints. In particular, to comply with newly enforced regulation, GS had to significantly reduce its leverage. In two successive rounds, in 2008 and 2009, GS raised \$11.5 billion in new equity capital and reduced

its leverage threefold compared to precrisis levels (S&P Global 2019). Despite stricter capital requirements and the end of the golden era of trading, GS has managed to maintain solid revenues through a number of strategic organizational and geographical changes. In particular, to compensate for falling revenues from trading (down 48 percent between 2009 and 2017), its investment banking and asset management divisions delivered strong results (up 48 percent and 37 percent, respectively since 2009). Despite the correction, revenues from trading still largely outweighed other revenue sources in 2017.

Following the crisis, the group underwent a significant reorganization of its personnel expenses. Employment data suggest that although the bank remains a labor-intensive firm, the nature of work at GS has undergone notable changes reflective of the bank's strategic repositioning as well as broader transformations in financial service provision. As Figure 6 shows, between 2009 and 2017 the number of GS's full-time employees increased by 13 percent, while total personnel expenses declined by 27 percent.

According to GS's annual reports, the increase in headcount largely reflects an increase in regulatory compliance needs postcrisis. On the other hand, improvements in "operating efficiency" were achieved "through a combination of shifting to a greater percentage of junior employees and

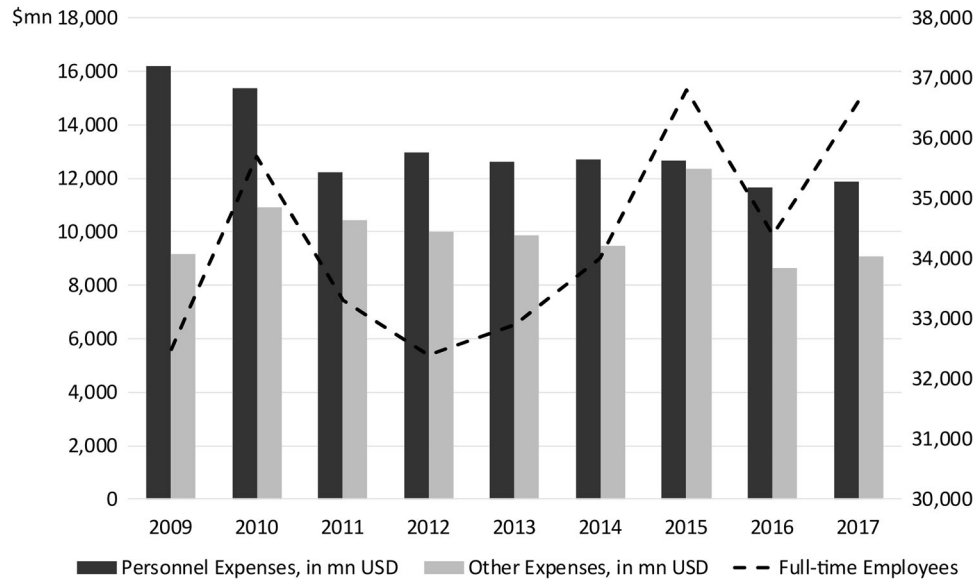


Figure 6. Goldman Sachs's expenses and full-time employees, 2009–2017. *Source:* Goldman Sachs annual statements.

relocating [some of GS's] footprint to lower-cost locations ... such as Salt Lake City, Dallas, Irving, Warsaw, Singapore and Bengaluru" (GS 2015, 3), which now host a quarter of GS's workforce (further emphasized by IP_21 and IP_22). This centrifugal reorganization was described by Urban (2018) in asset management where revenue compression in the aftermath of the financial crisis pushed many to experiment with new ways to lower their domestic personnel expenses. Rather than reducing headcounts through layoffs, asset managers and banks alike have begun to spatially reorganize their workforce toward lower cost domestic locations. As a result, the postcrisis geography of technical finance workers has shifted away from leading financial centers toward second- and third-tier cities. A former employee of GS who worked at the Salt Lake City office from 2008 onward recalled:

The real push happened right after the financial crisis ... they understood that they need to cut costs, but they couldn't really lay off ... because the operations would pretty much stop. ... So ... [the head of Salt Lake City] ... he moves his Operations Managing Director here ... and ... the Operations Department ... they were moving people from New York and then they could actually have local talent [from Salt Lake City] to support the junior positions. Amongst other things that were very present in New Jersey was technology. And here [Salt Lake City], there is a good supply of ... technology talent, so it made sense to build up the technology presence here. Even if they had

to ship people from California, they could keep their salaries. ... It buys so much more here [Salt Lake City]. (IP_02)

