

From London to Dubai-Kong: Mapping Geographic Shifts in US Sanctioned Global Financial Networks, 1980-2023

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A growing body of research has sought to understand the impacts of the expanding international sanctions regimes used by the US and its allies to target geopolitical rivals as well as non-state actors. However, we continue to have an incomplete picture of the structure and evolution of the global financial networks used by sanctioned actors for different purposes. This paper attempts to fill this gap by introducing a novel dataset, constructed with support from the UK Governance and Integrity Anti-Corruption Evidence (GI-ACE) program, which integrates data from multiple sources to detail the functions, users, network relationships, and years of formation and sanctioning of more than 10,000 US sanctioned entities. Covering the evolution of network architectures not only after but prior to sanctions imposition, this dataset provides an unprecedented view of the shifting financial structures employed by different types of sanctioned actors between 1980 and 2023. The data suggests that sanctioned Middle Eastern and former-Soviet states, and their associates and proxies, are abandoning their traditional financial hub of London and other western financial centers, while criminal financial networks appear to have moved away from Panama following the Panama Papers leak. Meanwhile Dubai and Hong Kong have emerged as new central hubs in both types of networks, with the “Dubai-Kong axis” increasingly acting as a key international backbone in sanctions evasion strategies. Divergent changes are seen across other types of networks, with non-Iran-linked terrorist financing networks being reconstituted, after 9/11, in peripheral locales across sub-Saharan Africa and the Indian Ocean, while corruption-linked financial networks have remained focused on western financial centers and jurisdictions, including US states and UK overseas territories. These patterns appear to be partly attributable to the changing world map of AML/CFT compliance, but ultimately more strongly driven by the interaction between the international politics of sanctions enforcement and evasion, and the broader logic of global financial network evolution as conditioned by “sticky” complexes of relationships and institutions.

1. Introduction

Recent years have seen the global financial system transformed into an arena for escalating tensions between the US and its allies, and an expanding list of geopolitical rivals as well as non-state actors (Alami and Dixon 2020; Eichengreen 2024; Farrell and Newman 2019; Haberly and Wojcik 2022; Schindler et al. 2024). The most important policy instrument used by the US and allies to exert influence throughout the global financial system, in this context, has been financial sanctions (Drezner 2015; 2021; 2022; Gordon 2019; Hufbauer and Jung 2020). Beyond the underlying actors targeted, these sanctions increasingly encompass the international networks of

entities and associates that facilitate the engagement of actors with the global financial system, and international trading partners (Farell and Newman 2019; Haberly, Garrod and Barrington 2024).

There is an enormous body of research, supported by large-scale original sanctions datasets, on the impact of sanctions on targeted countries (Felbermayr et al. 2021; Graduate Institute 2020; Hufbauer et al. 2007; Hufbauer and Jung 2020; Weber and Schneider 2022). This has produced a general consensus that sanctions, while often imposing heavy economic costs on targeted economies, are more often than not ineffective at achieving their stated political goals (Drezner 2021; 2022; Özdamar and Shahin 2021; Weber and Schneider 2022). Beyond aggregate country-level impacts, there have also been quantitative studies examining the impact of sanctions on international trading and investment relationships and networks, at the bilateral and multilateral levels. These have broadly concluded that sanctions have a strongly negative impact on trade and investment between sanctions sender countries and targets, even while also finding evidence for the systematic diversion of trade and investment relationships sanctions “busting” intermediary countries (Barry and Kleinberg 2015; Chupilkin et al 2023; Haider and Güell 2017; Le and Bach 2022; Özdamar and Shahin 2021; Zheng et al. 2022).

While existing studies have shed light on the general impact of sanctions regimes on global financial networks, no comprehensive mapping has been undertaken to date of the long-term historical geographic evolution of the financial networks constructed by sanctioned actors. The reason for this is that the data needed to construct such a picture is spread around in multiple disconnected databases and documentary repositories, which have never before been systematically integrated together. Above all, we have a severely limited picture of the architecture and evolution of sanctioned financial networks at the *micro*-level of actors, entities, and individuals. Indeed, nearly all research on the impact of sanctions on economic networks has continued to treat states, either individually or multiply, as the basic units of analysis, despite the fact that sanctions have come to be implemented in an increasingly fine-grained, targeted manner, that is largely directed at non-state actors and groups (e.g. terrorist or organized criminal organizations, corrupt officials, etc.; see Gordon 2019). Probably the most systematic micro-level analyses of the global financial networks used by sanctioned actors to date are Chang et al. (2023)—which maps networks of companies and enablers linked to US sanctioned Russian Oligarchs—and Economist (2024)—which provides a detailed look at Iran’s sanctions-evading networks. Both only cover a small slice of the total universe of US sanctioned global financial networks, with the former based on available ICIJ leaked data rather than a comprehensive list of US sanctioned entities, and the latter providing only a relatively brief treatment of Iranian financial networks

The lack of a comprehensive picture of the architecture, function, and historical evolution of the full universe of sanctioned global financial networks, means that we have only a limited understanding of the impact of sanctions on these networks. This creates a weak basis for targeting or enforcing additional sanctions, as well as for more broadly understanding how geopolitical tensions are reshaping the global financial system. Indeed, much of the attention directed at this reshaping of the global financial system by sanctions has been focused on

individual financial centers or jurisdictions rather than the broader networks of relationships within which they are embedded. In this respect, a particularly large amount of attention has become focused, in policy and media reports, on role of the UAE, Hong Kong, and Turkey in Russian and Iranian sanctions evasions strategies (Bloomberg 2023; Economist 2024; Giffiths 2024; Kot 2023; Krylova 2023; Psaledakis and Pamuk 2023)). However, these analyses remain quite fragmented in their analytical scope, with sanctions research more broadly, as described by Özdamar and Shahin (2021), largely subdivided into “incommunicado compartments” based on differences methodological approach, level of analysis, geographic scope, and conceptual framing.

This paper attempts to fill the gaps in our understanding of the architecture and historical evolution of sanctioned financial networks—as used by all US sanctioned actors—by introducing a novel dataset that integrates data from multiple sources to detail the functions, users, network relationships, and years of formation and sanctioning of more than 10,000 US sanctioned entities. By detailing the geographic evolution of network architectures not only following but also prior to sanctions imposition, this dataset provides an unprecedented view of the shifting structures used by all categories of US sanctioned actors between 1980 and 2023. This allows for the impact of sanctions themselves to be comprehensively visualized at both a macro aggregate and micro-actor level.

The analysis of this new dataset reveals that US and allied sanctions have had heterogenous impacts on, and shaped heterogenous adaptive strategies within, the financial networks used by different sanctioned actors. Depending on the intensity and international coordination of pressure placed on particular actors, these adaptive strategies run the gamut from: 1) the *dispersal* of activity to peripheral locales outside of major global financial centers, to 2) the *persistence* of activity within established global financial hubs and structures, and 3) the *centralized relocation* of activity within the core structures of the global financial system, from one set of leading financial centers to another. However, it is this third logic of centralized relocation which has been most prominent in the largest categories of sanctioned network—namely those linked to Iranian and Russian actors. These networks have been shifted around among the upper echelons of top-tier international financial centers, to allow sanctioned actors to bypass politically antagonistic jurisdictions without having to vacate the core structures of global finance altogether. Above all, as sanctioned networks have been pushed out of London, and the West more broadly, they have re-established themselves in *formerly* UK-ruled offshore and other international financial centers, that retain strong relational and institutional ties and congruences with London. Just as they were historically concentrated in London, these relocated networks are strongly centered on an ascendent British post-colonial financial dyad of Dubai and Hong Kong, which define a trans-Asian “Dubai-Kong axis” at the heart of global sanctions evasion.

The remainder of this paper is divided into six sections. The following two sections provide a conceptual overview of the geographic organizational and historical evolutionary logic of global financial networks, and how this is shaped by the overlapping and asymmetrical extraterritorial projection of financial power by both state and non-state actors—from the “world governmental” instrumentalities of the US and its allies, to the “guerilla financial networks” constructed by

actors seeking to circumvent the reach of the former. This is followed by an overview of the methodology used to construct the novel US sanctioned entity network dataset examined here, and discussions of the key structures and historical evolutionary patterns revealed by the analysis of this dataset—at both aggregated global and disaggregated actor and functional levels. The paper concludes with a discussion of the implications of these findings for our understanding of the impact of geopolitical tensions on the evolution of, and going forward the potential integration versus fragmentation of, global financial networks more broadly.

2. Global Financial Networks and World Governments

As described in Haberly and Wojcik (2022), the global financial system can be conceptualized as a networked division of labor—or global financial network (Coe et al. 2014)—involving four key categories of specialized places and actors. Within these networks, *Financial and Business Services (FABS)* firms organize their activities across *Financial Centers*, home to the human and physical infrastructure of finance, and *Offshore Jurisdictions*, which provide specialized legal, regulatory and fiscal environments for the “paper” booking of activities and instruments. Meanwhile *World Governments*, i.e. overlapping state and non-state authorities with global extraterritorial reach, play the indispensable role of backstopping international credit networks, and more broadly regulate and influence global financial networks across national borders.

Together, FABS firms, Financial Centers, Offshore Jurisdictions, and World Governments perform the key complementary functions in the “assembly lines” of global financial production (Haberly and Wojcik 2022). Crucially, these global financial production processes are characterized by a strongly hierarchical, centralizing logic. This arises, in large part, out of the logic of financial informational and transaction-cost reduction (see Oatley et al. 2013). Even in a world connected by information technology, this logic continues to above all operate *geographically* through physical proximity, as manifested in the agglomeration of global financial activity into a handful of dominant centers (Bassens and van Meetern 2015; Haberly and Wojcik 2019; Wojcik 2013). “Global” financial markets are in practice gravitationally compacted into these financial centers by the snowballing relationships between market liquidity and efficiency with increasing market scale, and the constitution of markets in locally embedded institutions and relationships (Haberly and Wojcik 2022; Oatley et al 2013). This same basic centralizing logic of informational and transaction-cost reduction—operating in tandem with strategic tax, regulatory and legal arbitrage—also shapes the “paper” geography of offshore finance, wherein particular activities tending to concentrate in specialized jurisdictions that dominate their respective business lines (Haberly and Wojcik 2022).

These centripetal logics of financial geographic agglomeration operate in conjunction with actor-level centralizing tendencies in both the private and public spheres. In the private sector, competitive segments of financial and business services operate in a close relationship with oligopolistic or monopolistic “platform” segments, which control key relational and informational chokepoints in financial markets (e.g. investment banking), or key institutional standards (e.g. international law and accounting) (Haberly and Wojcik 2019; 2022; Murphy and

Stausholm 2017; Wojcik 2012). These concentration tendencies also resonate with centralizing tendencies in the realm of political power (Farell and Newman 2019; Oatley et al. 2013; Schindler and Rolf 2023; Töpfer 2018). Most importantly, the interaction between financial informational and transaction cost reduction, and the dependence of international credit networks on sovereign backstops—together with the reciprocal dependence of state power on sovereign borrowing capacity—drives an inherently winner-take-all logic of global reserve currency centralization. Within this logic, the national currency of the world’s dominant political and economic power, at any given historical moment, tends to have a centrality in international trade and finance that is disproportionate to the broader power of its issuing state (Cohen 1998; Eichengreen 2024; Farell and Newman 2019; Fried 2023; Helleiner 2014; Haberly and Wojcik 2022; Kindleberger 1986).