By 2013, the bank's Salt Lake City office employed 1,775 people across nine of its eleven global divisions: finance, compliance, global investment research, human capital management, investment banking, investment management, operations, services, and technology (Beebe 2013). Besides cost-cutting, the postcrisis geographical reorganization of GS's operations toward Salt Lake City can be explained in light of the bank's strategic reorientation away from trading and toward cyberintensive activities (IP_01, IP_03, IP_19). First, asset management, which accounts for a growing share of GS's revenues (18.2 percent in 2017 compared to 12.0 percent in 2006), is undergoing technologically driven transformations that are putting pressure on revenues and gradually substitute human capital with cyberinfrastructure (Haberly et al. 2019). Rather than simply replacing workers with machines, asset management is undergoing a qualitative shift in labor, where star performers who typically commanded high compensation packages are replaced by star algorithms and digital platforms that rely on development and maintenance staff. The latter are increasingly found in nontraditional financial centers that offer large pools of cheap and tech-savvy workers. Meanwhile, executive functions remain firmly anchored in New York:

If I need to approve a trade of larger size, I need to go to New York because the credit officer who has the capacity to approve such a trade sits in New York. The fact that we depend a lot on New York makes it necessary to actually learn the culture, if you want to get something approved, if you want to get something done. (IP_19)

Second, since the crisis, GS is increasingly leaning toward cyberintensive banking activities that also require a qualitatively different kind of workforce (for an earlier account of the evolutionary path of retail banking, see Leyshon and Pollard 2000). In 2016, GS launched Marcus by Goldman Sachs, an online retail bank named after Marcus Goldman, who founded GS in 1869. The platform was launched in, and is operated from, Salt Lake City. By 2017, GS reported serving 350,000 online retail customers across loans and deposits. The online bank held \$17.1 billion of personal deposits and issued \$2.3 billion of personal loans. “Consumers are moving away from brick-and-mortar branches to solutions that use technology to more seamlessly meet their needs” (GS 2017, 5). In August 2019, GS partnered with Apple to launch the Apple Card, issued to customers by the Salt Lake City office.

As we have seen, the appeal of Utah to GS is relatively long-standing and multifaceted. The scope and scale, as well as the quality-to-cost ratio of its financial and technology workforce, however, seem to be what tipped the scale in favor of the state in the years following the crisis. These labor market advantages can be attributed to Utah’s remarkably strong university ecosystem for training technology (particularly computer sciences) and business graduates. On one side, the University of Utah runs a very strong technology program. In 2010, it overtook MIT to become the leading U.S. higher education institution in startups creation. It was also key in the genesis of the Silicon Slopes—Utah’s take on Silicon Valley. On the other side, Brigham Young University has an excellent track record in business management and finance programs. In fact, in the decade following the crisis, Brigham Young University became the largest U.S. supplier of graduates to GS (IP_03, IP_04, IP_13, IP_16), while the bank closed its Princeton office in the same period.

To consolidate the bank’s commitment to Utah, GS held its 2013 annual shareholder meeting in Salt Lake City—the first one to be held outside of New York City since the company went public in 1999.

Recall that GS’s bank was then actually headquartered in, and regulated by, New York State rather than Utah. This first Salt Lake City shareholder meeting was attended by Utah’s Governor Gary Herbert, once again stressing the strong ties between GS and key policymakers. At the meeting, Lloyd Blankfein addressed the release of a report detailing thirty-nine recommendations to improve GS’s business practices on issues pertaining to the bank’s employees’ incentive schemes, client services, and financial products. Interestingly, one of the shareholder proposals voted down on the day was a request that GS publish a detailed report on its lobbying policies and expenditures (Beebe 2013).

Conclusions and Implications

In this article, we proposed a financial geographical framework to critically enhance the study of resilience. Fundamentally, our findings tease out an all-too-often neglected yet central question of boundaries in accounting for resilience: Whose resilience are we talking about? Can a firm or an entire industry be called resilient if its survival plunges millions of households into austerity? What are the mechanisms that allow power asymmetries to materialize in such a way? Building on prior work on global financial networks, we argued that financial firms are increasingly and dynamically unbundling their tasks and functions to reap relational, technical, paper, and cyber advantages across distant locations. This new networked spatial organization of financial service provision has raised the profile of a number of second- and third-tier cities that now compete globally as specialized financial centers. Meanwhile, first-tier IFCs are increasingly hollowed out of their labor and infrastructural substance, yet preserve their dominance by retaining key command-and-control functions. In resilience terms, we suggested that financial firms engage in spatial arbitrage to respond and adapt to shocks with direct implications for the resilience of financial centers. Finally, we emphasized the importance of regulatory capture in firms’ response and adaptation to shocks—an element understudied in resilience literature (Bristow and Healy 2015).