This in turn creates powerful mechanisms that can support the global extraterritorial power projection of reserve currency issuers, with United States occupying an overwhelmingly dominant position in this respect since WWII (Cohen 1998; Farell and Newman 2019; Helleiner 2014). Indeed, despite repeated prophecies of decline, the reserve currency dominance of the dollar has remained roughly stable since the 1960s (see figure 4 in Fried 2023). Meanwhile the US has, in recent decades dramatically expanded its infrastructural capabilities for leveraging this reserve currency dominance extraterritorial tool of global regulatory and strategic influence. This has helped the US to pursue a proliferating set of agendas ranging from the curtailing of overseas tax evasion by US citizens; to the worldwide policing of securities fraud, corruption, money laundering, and terrorist financing, to the targeting of US state and non-state geopolitical rivals with sanctions (Caytas 2017; Chang 2003; Cohen 1998; Drezner 2015; Farell and Newman 2019; Gordon 2019; Haberly and Wojcik 2022; Kapstein 1991).

As described by Farrell and Newman (2019), this expansion of globalized US financial power projection capabilities has rested on the cultivation of specific “panopticon” and “chokepoint” mechanisms in global financial networks. Providing the central chokepoint is the routing of worldwide US dollar transactions through a single financial center (New York) and platform dyad (i.e. the private consortium-operated CHIPS, operating in close conjunction with the Federal Reserve-operated Fedwire). This routing of worldwide dollar transactions through US territory and institutions allows the US to claim de facto global jurisdiction over financial transactions in sanctions and other matters, and provides a critical infrastructural mechanism whereby violators can be penalized (and/or pressured into proactive compliance; Abely 2019; Caytas 2017; Drezner 2015; Farell and Newman 2019).

At the same time, the ability of the US to weaponize this US dollar chokepoint hinges on its access to a broader “panopticon” apparatus of global financial surveillance (Farrell and Newman 2019). Since the September 11 attacks, US intelligence and law enforcement agencies have surveilled data from the global financial messaging platform, SWIFT, which serves as the principal international coordinating mechanism for US dollar and other transactions. Additionally, since 2012, SWIFT has been deployed as a secondary “chokepoint” mechanism for enforcing first Iran, and later Russia sanctions (Cipriani et al 2023; Farrell and Newman 2019). More broadly, US panopticon capabilities rest on a global public-private apparatus of anti-money

laundering / countering the financing of terrorism (AML/CFT) compliance and information-sharing, coordinated via FATF. This operates with broader US-bilateral (e.g. FATCA) as well as multilateral (e.g. coordinated via the OECD and BCBS/BIS) mechanisms of international tax surveillance and information sharing, as well as financial regulation. Taken as a whole, this apparatus essentially deputizes worldwide private financial and business services firms as agents of US (and to a lesser extent other governments’) tax, regulatory, law, and sanctions enforcement efforts. Failures to effectively carry out this role are met with severe fines (or other penalties) on firms, and the threat of FATF or OECD grey/blacklisting for jurisdictions (Andreas and Nadelmann 2006; Bean and Wright 2015; De Goede 2012; Emenegger 2015; Haberly and Wojcik 2022; Heng and McDonagh 2008; Sharman 2006; 2009; 2011; Tsingou 2018).

3. The Geography of Guerilla Financial Networks

While the United States exercises unparalleled extraterritorial influence over global finance, this de facto “world government” status is neither rooted in de jure international recognition, nor mutually exclusive with various forms of extraterritorial financial power projection by other state and non-state actors. The US rather sits at the apex of a global financial system permeated by overlapping and interlocking webs of public and private extraterritorial power, constructed by diverse actors. The functional boundaries of states here, both with each other and with private sectors or agencies, are inherently porous and fuzzy. Indeed, the “protection racket” of the state (Tilly 1985), far from Weber’s (1919) “monopoly of the legitimate use of physical force within a given territory,” effectively takes the form of an open-ended sovereign actor network (Chambliss 1989; Glassman 1999; Haberly and Wojcik 2022). These overlapping sovereign actor networks exercise varying levels and modes of globalized authority both directly, through instruments of extraterritorial intervention, and indirectly, through international relationships (De Goede 2012; Farrell and Newman 2019; Goddard 2018; Haberly 2011; 2021; Haberly and Wojcik 2017; Oatley et al. 2019; Töpfer 2018; Rolf and Schindler 2023; Weiss 1997; 2005).

Crucially, these networks of global extraterritorial financial power are organized *asymmetrically* by different actors, in accordance with their own specific capabilities and objectives. This potential for actors to deploy such asymmetrical modalities of financial power projection—which either bypass, or more commonly operate within and through the US (and more broadly western) dominated global financial system—means that even seemingly weak actors can often wield substantial global financial influence (see Haberly and Wojcik 2022). Most such mechanisms operate openly, as represented, for example, by the spread of globalized “state capitalist” institutions centered on new types of state-owned multinational enterprises and investment agencies (e.g. sovereign wealth funds; see Alami and Dixon 2020; Clark et al. 2013; Haberly 2011; Haberly and Wojcik 2017; Töpfer and Hall 2018; Yeung 2004). However, global finance is also increasingly permeated by what can be described as *guerilla financial networks* used by actors who cannot operate openly within the global financial system, and must rather move through it beyond the view of US and other authorities (Haberly 2021).

As with global financial networks broadly, a diversity of state, non-state, and quasi-state actors rub shoulders within these guerilla financial networks, and indeed become largely merged together within them (Haberly 2021; Heathershaw et al. 2023; Siegel 2022). States and non-state actors seeking to circumvent sanctions, or broader international anti-money laundering controls, are largely forced to operate through diverse webs of proxies, intermediaries, and allies (Early 2015; Early and Peksen 2019; Economist 2024; Prelac and de Oliveira 2023; Heathershaw et al. 2023; Kupatadze and Marat 2023; Mallory 2021; Nardelli et al. 2024; Stapczynski et al. 2024). Meanwhile, non-state criminal or terrorist organizations, as well as corrupt elites and their associates, are usually dependent on the patronage or capture of—and are indeed often synonymous with—various state authorities (Byman 2022; David-Barrett 2023; Marenko 2004; Markus 2017; Naim 2012; Shaw 2019; Skerpadas 2001). Crucially, rather than having a fixed definition or structure, the financial networks used by these actors are continuously reshaped by, and in some case effectively created by international efforts to police and curtail their global operation—in accordance with specific (usually US-led) political agendas from the “war on drugs” and “war on terrorism,” to the targeting of US geopolitical foes (Amicelle 2017; Andreas and Nadelmann 2006; De Goede 2012; Drezner 2022). Such efforts push underground international financial activities that were in many cases previously conducted openly, or at least more-or-less freely (Andreas and Nadelmann 2006; Early 2015; Early and Peksen 2019).

The organization of these guerilla financial networks is ultimately shaped by the tension between the imperative to evade the global surveillance and reach of the US and its allies, while continuing to operate within the global financial system. How this tension plays out geographically could potentially take different forms. At one extreme, actors may be forced into strategies of *withdrawal* from the global financial system altogether, or the *dispersal* of financial activities to peripheral locales, despite the disadvantages these entail for their global reach. Conversely, to the extent that they are subjected to ineffective international pressure, targeted actors may employ in situ adaptive strategies that allow them to *persist* in the same financial centers where they have traditionally operated. Finally, in between are intermediate adaptive behaviors, which can be described as *centralized relocation*, wherein actors exploit geographic gaps in uneven landscapes of international political pressure to reshuffle activities between major international financial centers.

While the strategies they employ is likely to be strongly context dependent, there is reason to suspect that actors will seek, where possible, to adapt to international pressure through some combination of in-situ persistence, and/or centralized relocation, to allow for their continued operation within the core structures of global finance. This is due to the fact that the same forces which impart a strongly centralizing logic to global financial networks also impart tremendous inertia and path-dependence; with efforts to radically depart from established structures incurring inherently steep switching costs and inefficiencies (Braudel 2019; Farrell and Newman 2019; Haberly and Wojcik 2022; Oakley et al. 2013).

While financial geographies do shift historically, this usually occurs organically through the extension of activity along established pathways and relationships rather than through drastic leaps or discontinuities (Arrighi 1994; Braudel 1985; 1992). This evolutionary path dependence

is reflected, in particular, in the pervasive organization of global financial networks around often long-extinct imperial relationships; which are perpetuated in finance via institutional and relational lock-in effects and interdependencies, together with residual cultural and political ties (Haberly and Wojcik 2022). Above all, Britain's so-called financial "second empire" or "archipelago," of politically dependent and independent offshore and other international financial centers, continues to act as a backbone for much of the global financial system, and reciprocally helps to maintain London's central role in this system (Palan et al. 2010; Shaxson 2011; Haberly and Wojcik 2015).

Indeed, since the post-WWII rise of the Eurodollar market—as centered chiefly on London, and UK colonial and post-colonial financial hubs such as Hong Kong, Singapore, and UK Caribbean Overseas Territories—the global financial and monetary power of the United States itself has been largely operationalized through this older British post-colonial financial architecture (Haberly and Wojcik 2022; Helleiner 1995). At the center of this conjoined Anglo-American global financial architecture is the transatlantic "NY-LON axis" (Wojcik 2013) of New York and London, operating in tandem with the political "special relationship" between the US and UK (Haberly 2021; Haberly and Wojcik 2022; Palan 2010). Beyond this, British and US historical colonial relationships are also institutionalized within the basic plumbing of US dollar clearing and settlement; with two of the four offshore dollar clearing facilities which the US has permitted to be established—i.e. in the Philippines, Japan, Singapore, and Hong Kong (Abely 2019)—located in the two leading East Asian British post-colonial financial centers (while the Philippines has direct US colonial ties).

The paradox of this British post-colonial enabling of US global financial power is that this same infrastructure also enables the global financial operations of US (and British) geopolitical rivals. Indeed, the London Eurodollar market was by some accounts pioneered by the London-based USSR state-owned Moscow Narodny bank, in cooperation with UK merchant banks, as a mechanism for circumventing potential US freezes or seizures of the USSR's dollar reserves (Burn 1999; CIA 1969; Shaxson 2011). Subsequently, USSR state banks extended their US dollar operations to offshore facilities in other British post-colonial financial hubs such as Singapore (Andelman 1976; Haberly and Wojcik 2022). Similarly, Mao-era China, which operated under US sanctions for decades, conducted its international financial operations chiefly through its state-owned banks in British Hong Kong (Farber 1981; Shenk 2002), where US banks also evaded their own government's sanctions on China via local intermediaries (Shenk 2002).

Following its handover to mainland rule, Hong Kong has become even more actively cultivated by the Chinese state as its principal international financial platform, in conjunction with UK Overseas Territories led by BVI and the Cayman Islands (Palan and Wei 2023; Sharman 2012; Walter and Howie 2011; Wojcik and Camillieri 2015; Haberly 2024). This encompasses efforts to promote the RMB as an international reserve currency alternative to the US dollar, which have chiefly revolved around the state-led development of the offshore RMB market in Hong Kong, Singapore and London (Töpfer and Hall 2018). Meanwhile, after the fall of communism, Russia's already strong financial ties with London, developed by the government of the USSR, were enormously expanded via an influx of "oligarch" business and investment. Like mainland

Chinese operations in Hong Kong, this Russian business was mostly structured through currently or formerly UK-ruled offshore incorporation platforms, including BVI, Gibraltar, Jersey, and most importantly Cyprus (Haberly 2024; Nougayrède 2013; Sharafutdinova and Dawisha 2017).

As shown in the following sections, the UK itself, along with its Overseas Territories and Crown Dependencies, and formerly UK-ruled jurisdictions within the EU, appear to have become increasingly inhospitable to the financial operations of US and British geopolitical adversaries under the growing pressure of US and allied sanctions. However, rather than abandoning Britain's global financial "second empire," these US/British geopolitical adversaries, and above all Russia and Iran, have mostly redistributed their financial operations within it to more hospitable nodes. This has entailed their *centralized relocation* from their previously central hub, London, to an ascendent "Dubai-Kong axis" in what can be seen as an institutional, relational, and political path-of-least resistance substitution for London. At the same time, however, this pattern is not universally observed among all types of sanctioned networks; with non-Iran linked terrorist networks mostly reconstituting themselves after 9/11 in far-flung peripheral locales, while corruption-facilitating networks used by non-Russian actors have remained largely centered on the UK's Overseas Territories and western financial centers broadly.

4. Mapping US Sanctioned Global Financial Networks

While US efforts to police global finance extend across multiple domains, it is the expansion as well as increasingly extraterritorial enforcement of (e.g. via secondary sanctions) of US sanctions, against state and non-state actors, which has most dramatically reshaped the global financial system in recent decades (see Drezner 2015; 2021; Gordon 2019; Hufbauer and Jung 2020). The analysis here seeks to comprehensively map the impact of US sanctions on the historically changing architectures of the global financial networks constructed by all US sanctioned actors, by using a newly created dataset of all US sanctioned entities. This dataset is the first to comprehensively compile information on the combination of 1) historical dates of both entity formation and sanctioning, 2) the underlying sanctioned actors on whose behalf entities are used, 3) the specific as well as general functional categories for which entities are used, and 4) the direct and indirect network affiliations of entities, as defined at the level of strategic coordination. The starting point for the construction of this dataset is the US Treasury's Office of Foreign Assets Control (OFAC) sanctions database, from which information is obtained on the specific programs under which entities are sanctioned, as well as the geographic structures of entities, including all known addresses. As of the compilation of the data used here (YE-2023), there were 10,475 non-redundant country-level entity entries in this dataset—i.e. offices of US sanctioned entities, counting at most one address per country. This forms the underlying sample for the dataset constructed here.

Beyond OFAC's database, the US Treasury and State Department retain voluminous archives on the functions and affiliations of sanctioned entities and individuals, in the form of the detailed press releases issued with each batch of sanctions imposition. However, these are not systematically organized or linked to OFAC's sanctions database. The principal methodology

used here was to comprehensively code and integrate this archived textual information with OFAC's more skeletal data on sanctioned entities. Network affiliations were coded on a hierarchically nested group basis designed to capture the horizontal relationships of intra-group coordination among entities, rather than simply bilateral linkages and chains of command (as coded by OFAC itself in a relatively threadbare and inconsistent way). These relationships are categorized here as either "strong" or "weak" network affiliations; wherein the former captures direct functional coordination, while the latter captures the highest level of shared group affiliation.¹ Meanwhile, the pervasive gaps in OFAC data on entity formation dates were filled through systematic queries across three databases: Orbis, OpenCorporates, and the International Consortium of Investigative Journalists Offshore Leaks Dataset (comprising the Panama, Paradise, and Pandora Papers and other leaks), supplemented with additional online searches.²

To focus on the *global* financial networks used by sanctioned actors, the analysis here problematizes "cross-border" sanctioned entities located in a *different* country from that of the underlying sanctions-targeted actor to which they are linked. Out of the 10,475 non-redundant country-level geographic entries in the dataset, 2,296 fall into this "cross-border" category. Table 1 provides a breakdown of these cross-border entities by underlying sanctioned country, as well as function and user categories. Figure 1 shows the historical dates of sanctions imposition on entities by user category, while figure 2 show the historical dates of formation of these same entities by user category.

As shown in figure 1, the expansion of US sanctions has occurred in well defined phases since the early 1990s (also see Hufbauer and Jung 2020). During the 1990s, sanctions were mostly imposed on entities linked to the Iraqi and Cuban regimes, and various parties involved in the Balkan conflicts. Following the 2001 September 11 attacks, the focus shifted to international terrorist groups, which was followed by an expansion of sanctions against international drug traffickers, and eventually organized criminal groups more broadly. The US also dramatically expanded and internationalized its longstanding sanctions against Iran—chiefly to put political pressure on its nuclear program—both by working multilaterally through the UN (leading to 2006 Security Council Sanctions), and from 2010 by unilaterally imposing widening *secondary* sanctions with an effectively global extraterritorial scope (extending the 2010 escalation of UN Security Council Sanctions; see Gheibi 2022). The 2010s also saw an expansion of sanctions against North Korea-linked entities, and from 2014 against Russia-linked entities, following the latter's occupation of Crimea and the Donbas; with the scope of Russia-directed sanctions

¹ "Strong" affiliation criteria here include a) multiple offices of the same entity, b) entities directly owned by the same corporate group or individual, and c) entities operating under the direct command of a particular individual or group of individuals. Meanwhile, "weak" affiliations include, for example, the links between independent third-party actors acting on behalf of a single underlying sanctioned actor (e.g. state owned enterprise, government agency), which are not directly controlled by this actor, or the full extent and affiliations of large terrorist or criminal organizations with a compartmentalized cellular structure of direct entity coordination.

² Typically, obtaining entity formation dates required conducting multiple queries for each entity across all three of these databases to capture the use of e.g. multiple aliases and names (e.g. in different languages), and additional information such as address frequently needed to confirm matches due to e.g. differences in exact name and/or the presence of multiple entities with similar names.

enormously escalated following the start of the Ukraine war in 2022. Finally, following the 2016 Global Magnitsky Act, there has been expansion of sanctions against corrupt and human rights-abusing government officials and their associates, including (unlike for previous programs) in countries not subject to US country-specific programs.

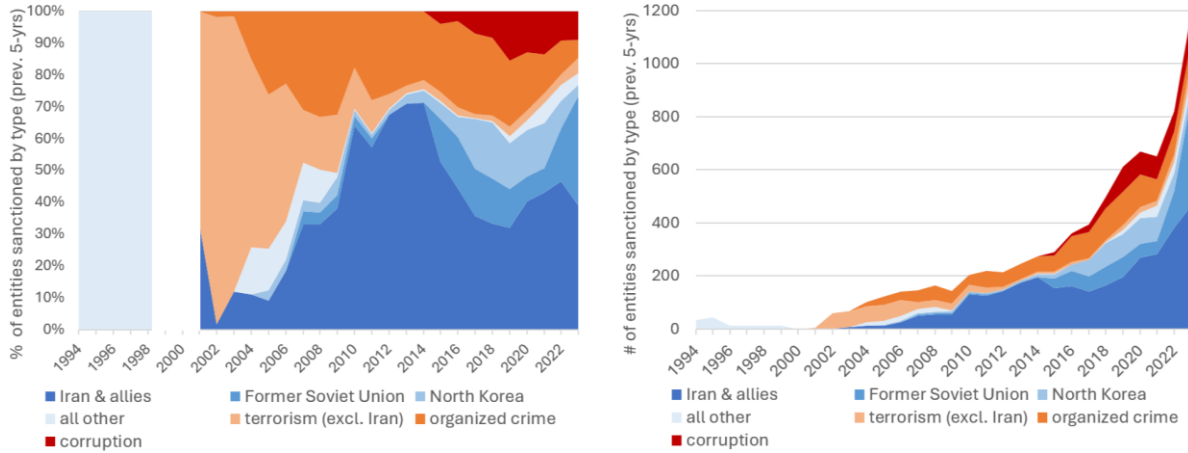


Figure 1. Year of sanctioning of US sanctioned cross-border entities, 1994-2023

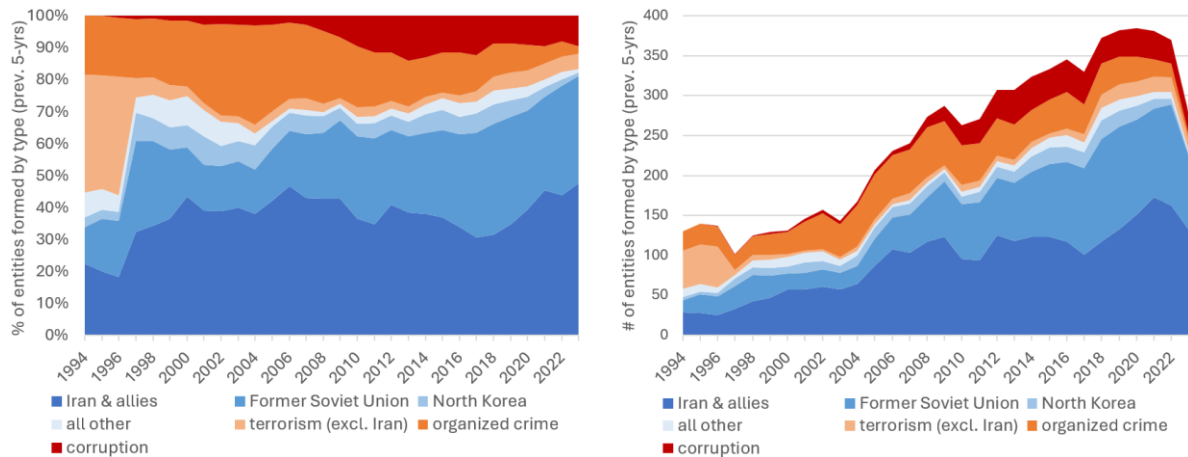


Figure 2. Year of formation of US sanctioned cross-border entities, 1994-2023

While the US sanctioning of entities in figure 1 shows a sharp upward curve over time, the entities involved were formed over a much longer period of several decades (figure 2). It is thus possible to track how the geographies of the financial networks used by actors who would *eventually* be sanctioned by the US, has co-evolved historically with the expansion of sanctions themselves. As shown in table 1, the largest number of cross-border sanctioned entities, by user category, are linked to Iran and its allies (i.e. the Assad regime in Syria, and Hizballah and other Iran-backed terrorist groups), followed by Russia, and criminal (including drug trafficking) organizations. Meanwhile, the largest function of sanctioned entities is facilitating the oil, petrochemicals, gas and minerals trade, followed by organized criminal money laundering and terrorist financing, the facilitation of trade in sanctioned weapons, technology, and industrial products, and finally other banking and financial activities (omitting financial activities that support these other categories of activity).