Empirically, we offered a case study of GS’s financial geography spanning two decades to illustrate how our framework can be mobilized in resilience studies. Building on Martin and Sunley (2015), we

divided our analysis into three key time periods centered around the GFC. In the first period (1999–2006) we assessed GS’s “vulnerability and exposure,” as well as its own contribution to the GFC. Besides describing the firm’s staggering financial leverage and relentless packaging and trading of MBS, we centered our analysis on GS’s paper and technical arbitrage. First, we unveiled the broker-dealer’s use of Utah’s Industrial Loan Companies scheme to run an FDIC-insured shell company to book financial assets unencumbered by federal supervision. Second, we described GS’s timid nearshoring experiment across the Hudson River in Jersey City—a move characteristic of the firm’s East Coast-centrism at the time.

In the second period (2007–2009), we focused on GS’s reaction to early signs of weaknesses in the MBS market and the unprecedented financial instability that followed the bankruptcy of Lehman Brothers. We provided detailed empirical evidence of the political underpinnings of the U.S. government’s crisis response, emphasizing GS’s deep relations with public officials in key regulatory hotspots, particularly in Washington, DC, and New York City. Although the firm has made every possible effort to distance itself from the idea that it was bailed out, we showed that it was one of the largest recipients of government aid. In exchange, the firm had to subject itself to federal supervision, rescind its Utah bank, and open a commercial bank in New York. Interestingly, the character of Salt Lake City as a financial center thus changed from a paper to a technical, back-office center, soon to overtake Jersey City and become the bank’s second largest U.S. office.

Finally, in the third period, we analyzed GS’s post-crisis recovery. We demonstrated that in the aftermath of the crisis, GS was one of the leading actors fighting tooth and nail the reregulation of the U.S. financial sector. Although GS did not come out of the crisis unscathed or unchanged, our analysis suggests that its recovery is as much due to its ability to adapt to a changing environment as it is to its capacity to shape it. Indeed, governance data suggest that in the buildup to the GFC, GS combined one of the worst performances in systemic risk management and a remarkably poor regulatory capture record. In the years immediately following the crisis, GS capitalized on its powers to not only navigate but tame what Coffee (2012) aptly coined a “Regulatory Sine Curve”—“a cycle driven by the differential in

resources, organization, and lobbying capacity that favors those interests determined to resist further regulation” (1078–79). Ultimately, our study suggests that in contexts characterized by high power asymmetries, resilience might be more about a system’s capacity to deflect shocks than to absorb them.

Nonetheless, GS has also shown its capacity to alter its business model to adapt to the shock of the GFC. At time of writing this article, the firm operates an extensive network of sixty-one offices spanning leading as well emerging financial centers. Although New York remains the command center of the firm, its importance in terms of employment has markedly declined to the benefit of other locations (see also Wójcik and Cojoianu 2018). This great unbundling has allowed the firm to achieve major operational efficiency gains. The GS office network now regroups a number of small to midsize offices that operate as relational anchor points within specific regions. Examples include West Palm Beach, Florida; Santiago, Chile; and Auckland, New Zealand. It also includes a growing number of larger satellite offices tasked with providing technical support to headquarters as well as regional and global operations. The unbundling of GS’s East Coast operations (Manhattan and Jersey City) toward Salt Lake City epitomizes this new agile and networked geography of financial firms. Indeed, in less than twelve months, to respond and adapt to an unprecedented shock, GS’s Salt Lake City office pivoted from a brass-plate offshore office into the firm’s second largest U.S. operation. Although we have begun to tease out a set of unique cultural, economic, and regulatory characteristics that might help explain the rise of Salt Lake City as a leading regional financial center, we believe the city offers a unique opportunity for further research—many of our interview partners stressed that Utah’s ILC status is now attracting a lot of interest from financial technology companies.