Table 1. Users and Functions of US Sanctioned Cross-Border* Entities (year-end 2023)

target country	Activity	org. crim. & terrorist financing	oil, gas, chem. & minerals	weapons, technology & industrial	banking & finance	other investment	other transport & trade	other (including unknown)	Total
target country	Category								
Afghanistan	Corruption terrorism (excl. Iran allies)	82				43			43 82
Angola	Corruption					2			2
Argentina	org. crime (incl. drugs)	8							8
Belarus	Belarus		7	1		3			11
Bosnia and Herz.	org. crime (incl. drugs)	4							4
Myanmar	Myanmar org. crime (incl. drugs)	25	3	1					4 25
Canada	org. crime (incl. drugs)	4							4
Central African Rep.	Central African Rep.		1						1
China	org. crime (incl. drugs) China	19	1	8					19 9
Colombia	org. crime (incl. drugs)	25							25
Congo (DRC)	Corruption org. crime (incl. drugs)		25 11	3	1				26 14
Cuba	Cuba		2		6		57	38	103
Eritrea	Eritrea					1			1
India	org. crime (incl. drugs)	2							2
Indonesia	terrorism (excl. Iran allies)	1							1
Iran	Iran & allies	18	385	140	79	1	48	1	672
Iraq	Iraq terrorism (excl. Iran allies)	3	3	3		4	10	29	49 3
Ireland	org. crime (incl. drugs)	4							4
North Korea	North Korea		29	49	17		28	18	141
Kosovo	org. crime (incl. drugs)	11							11
Laos	org. crime (incl. drugs)	3							3
Lebanon	Iran & allies org. crime (incl. drugs) Corruption	78 20	1	7		2			86 20 2
Libya	org. crime (incl. drugs) terrorism (excl. Iran allies) Libya	4	26			1			26 4 1
Mali	Corruption					1			1
Mexico	org. crime (incl. drugs)	10							10
North Macedonia	Corruption					1			1
Pakistan	Pakistan org. crime (incl. drugs)	16		1					1 16
Panama	org. crime (incl. drugs)	53							53
Paraguay	Corruption					2			2
Peru	org. crime (incl. drugs)	17							17
Gaza	Iran & allies	25							25
Russia	Russia	1	43	202	133	56	29	11	475
Serbia	org. crime (incl. drugs)			6					6
Slovenia	Corruption	11							11
Somalia	terrorism (excl. Iran allies) org. crime (incl. drugs)	1					6		1 6
South Sudan	Corruption South Sudan			2		5			5 2
Sri Lanka	terrorism (excl. Iran allies)	17							17
Sudan	Sudan			1					1
Syria	terrorism (excl. Iran allies) Iran & allies	45	25	1 21	7	10		1	46 64
Turkey	org. crime (incl. drugs)	3							3
Ukraine	org. crime (incl. drugs)	6							6
United Kingdom	org. crime (incl. drugs)	1							1
Venezuela	org. crime (incl. drugs) Corruption Venezuela	13 5	26		2	50			13 55 28
Yemen	Iran & allies terrorism (excl. Iran allies)	20 1	1			2			23 1
Total		556	589	446	245	184	178	98	2296

*entities formed in jurisdictions other than underlying sanctioned country.

Figures 3 and 4 show the key geographic trends in the historical evolution of US sanctioned cross-border entity networks from 1980, to year-end 2023. In figure 3, circles areas are proportional to the share of entities established in each jurisdiction during the pre-2002 (upper right), 2002-2014 (lower left), and 2015-2023 (lower right) periods; with time breaks corresponding to two watershed events in the development of US sanctions, namely the September 11 attacks (2001/2002 break), and the Russian occupation of Crimea and the Donbas (2014/2015 break).. Line thickness and shading indicates the number and strengths respectively of network relationships between entities established in different jurisdictions, within each period. Orange circle shading indicates jurisdictions that either are or were UK-ruled as of the 20th century or later, with other jurisdictions shaded in blue. Orange network ties show intra-UK colonial/post-colonial jurisdiction ties, while blue indicates ties among other countries, and purple ties across these two groups of countries. Figure 4 shows the historical evolution of the overall share (left) and total number (right) of US sanctioned entities (adjusted by a jurisdiction-specific data coverage correction factor³) that were active, in each year, in each jurisdiction. “Active” is defined here as the period between entity establishment and sanctioning (i.e. the period during which they could operate freely in the global financial system).

As shown in figures 3 and 4, prior to 2002, the UK, and more specifically London, was the central hub in US sanctioned global financial networks, which hosted the largest number of US sanctioned entities (including entities that would *eventually* be sanctioned later), and was the focus for the largest number of international network ties. The largest categories of UK-based sanctioned entities established before 2002 were Iranian state-owned enterprises, and companies linked to Saddam Hussein’s regime in Iraq, reflecting London’s broader longstanding centrality in the financial networks of Persian Gulf oil exporters (see below). The US sanctioning of numerous Iraqi regime-linked entities, in conjunction with the first Gulf War, is visible as a sharp 1990-1991 fall in active UK entities (figure 4).

Around the central node of the UK, several other major developed economies, including Germany, France, Canada, Spain and the United States, comprised what can be described as the broader pre-2002 network core. Branching out from this were links to regionally specialized hubs. In the Americas, the most important regional hub was Panama, which prior to 2002 hosted the second largest total number of sanctioned entities after the UK, with strong links to the United States, Canada and Spain, and countries throughout Latin America. These Panama-centered sanctioned networks were chiefly used by Latin American drug trafficking organizations, and Cuban state-owned multinationals. Meanwhile, the most important Old World network node outside of Europe was the UAE/Dubai, which prior to 2002 primarily hosted Iran-linked entities. As seen in figure 3, the UAE/Dubai played a key pre-2002 role in linking the

³ There is significant variation between jurisdictions in the percentage of entities for which the date of formation could be determined, which could potentially exert a downward bias on the apparent importance in figure 4 of jurisdictions with low data quality. To compensate for this, the entity counts (and percentages) have been adjusted upwards for each jurisdiction in inverse proportion to a jurisdiction-specific adjustment factor, recording the percentage of total entities hosted for which formation date could be determined.

European core of these networks, and above all the UK, to Asia more broadly, with strong ties visible between the UAE and Hong Kong, Singapore, and Mainland China.

Following the September 11 attacks, the structure of these networks changed dramatically. Most importantly, their overall center of gravity shifted decisively from the UK, and other major western countries, to a network of ex-UK colonial financial centers spanning Asia and the Mediterranean (figures 3-4). In figure 4, the combined share of active entities hosted by all advanced western economies dropped from 39% in 1980, to 15% in 2023. The share of entities hosted by the UK dropped particularly sharply from 14% to 1.6%; or from 16% to 3% when all currently UK-ruled jurisdictions are included (including Hong Kong to 1997, and other UK Overseas Territories and Crown Dependencies thereafter).

Meanwhile activity was shifted to formerly UK-ruled international financial centers, whose share of hosted sanctioned entities rose from 8.6% in 1980, to 48% in 2023. This shift was even more pronounced at the level of relational connectivity. In the pre-2002 network, 18% of all strong international ties involved the UK and its current and former colonial international financial centers (i.e. excluding other ex-UK colonies), of which half directly involved the UK itself. Meanwhile, in the 2015-2023 network, the share of all strong network ties involving the UK and its current and former colonial offshore jurisdictions rose to 78%; of these, however, 86% involved jurisdictions other than the UK.

The post-2002 evolution of US sanctioned global financial networks has above all been dominated by the rise of what can be described as the *Dubai-Kong axis*. As of 2023, the UAE and Hong Kong hosted 30% of all active US sanctioned cross-border entities, with the largest number of UAE entities formed in Dubai (and the remainder usually having at least one Dubai address). Indeed, the Dubai-Kong axis is now substantially more dominant in the architecture of sanctioned networks than the UK/London was historically—with the UAE and Hong Kong together now hosting twice the share of entities of all western developed countries combined, while 49% of all strong international relationships in the 2015-2023 network directly involved one of these two financial centers. Meanwhile the link between the UAE and Hong Kong itself accounted for more than 4% of all strong international ties in the 2015-2023 network—up 1.3% in the 2002-.2014 network, and 0.1% in the pre-2002 network—indicating that activities are often directly coordinated across these two centers.

Figures 5-6 show the historically cumulative map of cross-border sanctioned entity networks (figure 5), and the key functions and users of the of the main jurisdictions within them (figure 6), over the entire 1980-2023 period (with the same shading and color scheme used as in figure 3). In contrast to figure 3, figure 5 shows links between entities formed in different time periods, as well as entities for which no formation date could be determined—with the inclusion of the latter substantially increasing the prominence of a few particularly opaque offshore incorporation hubs such as Belize and Liberia. Meanwhile Figure 6, provides a disaggregated view of which users (left) and activities (right) are predominant in the most important jurisdictions.

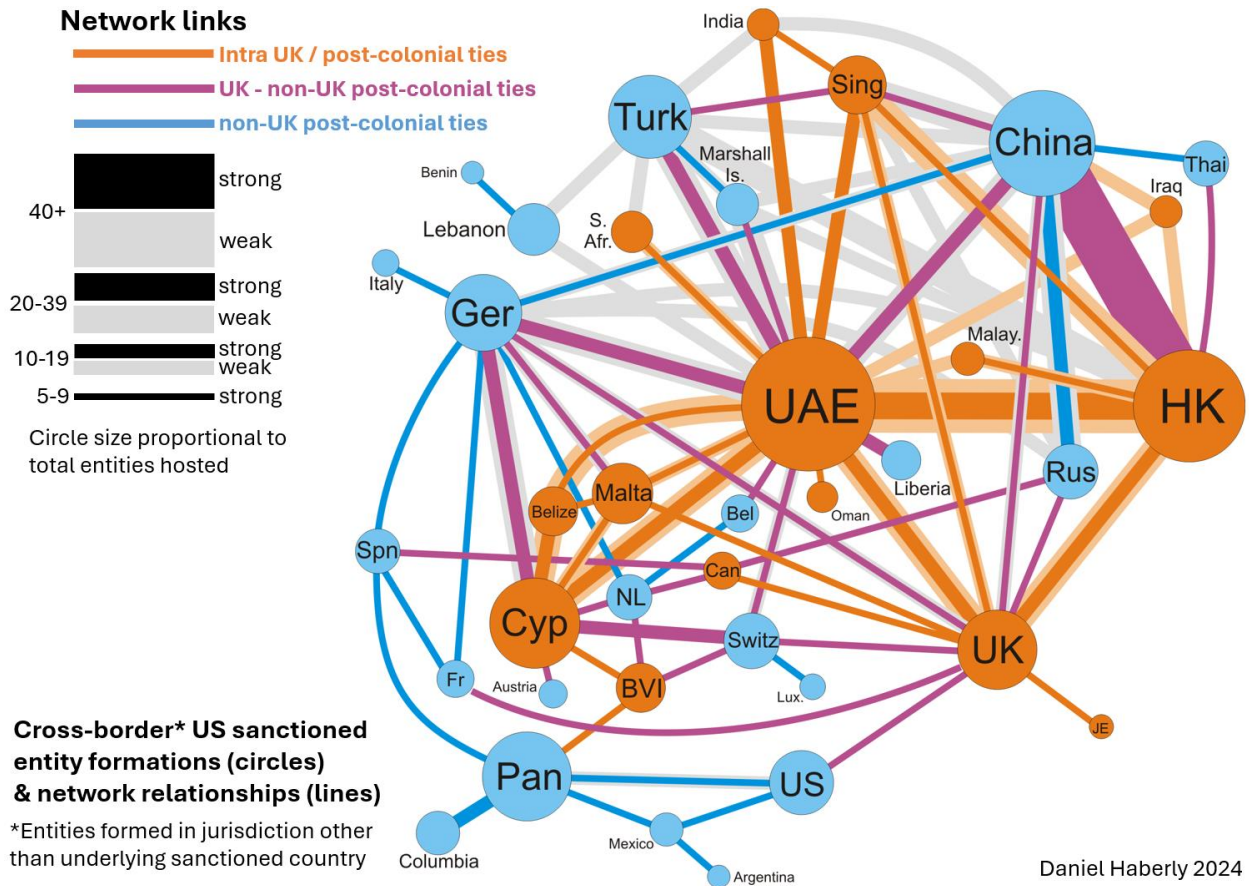


Figure 5. Cumulative historical networks of US sanctioned cross-border* entities

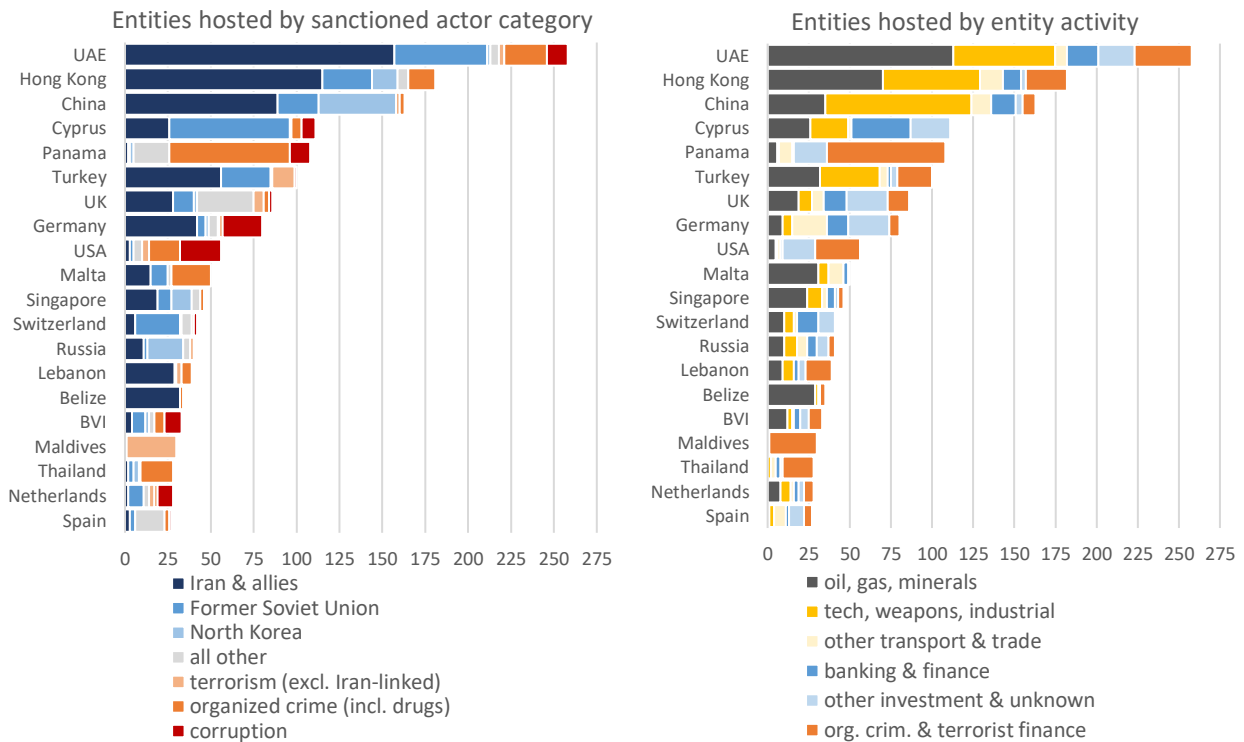


Figure 6. Actor and activity categories of hosted US sanctioned cross-border entities

As shown in figure 6, the Dubai-Kong axis is first oriented towards supporting the international oil and gas and minerals trade, and second towards supporting the trade in sanctioned technology, weapons and industrial goods. However, it also hosts a diversified array of banking and financial, as well as organized criminal money laundering and terrorist financing activities, which are not directly connected to either of the former two sanctions evading trades. Meanwhile, at the level of actors, the axis is most strongly oriented towards Iran-linked networks (including Iran allies), and secondarily towards former-Soviet networks; with Hong Kong also playing a key role in North Korean networks, and both Dubai and Hong Kong acting as major hubs for international organized criminal groups.

Branching off from the Dubai-Kong axis are links to other key UK colonial and post-colonial offshore hubs, which mediate ties between the network's central axis and various regions and users. The most important UK post-colonial offshore hub, after Dubai and Hong Kong, is Cyprus, which surpassed the UK in the 2002-2014 and 2015-2023 periods as the leading European hub for sanctioned networks (figures 3-4). As documented in other work (e.g. Haberly 2024), Cyprus's largest specialization is in the hosting of Russian international business structures, and in particular financial activities centered on oligarch wealth management (figure 6). Within these oligarch-linked networks, Cyprus shows particularly strong ties to Switzerland (and via Switzerland, Luxembourg), as well as Austria, the Netherlands, the British Virgin Islands, and Malta (figures 5 and 6). Additionally, Cyprus also plays a major role in Iranian sanctioned networks, including in the oil and gas trade—wherein it is also closely tied the UK-post-colonial offshore hubs of Belize and Malta, which here primarily serve as hosts for tanker-owning shell companies. Meanwhile, Malta itself plays a significant role alongside Cyprus in Russian oligarch-linked sanctioned networks, as well as in organized criminal networks engaged in Libyan oil smuggling.

Also playing a significant role in post-2015 US sanctioned networks is Singapore, which, together with Hong Kong and Dubai, comprises the third vertex of the British post-colonial triangle that more broadly dominates Asian international financial networks. Singapore here plays an important role in supporting the oil and gas as well as military industrial and technology trades within the Iranian, North Korean, and Russian networks; with strong links to Mainland China, India, Hong Kong, the UAE, and Turkey. Meanwhile, together with Mainland China, Turkey stands out as one of the few jurisdictions with no history of UK colonial rule that has substantially grown in importance through the 2002-2014 and 2015-2023 periods. In this respect, it appears to act as a secondary coordinating node to the Dubai-Kong axis, in both Iranian and Russia-linked networks, across the oil and gas and military industrial and technology trades, as well as within the financial networks of Iran-backed terrorist organizations (figures 3-5). Turkey also has a strong joint connection, with the UAE, to the shipping shell company hub of the Marshall Islands, which like Belize is chiefly used here to obscure Iranian tanker ownership.

Finally, while it is no longer the single most important node in global sanctioned networks, the UK nevertheless continues to play an important role within them, with an unusually diverse geographic and functional orientation. Indeed, while UK largely drops out of the 2002-2014 network, it shows a post-2015 resurgence (see figure 3), with particularly strong post-2015 ties

between the UK and the Dubai-Kong axis, as well as Mainland China, India, Malta, Singapore, and the Baltic States (particularly Estonia). Notably, the UK's *absolute* relational centrality in the global sanctioned entity network, as opposed to its share of entities hosted, is actually higher in 2015-23, than in 1980-2002; with the share of worldwide strong international ties involving the UK rising from 9% to 10%. This appears to itself be partly a reciprocal consequence of the growing global influence of the UK's post-colonial financial network—including the Dubai-Kong axis—due to the strong ties that these jurisdictions retain with the UK/London.

As seen in figure 5, the UK also serves as the key link between Old World sanctioned network hubs in general, and the US. Apart from this link to the UK/London, the US is otherwise primarily linked to Latin American drug trafficking and corrupt official networks, as historically centered on Panama, with additional ties to the British Virgin Islands and Spain (figures 3 & 5). Notably, this trans-American drug trafficking and corruption-centered network, which is highly prominent in the pre-2002 network, steadily declines thereafter. Indeed, the key Panama-Colombia-USA triangle becomes disconnected from the broader global sanctioned entities network in the 2002-2014 map, and disappears from the 2015-2023 map altogether (figure 3).

6. The Historical Evolution of Sanctioned Networks

Figures 7-11 provide a more disaggregated view of the historical evolution of US sanctioned financial networks across specific categories of user, from 1980 to YE-2023. As in previous figures, the focus is on the historical formation dates, and periods of active operation, of all cross-border entities which would *eventually* be sanctioned by the US—thus allowing for a before-and-after visualization of changes following the imposition of sanctions themselves.

As can be seen in figures 7-11, the rising importance of the Dubai-Kong axis stems from its increasingly central role in all three of the largest categories of US sanctioned networks—namely those linked to Iran and its allies (including terrorist groups), the former Soviet Union (Belarus, Russia and Ukraine), and organized criminal groups. The Iran-linked networks historically spearheaded the development of the Dubai-Kong axis, and still play the largest role in it today (figures 6 and 9). Indeed, as shown in figure 7, Dubai has long been the principal Middle Eastern hub used by Iranian business networks, with Persian merchants historically playing a crucial role in Dubai's rise as a British colonial free port through the 19th and 20th centuries, and a substantial portion of Dubai's population having Iranian ancestry (Davison 2008). These close economic and social ties have historically gone hand-in-hand with close political ties between Dubai and Iran, particularly when viewed in the context of the broader geopolitical rivalry between the latter and Abu Dhabi; with Dubai, for example, backing the Iranian side in the 1980s Iraq-Iran war, while Abu Dhabi, along with most of the Arab world, backed the Iraqi side. Such internal political dissonance within the UAE, even in matters of foreign policy, has been made possible by its exceedingly loosely constituted nature as a polity; with Dubai, for example, maintaining its own separate military until the late 1990s (Davidson 2008).

Prior to the early-2000s, the main international axis of the Iran-linked networks in this dataset linked their regional base of Dubai, to the global financial hub of London. As for other Persian

Gulf oil exporters, these ties to London had colonial roots, which persisted even while the net direction of investment between the UK and the Gulf became inverted in the 1960s-70s to run from South to North rather than from North to South (Wearing 2018). In the case of Iran, this historical UK colonial relationship was constituted informally via the Anglo-Iranian Oil company—i.e. BP—which dominated the development of the Iranian oil industry in the first half of the 20th century (Yergin 1990). In 1951, the Iranian operations of Anglo-Iranian/BP were nationalized by Mossadegh, creating the National Iranian Oil Company (NIOC). However, this continued to largely concentrate its international operations in London, with NIOC subsidiaries comprising the largest group of London-based Iran-linked entities in this dataset. These continued to be established in large numbers in the UK and Channel Islands (also see Yong 2013) from the 1970s to 1990s, underscoring London’s durable role as the leading international business hub for the Iranian state, like other Persian Gulf oil exporters. Iran’s state-controlled banking and insurance groups also show a geographic focus on London in the sanctioned entities data, which in some cases dates to the mid or early 20th century, and as for NIOC continued to expand through the turn of the millennium.