Although our analysis is largely focused on the Americas, our interview partners suggested this new spatial configuration is being replicated in other regional contexts. One respondent noted:

They’re following the same structure, they moved some of the operations, some of the technology and the creative risk to Warsaw in Poland. Because again it’s a much closer location in terms of control and connectivity available to London. So, Warsaw is to the London office—or maybe to the Frankfurt office in the future [in reference to Brexit]—is what the Salt Lake office is to the New York office. (IP_19)

Bengaluru in India is another interesting case in point. According to GS, it is one of the firm's primary locations—along with New York metropolitan area, London, Hong Kong, Tokyo, and Salt Lake City. Over the last three years, Bengaluru has consistently advertised over 40 percent of the firm's vacancies for technology roles (Efinanicalcareers 2019). As we stressed, cyberinfrastructure and technology talent are set to become exponentially more important to GS's dealings across all of its activities but especially in asset management and online retail banking. In 2017, one-quarter of the GS workforce had a background in science, technology, engineering, or math (GS 2017). Although the financial industry has so far defied predictions of widespread automation, technology is already recasting its geography. This new geography of finance begs for more research.

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ORCID

Michael A. Urban  <http://orcid.org/0000-0001-9305-1568>

Vladímir Pažitka  <http://orcid.org/0000-0001-9097-4375>

Stefanos Ioannou  <http://orcid.org/0000-0003-2042-302X>

Dariusz Wójcik  <http://orcid.org/0000-0003-2158-284X>

Note

1. Our definition of relational specialization extends beyond client interactions to cover interactions where a premium is attached to the ability to interact and transact face-to-face—these can include, inter alia, client interactions and interactions with policymakers, regulators, and lobbyists, as well as key business partners.

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MICHAEL A. URBAN is a Research Associate in Finance and Geography at the School of Geography and the Environment, University of Oxford, Oxford OX1 3QY, UK. E-mail: michael.urban@ouce.ox.ac.uk. His work focuses on sustainable finance, the asset management industry, institutional investors, and investment banking.

VLADÍMIR PAŽITKA is an Assistant Professor in Banking and Finance at the Leeds University Business School, University of Leeds, Leeds LS2 9JT, UK. E-mail: V.Pazitka@leeds.ac.uk. His research covers investment banking networks, international trade in financial services and venture capital, with particular emphasis on financial technology firms.

STEFANOS IOANNOU was a Senior Lecturer in Economics at Oxford Brookes University, Headington Campus, Oxford, UK, at the time this article was drafted. He is now with Oxford Brookes Business School, Oxford Brookes University, Oxford OX3 0BP, UK. E-mail: sioannou@brookes.ac.uk. His major research fields are banking and finance, macroeconomics, economic geography, and political economy.

DARIUSZ WÓJCIK is a Professor of Economic Geography at the School of Geography and the Environment, University of Oxford, Oxford OX1 3QY, UK. E-mail: dariusz.wojcik@spc.ox.ac.uk. His research focuses on finance, urban and regional development, and governance.

Appendix A. Interviews, details, and in-text references.

Interview partner (IP) reference	IP region	IP relation to Goldman Sachs	Interview date
IP_01	North America	Goldman Sach, ex employee, executive, asset management	Mar-19
IP_02	North America	Goldman Sach, ex employee, executive, investment banking	Mar-19
IP_03	North America	Goldman Sachs, ex employee, mid-level management, investment banking	Mar-19
IP_04	North America	Federal government, financial regulation	Mar-19
IP_05	North America	Lobbyist, financial services	Mar-19
IP_06	North America	Management consultant, executive, financial services	Mar-19
IP_07	North America	management consultant, executive, financial services and technology	Mar-19
IP_08	North America	Management consultant, executive, financial services	Mar-19
IP_09	North America	Site selector, executive, financial services	Mar-19
IP_10	North America	Site selector, executive, financial services	Mar-19
IP_11	North America	Bulge bracket firm, executive, investment banking	Mar-19
IP_12	North America	Bulge bracket firm, executive, asset management	Mar-19
IP_13	North America	State chartered bank, executive	Mar-19
IP_14	North America	Industry association, executive, financial services	Mar-19
IP_15	North America	Industry association, executive, financial services	Mar-19
IP_16	North America	State government sub-contractor, executive, financial services and economic development	Mar-19
IP_17	North America	State government sub-contractor, executive, financial services and economic development	Mar-19
IP_18	North America	Academic, urban planning with expertise on New York	Mar-19
IP_19	South America	Goldman Sachs, current employee, executive, regional head	Mar-20
IP_20	South America	Goldman Sachs, current employee, executive, regional head	Mar-20
IP_21	Europe	Goldman Sachs, ex employee, mid-level management, private equity	Jun-18
IP_22	Europe	Goldman Sachs, ex employee, mid-level management, investment banking	Jun-18