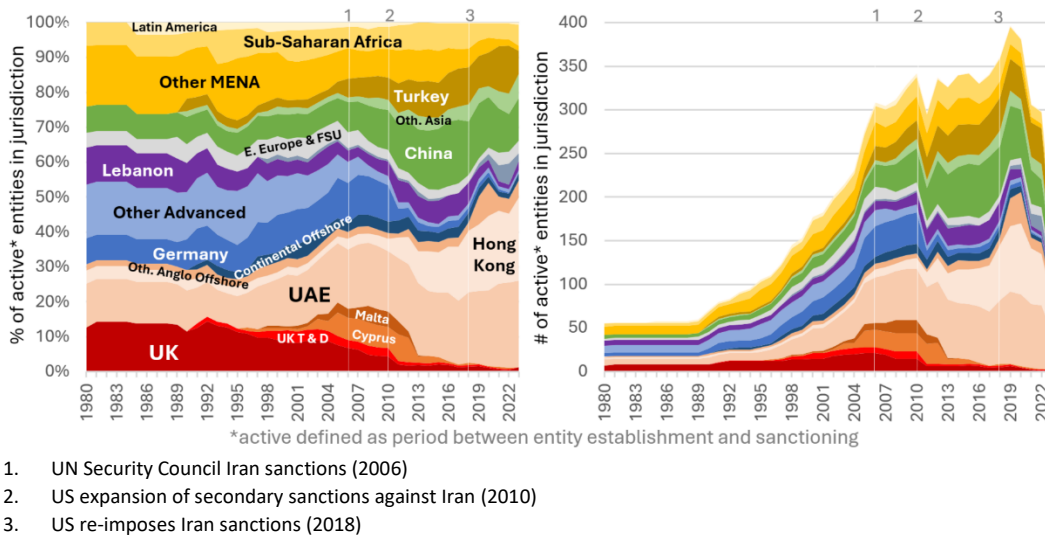


Figure 7. Iran and Allies-linked entities – Active* US Sanctioned Cross-Border Entities by Hosting Jurisdiction, 1980-2023

While Iran’s financial operations in London seem to have been largely unaffected by the 1979 Iranian revolution, the same was not true of its political and economic relationship with the United States, which has maintained unilateral sanctions on Iran since the 1980s (ICG 2013). However, prior to the 2000s, the US made little attempt to internationalize the enforcement of its Iran sanctions, with a 1996 push to impose extraterritorial secondary sanctions on non-US firms involved in the Iranian energy sector being effectively aborted through the creation of carve-outs for European firms (Gheibi 2022). As shown in figure 9, the key watershed events in the internationalization of sanctions against Iran were the UN Security Council’s 2006 adoption, under US pressure, of multilateral sanctions against Iranian nuclear program (event #1 in figure 7), followed by the 2010 US unilateral escalation of extraterritorial secondary sanctions enforcement (expanding-upon intensified UN Security Council Sanctions) against foreign firms doing business with Iran, as well as the operations of Iranian firms abroad (event # 2). These

measures effectively disconnected Iran from the western financial system, including, from 2012, from SWIFT. These post-2010 US sanctions were mirrored by corresponding EU actions (Gheibi 2022; ICG 2013), with Western Europe, including the UK as well as the EU-based UK post-colonial offshore hubs of Cyprus and Malta, almost entirely disappearing from the Iranian networks by 2013 (figure 7).

In contrast, Dubai's position in the Iranian networks appears to have been unaffected by the post-2010 expansion of US and allied sanctions (figure 7). With London amputated from their operations, the dominant axis of these networks was reoriented eastwards to link their West Asian regional base of Dubai, to a new East Asian regional base of Hong Kong, largely as a gateway to China. From 2010, the latter became the second and third largest hosts respectively, after the UAE, for Iran-linked entities, with the UAE and Hong Kong further ballooned in importance in the Iranian networks following the 2018 US withdrawal from the JCOP "Iran Deal" (figure 7 event #3; Gheibi 2022) Just as Dubai has long served as the principal Middle Eastern regional interlocutor between Iran and the global financial system, Hong Kong has long played the same role for China, making Dubai and Hong Kong natural points of conjunction for Iran-China interactions. From west-to-east, the Dubai-Kong axis coordinates the sale of Iranian oil and petrochemicals to their new principal markets in South, Southeast, and East Asia, and above all China, as well as India—with the latter having particularly strong and longstanding business ties to Dubai (Davidson 2008). Meanwhile, from East to West, the axis facilitates the Iranian procurement of sanctioned technological and industrial goods produced by manufacturers in mainland China, as well as, just as importantly, obscuring the ultimate Iranian customers for western sourced products in these categories. As shown in figure 7, Turkey/Istanbul has also grown dramatically in importance in the Iran-linked networks, in close coordination with the Dubai-Kong axis, across the oil and petrochemicals as well as military industrial and technology trades. Within the former trade, Turkey, in conjunction with Dubai, also operates in an increasingly close relationship with Belize, Liberia, and the Marshall Islands, which have replaced Cyprus and Malta as the main hosts for shell companies enabling Iran's oil trade.

A substantial share of the Iranian networks operating across the Dubai-Kong axis are involved in what the US Treasury describes as the "shadow banking" functions supporting the completion of transactions in these east-west and west-east trading relationships. The central role of Dubai and Hong Kong in these shadow-banking networks appears to stem from their status as open access points to the global financial system for Iranian actors and their proxies, including in the context of US dollar operations, where they can procure the services of major western multinational banks, (Economist 2024). Additionally, the data here shows that the Dubai-Kong axis has also come to play an increasingly important role in the financial networks of Iran-backed terrorist groups, for whom the UAE is the largest, and Hong Kong the third largest cross-border entity host. Also important in the Iran-linked terrorist networks, are an array of sub-Saharan African economies, and most importantly South Africa, which is the #2 host for Iran-linked terrorist group entities after the UAE. As described below, Sub-Saharan African countries, including South Africa, are also important in non-Iran-linked terrorist networks. As in the Iranian oil and military technology trade-linked networks, Turkey/Istanbul also plays a key secondary

coordinating role in the Iran-linked terrorist financing networks, in a triangular relationship with the UAE and Hong Kong.

The more recent expansion of US and broader western sanctions against Russia, in comparison to Iran, makes their impact more difficult to gauge. However, figure 6 suggests that the intensification of sanctions is pushing Russia’s international business and financial networks to converge on similar geographic structures to the Iranian networks. Indeed, as shown in table 2, there is an overall correlation of 0.68, at <1% significance, between the geographies of former Soviet and Iran-linked cross-border sanctioned entities. This is far stronger than the correlations between any of the other types of sanctioned networks, with the second highest being the 0.51 correlation between the Iranian and North Korean networks.

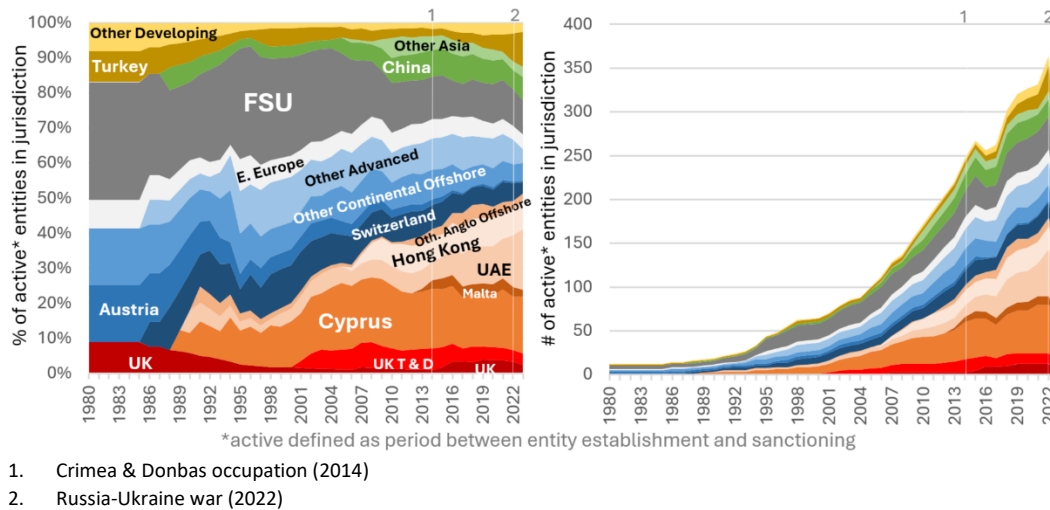


Figure 8. Former Soviet Union-linked entities – Active* US Sanctioned Cross-Border Entities by Hosting Jurisdiction, 1980-2023

Table 2. Correlation between geographies of US sanctioned entities by underlying sanctioned actor categories (historically cumulative entity formation)

	Iran & allies	FSU	North Korea	all other	non-Iran-terrorist	organized crime	corruption
Iran & allies	1	0.68*	0.51*	0.21*	0.16*	0.31*	0.30*
FSU	0.68*	1	0.27*	0.19*	0.13	0.24*	0.30*
North Korea	0.51*	0.27*	1	0.095	0.039	0.10	0.014
all other	0.21*	0.19*	0.095	1	0.095	0.47*	0.31*
non-Iran-terrorist	0.16*	0.13	0.039	0.095	1	0.0024	0.061
organized crime	0.31*	0.24*	0.10	0.47*	0.0024	1	0.48*
corruption	0.30*	0.30*	0.014	0.31*	0.061	0.48*	1

*<1% significance

As seen in figure 8, this Ruso-Iranian financial geographic convergence encompasses a rising role of the Dubai-Kong axis, as well as the important offshoot of this axis in Turkey/Istanbul, in the Russian networks. As for Iran, the expansion of these structures has supported a re-

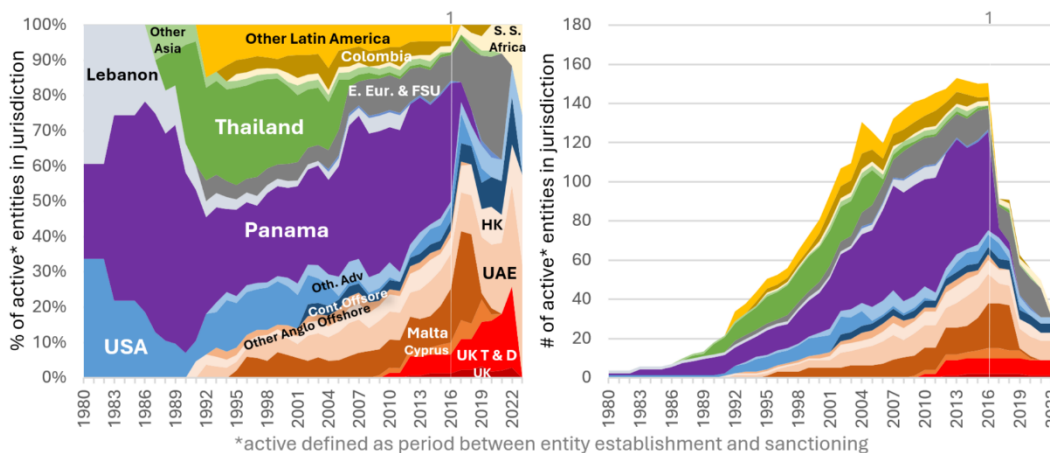
orientation of Russian's trading and financial relationships away from the West and towards Asia; with the central focus, as for Iran, being the export of oil and gas from west to east, and the import of military-linked technology and industrial goods from east to west. Crucially, as for Iran, the *ultimate* origin of many of the military-linked technology products procured via these East-West structures is not Asian, but rather Western, and above all American (with e.g. US-made semiconductors still predominating in the manufacturing of Russian missiles; Nardelli et al. 2024). In all, the leading hosts for Russian-linked entities facilitating sanctioned technology, weapons and industrial imports are the UAE, followed by Turkey and Hong Kong. Meanwhile, the UAE is the single largest host for cross-border sanctioned entities facilitating Russia's primarily Asia-destined oil and gas exports, with these Dubai-based entities closely linked, as for Iran, to tanker-owning offshore shell companies. In the Russian networks, these shell companies are above all registered in Liberia.

Notably, Cyprus still appears to play the single largest role in sanctioned Russian financial networks. However, this is mostly attributable to its legacy position in the financial networks of Oligarchs and their "enablers" (see Chang et al. 2023 and Shiel 2023), which now also appear to be in the process of shifting to the UAE and Hong Kong. These are now tied for third place, after Cyprus and Switzerland, as hosts for Russia-linked sanctioned entities involved in banking and finance. One of the most prolific sanctioned Russian oligarch users of the Dubai-Kong axis was the late Yevgeny Prigozhin, who established a Wagner Group subsidiary in Sharjah in 2021, and used financial facilitators in both Dubai and Hong Kong. In the case of Dubai, this appears to have been linked to Prigozhin's Sub-Saharan African gold mining activities, reflecting Dubai's longstanding role (since the immediate post-WWII period) as a hub for the physical intermediation of illicit financial flows via the smuggling of gold and other precious commodities (see Davidson 2008; Grynberg and Singogo 2019; Krylova 2023). Remarkably, gold accounted for two thirds of Russia's total reported exports to the UAE itself in 2022 (Mogielnicki 2024). Hong Kong, meanwhile, has long played an analogous role as the leading East Asian regional hub for gold smuggling, and illicit financial flows more broadly (Fung et al. 2011; Gunter 2004; Schenk 2002; 2013). Notably, while it accelerated after the 2014 Russian invasion of Ukraine (see Gabuev 2016), Russian movement towards the Dubai-Kong axis was already ongoing before this; with United Company Rusal, for example, which is owned by a now US-sanctioned oligarch, reportedly conducting its 2010 IPO in Hong Kong rather than London largely due to mounting UK-Russia political tensions (Harding 2008). Dubai, meanwhile, has long played a major role in post-Soviet capital flight and illicit financial and organized criminal networks, including in international arms trafficking. The most notorious such case was Dubai's role, with neighboring Sharjah, as the principal base of operation for the Tajik arms dealer Victor Bout, a.k.a the "merchant of death" or "sanctions buster" (Davidson 2008).

While the rise of Dubai and Hong Kong in US sanctioned networks has chiefly been driven by Russia and Iran-linked networks, a *relative* increase in their importance is also visible in organized criminal, including drug trafficking networks (figure 10). As of 2023, the UAE hosted the single largest (adjusted) share of active entities linked to organized criminal groups, while Hong Kong was tied for second place as a host for these entities. However, in contrast to their position in the Iran and Russia-linked networks, the interpretation of the relative rise of Dubai

and Hong Kong in this context is complicated by more complex changes in the geographic composition of organized criminal groups and drug trafficking pathways targeted by OFAC.

Historically, the largest organized criminal networks targeted by OFAC were Latin American drug trafficking groups, operating principally along a South-to-North axis from suppliers (South America) to market (United States). Sitting at the center of this trade was Panama, which the data here suggests was historically the leading financial hub in Latin American illicit drug trafficking networks. Indeed, as has been widely documented, Panama was essentially a narco-state throughout much of the late 20th century. This reached its apex under the regime of Manuel Noriega, who was famously backed by the US for reasons of Cold War geopolitics, even while the US escalated its “war on drugs” against the same groups (e.g. Escobar’s Medellin Cartel) to whom Noriega was selling the services of the Panamanian state (Chamblis 1989; Dinges 1990).



1. Panama Papers (2016)

Figure 9. Organized Crime (including drugs)-linked entities –Active* US Sanctioned Cross-Border Entities by Hosting Jurisdiction, 1980-2023

The data here suggests that Panama’s position in sanctioned criminal financial networks may have collapsed after the 2016 release of the Panama Papers (although this may also partially reflect a drop in the US *detection* of post-2016 formed Panama entities in the absence of subsequent leaks). The subsequent rise in the organized criminal “market share” of Dubai and Hong Kong, in this dataset, is largely a relative consequence of this apparent collapse in Panamanian company formation. However, there has also been a geographic reconfiguration of the international drug trade, as targeted by OFAC, which appears to have increased the role of Hong Kong, while reducing the role of Panama, in these networks. Rather than the trans-American cocaine trade, OFAC’s principal target here is increasingly the trans-Pacific synthetic opiate trade, which has in recent years grown to a massive scale as an unintentional side-effect of US efforts to crack down on the overprescription of commercial opioids (Beletsky and Davis 2017). This trade now runs from manufacturers of precursor chemicals and equipment in China and India, to the US market, via criminal intermediary groups based in Mexico (including cartels previously sanctioned for trans-American cocaine trafficking), and to a lesser extent Canada. Hong Kong appears to play an important role in this synthetic opiate trade—expanding its traditional status a key node in golden-triangle-based opium trafficking networks (see Gaylord

1997), which in-turn built on Hong Kong’s historical foundation as a British state-sponsored opium trafficking base (Tsang 2007). Hong Kong-based sanctioned US entities are also involved in an array of other organized criminal activities including illicit logging and fishing, as well as human and wildlife trafficking, largely operated by groups based in Southeast Asia. Notably, the growth of Chinese “grey area” networks, i.e. commercial firms involved in what the US (but not necessarily China) deems to be illicit activities, also appears to be the main driver of increasing role of UK Overseas Territories, and above BVI, in US sanctioned organized criminal networks (Figure 9). As in Chinese business structures broadly, these BVI entities are usually linked to Hong Kong-based entities.

Meanwhile, Dubai’s position in US sanctioned organized criminal networks is largely linked to its role in Afghan and Pakistani opium trafficking networks, reflecting the broader depth of Dubai’s longstanding economic and social relationships with South Asia (which like its ties to Iran date back to the 19th century). Additionally, the data here suggests that Dubai may be playing an increasingly important role in India-sourced synthetic drug supply chains, paralleling Hong Kong’s role in China-sourced synthetic drug supply chains. Dubai also has significant organized criminal links with sub-Saharan Africa in this dataset, particularly in the illicit arms and gold smuggling trades. These include Dubai-based entities linked to the Belgian international gold smuggler Alain Goetz, who has played a key role in financing the operations of armed groups in the DRC, and also operated sanctioned entities in the European precious metals and gems trading hub of Antwerp. Meanwhile Dubai’s historically most famous arms smuggling resident, Victor Bout, had relocated to Russia (see Davidson 2008) by the time he was sanctioned by the US in 2005 for his involvement in DRC arms trafficking, with most of the Bout-linked sanctioned entities in this dataset located in Sub-Saharan Africa.

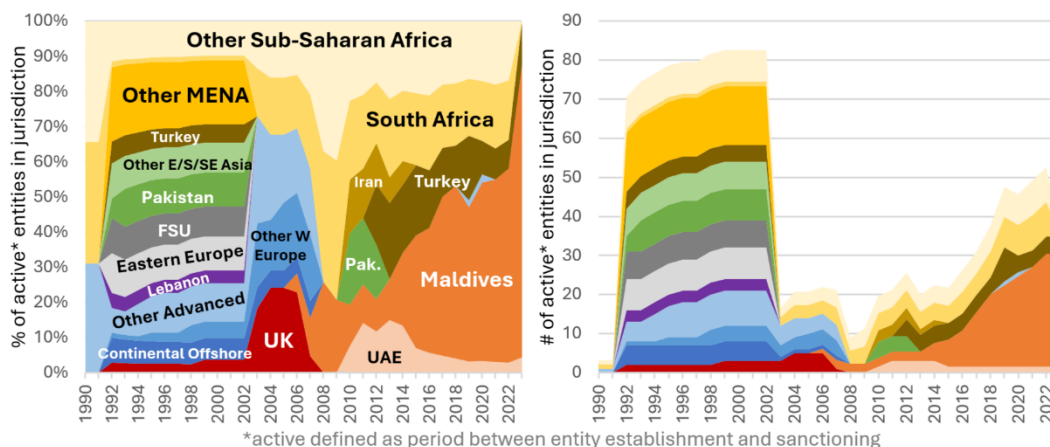


Figure 10. Terrorism (excl. Iran allies)-linked entities –Active* US Sanctioned Cross-Border Entities by Hosting Jurisdiction, 1980-2023

Notably, the rise of the Dubai-Kong axis is not visible in all categories of US sanctioned networks. As shown in figure 10, *non-Iran-linked* terrorist networks appear to have been largely smashed in the wake of the September 11 attacks, and to have been subsequently reconstructed—primarily by ISIS and its various affiliates—in peripheral locales across Sub Sharan Africa and the Indian Ocean region (with the particularly large number of Maldivian

entities attributable to a single ISIS-K-linked cell). The use of such peripheral locales appears to reflect the use of a geographic *dispersal*-based detection avoidance strategy, with the exceptionally high and uniform international pressure placed on non-Iran-backed terrorist networks apparently making it impossible for them to operate in *any* major financial centers.

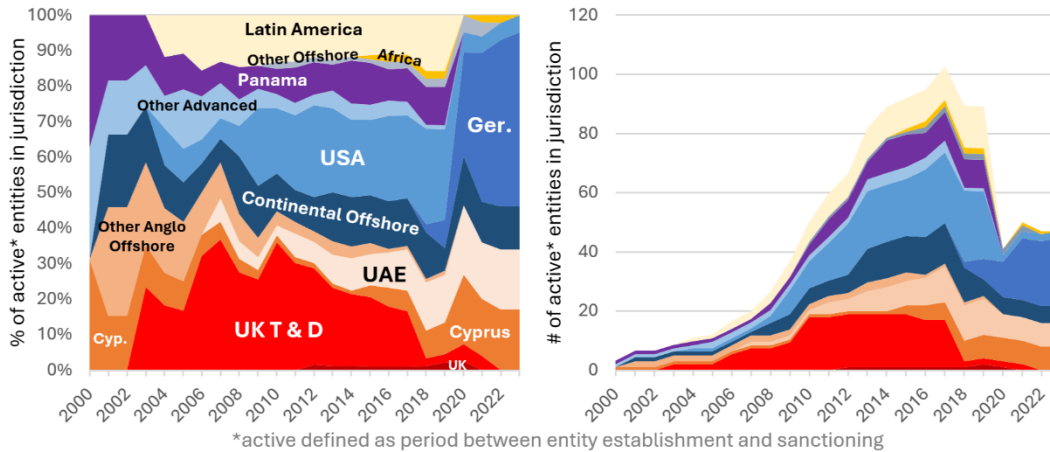


Figure 11. Corruption-linked entities – Active* US Sanctioned Cross-Border Entities by Hosting Jurisdiction, 1980-2023

Sitting at the opposite extreme to the non-Iran-linked terrorist networks, in terms of the duration, intensity, and uniformity of the US and broader international pressure directed against them, are corruption-linked financial networks not otherwise targeted by the US for geopolitical reasons. These have mostly been sanctioned by the US under the 2016 Global Magnitsky Act (Booth 2020; Firestone and Contini 2018). Strikingly, the geography of these networks, in contrast to all other types of networks examined here, appears to shifted relatively little, rather showing a pattern of geographic *persistence* in leading western financial centers. As corroborated by other datasets of corruption-linked entities (e.g. PEP-linked entities in the Panama and Paradise Papers, or US FCPA case data; see Haberly et al. 2023; Haberly, Garrod, and Barrington, 2024), the UK’s Overseas Territories and Crown Dependencies appear to be the most important centers of entity formation in these corruption-linked networks—with BVI (as in the organized criminal networks) in the lead, followed by Gibraltar. As in the Russia-linked networks, many of these entities are also likely tied to London in ways not directly visible in this dataset, including property investment, and the obtaining of financial and business services from London-based providers that have not themselves been sanctioned. Also important as corruption-linked entity hosts, particularly for Latin American clients, are Florida, Delaware, and New York, with entities based in these US states also often linked to Panama-based entities. The “Continental offshore” jurisdictions (as recorded in the figures) also play a significant role in corruption-linked financial networks, with Dutch and Swiss entities most heavily represented. Germany is also a significant corruption-linked entity host in this dataset, although its abrupt recent rise is driven by a single prolific Afghan network, making it unclear whether this is more broadly representative. More broadly, the shorter time series and smaller number of underlying actors behind this category of entities, in comparison to the others examined here, make it difficult to draw conclusions from shifts in the early and later part of the figure (which in contrast to the other figures starts in 2000 rather than 1980, due to data availability considerations). There does, however, appear to be a

long-term increase in the role of the UAE in corruption-linked networks, albeit to a still relatively modest position in 2023 compared to the role of western countries and their overseas territories.

7. Conclusion

Taken together, the data in this paper paints a complex, and in some respects paradoxical picture of the impact of US sanctions on the global financial system, over the past few decades; wherein the shifting of financial networks away from established architectures on the one hand, and the perpetuation of these architectures on the other, seem to operate as much in conjunction with as in opposition to one another. Indeed, the sweeping geographic relocation of sanctioned global financial networks from London to the “Dubai-Kong axis” ironically seems to be a product of the efforts of actors to maintain as much financial institutional and relational *continuity* as possible, in their operations, by remaining within the broader architecture of Britain’s global financial “second empire.”

To summarize, the geographies of different types of sanctioned networks appear to have evolved in qualitatively different ways chiefly as a function of the interaction between 1) the intrinsically centralizing and path-dependent geographic evolutionary logic of global financial networks, and 2) the duration, intensity, and uniformity of international pressure directed against particular categories of sanctioned actors. At one extreme, corruption-linked financial networks targeted by the US and its allies for non-geopolitical reasons—which have only recently fallen into the sanctions crosshairs—show a pattern of *persistence* wherein they have apparently continued to operate in traditionally dominant western financial hubs and incorporation hubs, including US states and UK overseas territories. Meanwhile, at the other extreme, non-Iran linked terrorist networks have apparently been pushed by intense concerted international pressure to the periphery of the global financial system, in a logic of *dispersal*, despite the impairment that this likely represents for their global reach.

Crucially, however, the evidence here shows that the most important US sanctioned global financial networks, namely those linked to Russia, Iran, and organized criminal groups, have not followed either of these patterns, but rather an intermediate logic of the *centralized relocation* of activity within the core structures of the global financial network. Above all, this has involved a large-scale shift in the geography of activity within of Britain’s so-called post-colonial “offshore archipelago,” away from the UK itself, and its immediately controlled overseas territories and dependencies, and into formerly UK-ruled international financial centers that retain strong links to London but fall outside of its political jurisdiction. Notably, in absolute terms, the UK has preserved its relational position in these networks; however, in relative terms, it has fallen from being the single most important global network node in the pre-2002 period, to being overshadowed by ex UK-colonial offshore jurisdictions, and above all the “Dubai-Kong axis.” The latter has come to play a remarkably dominant role in sanctioned financial networks, with the UAE and Hong Kong now hosting roughly one third of all cross-border sanctioned entities,

and accounting for roughly half of the total worldwide connectivity of all sanctioned networks, including a deep pipeline of connections with each other.

At least part of this shift appears to be attributable to the changing global IFF regulatory geography of AML/CFT compliance and financial transparency, wherein the UAE in particular scores relatively poorly—as reflected in its 2022-2024 grey listing by the FATF (Mhaoud, Flydal, Sbouai, and Repeckaite 2024; TJN 2022; TI 2024). Also scoring quite poorly on metrics of AML/CFT compliance and financial transparency (and likewise grey listed by FATF from 2021-2024; Hayatsever and Butler 2024) is Turkey, which has emerged as a key secondary coordinating hub in US sanctioned networks, with strong links both the UAE and Hong Kong (Haberly, Gullo, Shipley, Boukal, Palansky and Barrington, 2024). However, these IFF regulatory and compliance factors ultimately appear to be largely secondary to other deeper processes shaping the evolution of these networks. Indeed, if the uneven international IFF regulatory and compliance geography was the principal driver of the evolution of these networks, they would likely be moving into the United States, due to its exceptionally acute regulatory lapses in these areas (which arguably exceed those in e.g. the UAE or Turkey; see Bullough 2019; Haberly, Gullo, Shipley, Boukal, Palansky and Barrington, 2024; Mansour 2022; TJN 2022). This is in fact what does appear to be occurring in many of the corruption-linked international financial networks documented in US Foreign Corrupt Practices Act (FCPA) cases—wherein the US appears to be increasingly replacing Switzerland as an international banking center, while US states are heavily represented as shell company formation jurisdictions (as also found in the corruption-linked sanctioned networks here; Haberly, Garrod, and Barrington, 2024). Similarly, the IFF regulatory and compliance map does not explain the apparent collapse of Panama’s position in illicit financial networks, at least as suggested by the data here, given that Panama has apparently remained one of the most poorly performing offshore jurisdictions in AML/CFT stringency (see Haberly, Gullo, Shipley, Boukal, Palansky and Barrington, 2024), spending all but two years from 2014 to 2023 on FATF grey lists (Moreno and Hilaire 2023).

What ultimately appears to be of decisive importance in this context is politics. In the case of Panama, the release of the Panama Papers themselves seems to have been the event in this respect, which prompted an unprecedented US and broader international assault on Panama-based illicit financial networks, and may have damaged its long-term reputation as a secrecy jurisdiction (also see Palansky 2024). Meanwhile, in the case of the role of the US itself as host for illicit financial networks, there appears to be a fundamental divide between its apparent regulation-driven attractiveness as a host for the proceeds of corruption and other illicit financial activities which are not of direct international geopolitical or domestic security or law enforcement concern, and the systematic avoidance of the US, as a financial hub, by state and non-state actors who are political prioritized as security concerns.

Notably, the US has a longstanding history of applying a much more hostile approach to the treatment of the global financial networks of its ideological or geopolitical rivals—from the USSR, to Cuba, to Iran—than most of its allies. However, what has changed in recent years is the aggressiveness with which the US has now compelled these allies to adopt such a hostile

approach themselves, which has crucially also dovetailed with growing domestic concern in many of these states over the international financial networks used political rivals (e.g. Russia), as well as various illicit activities including the financing of terrorism. This has entailed particularly dramatic changes in the UK, along with its Overseas Territories and Crown Dependencies, which appear to have abandoned their historical take-all-comers attitude to welcoming the financial activities of regimes ranging from the USSR and its successor republics, to post-revolutionary Iran, to Saddam Hussein's Iraq (see e.g. Bullough 2022; Heathershaw et al. 2021)—even if non-geopolitically prioritized illicit financial activities and networks still appear to be present in abundance. Similarly, ex-UK colonial offshore jurisdictions within the EU, and in particular Cyprus and Malta, seem to have disappeared from Iran's international financial networks, with the financial networks of sanctioned Russian actors also under intense pressure (Smith 2023). Even Switzerland, notwithstanding its continued official stance of political neutrality, has succumbed to overwhelming pressure from other western states to participate in sanctions against Russia (Teichmann and Wittmann 2024).

With their previously used western centers of global financial operation rendered increasingly inhospitable, US geopolitical rivals have apparently recentralized their international financial networks in a handful of leading non-western financial centers which provide both the closest available analog to the institutional ecology of (e.g. in the availability of common law legal facilities for international finance, as provided in the DIFC in Dubai, as well as the representation of key Anglo-American Financial and Business Services firms), and offer the strongest possible connections to, their traditional global financial hubs—and above all London. Beyond providing this combination of institutional and relational congruencies with and ties to the Anglo-American core of global finance, Dubai and Hong Kong also serve as key foci for overlapping regional business and financial diaspora communities and networks, with particularly strong and deeply historically rooted links to (between them) Iran, Russia, South and Southeast Asia, and mainland China. This has made these centers natural western and eastern termini, respectively, for the new trans-Asian “guerilla” trading and financial system that Iran and Russia have constructed to replace their historically Europe-centered trading and financial relationships.

These new centers and structures effectively serve as convenient London substitutes for their users, without carrying the geopolitical baggage of operating within the West itself. Paradoxically, however, the very facility with which they have been used, to conduct activities formerly based in London, has arguably created a geopolitical bind for both western states and their sanctions-evading adversaries. On the one hand, for western rivals, the very ease of relocation afforded by the global UK's post-colonial financial archipelago has paradoxically perpetuated their historical financial institutional and relational dependence on, and more broadly entanglement with, the core Anglo-American power centers and institutions of global finance—even if this dependence is now more indirectly structured than in the past. These US rivals now find themselves confronting the question of whether to attempt to more comprehensively sever or restructure their continued linkages to this Anglo-American-centric global financial architecture, and thereby run the risk of further marginalizing their own global financial reach and influence. Meanwhile, western states themselves, having now apparently pushed

geopolitically prioritized sanctions evaders (even if not illicit financial networks in general) out of their own borders, find themselves confronting the question of how much pressure to place on leading non-western UK post-colonial financial hubs, such as the UAE or Hong Kong. Paradoxically, even while enabling western adversaries, these places are now more critical than ever to the overarching reproduction of the West's broader global financial institutional and relational network dominance—which appears to be at risk of being seriously damaged if excessive pressure is brought to bear on key geo-financial interlocutor jurisdictions. In this sense, the “Dubai-Kong axis” can be described as sitting at the center of a two-sided logic of mutually assured global financial destruction, from the standpoint of both the US and its allies, and their adversaries, which is inherently unstable, yet also inherently difficult to escape from, for all parties involved. How this logic will play out—wherein the status quo financial architecture is in effect both unacceptable and necessary for all involved—is extremely difficult to predict.

Acknowledgements:

This research has been supported by funding from the Governance and Integrity Anti-Corruption Evidence (GI ACE) program. I would like to thank the ACE program directors, Paul Heywood and Heather Marquette, for their support for this work, Robert Barrington, Georgia Garrod, Tom Shipley, Tomas Boukal, Miroslav Palansky, and Tereza Palanska, for their broader collaborative work on this project, including input into this paper, and all those who generously contributed their time and expertise to the series of workshops in which we discussed the findings in this paper, which has benefited greatly from their feedback and comments. Selected portions of the findings in this paper were previously published in Haberly, Garrod, and Barrington (2024). The views expressed in this paper, along with any errors or omissions, are solely those of the authors, and should not be attributed to the individuals who contributed their comments to this work, or their respective organizations.

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