

Waging Financial Warfare: Why and How

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ABSTRACT: This article introduces financial warfare as a valuable and innovative tool for deterring the sponsors of the “little green” and “little blue men” of proxy warfare. By analyzing the economic terrain, financial trace, nodes, and edges of a sponsor’s financial networks, US policymakers can develop, plan, and deliver financial deterrence necessary to support international stability as well as to persuade or coerce an adversary by increasing the costs of their wars.

In an era of proxy conflicts—such as Russia in Crimea and Ukraine, China in the South China Sea, and Iranian proxies in Iraq and the Levant—financial power may offer the United States the greatest capability to counter our adversaries’ “little green” and “little blue men.”¹ Financial power is simply the means to make warfare—or anything for that matter—more or less costly. Extracting a cost from our adversaries by collapsing a single transaction, a single enterprise, or their entire defense industrial base provides the United States with a potentially unmatched deterrent capability useful in conventional and unrestricted warfare.²

Without innovating our strategic capabilities, America may have no option other than sending its fleets into the cauldron of the South China Sea in response to China seizing and militarizing islands hundreds of miles from its shores, intimidating the region using the little blue men of its maritime militia, restricting freedom of navigation, enforcing the self-declared air defense identification zone, and rejecting international law.³ Without innovating our tactical capabilities, North Atlantic Treaty Organization (NATO) tanks and troops may have to respond conventionally to an expansionist Russian state emboldened by the success

1 For more on the development of the term little green men in reference to unconventional troops, see Vladimir Zinin, *Igra v soldatikov: pochemu reputatsiya armii okazalas' pod ugrozoy* [Playing soldiers: Why the army’s reputation is threatened], *Gazeta.ru*, July 22, 2015, http://www.gazeta.ru/comments/2015/07/22_e_7652977.shtml; and Alexander Anichkin (2014). *Zelenyye belovechki* [Little green men] *Tetradki* [Notebooks] (blog), March 13, 2014, <http://european-book-review.blogspot.com/2014/03/little-green-men.html>. Little blue men similarly refers to irregular maritime militias, see Simon Tisdall, “Little Blue Men: The Maritime Militias Pushing China’s Claims,” *Guardian*, May 16, 2016.

2 For more on the importance of the supply chain that forms the defense industrial base, see M. Thomas Davis, “Blog: The Incredible Shrinking Defense Industrial Base,” *Signal*, June 16, 2105. For more on “unrestricted” reflecting the multifaceted approach to modern power projection, see Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Beijing: PLA Literature and Arts, 1999).

3 Andrew S. Erickson and Conor M. Kennedy, “Irregular Forces at Sea: ‘Not Merely Fishermen’—Shedding Light on China’s Maritime Militia,” Center for International Maritime Security, November 2, 2015; Alex Linder, “China Swiftly Rejects Hague Tribunal Ruling against Its South China Sea Claims,” *Shanghaiist*, July 12, 2016, shanghaiist.com/2016/07/12/china_rejects_hague_ruling.php; and “Arbitration Award More Shameless than Worst Prediction,” *Global Times*, July 12, 2016, <http://www.globaltimes.cn/content/993855.shtml>.

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of its special forces and irregular troops seizing Crimea, segmenting the Ukraine, and exporting irregular war to Latvia, Estonia, or Lithuania.⁴

Even though America fought successfully against Iranian proxies, such as Muqtada al-Sadr's Jaysh al-Mahdi militia in the battle of Najaf in 2004 and Qais al-Khazali's Special Groups in Iraq thereafter, conventional constraints failed to limit Iran's expansion in the Levant and its influence over Iraq.⁵ The South China Sea, Ukraine, Crimea, Iraq, and the Levant illustrate how state-sponsored unrestricted conflict has become the core of adversarial power projection. Adversaries' asymmetric capabilities are outpacing US strategy, and America faces a conundrum—escalate to conventional war or give ground to new threats.

When the United States projects power, it operates through four principal avenues: military, diplomatic, information, and economic. Financial power, or the capacity to leverage capital or money, has typically been considered a subset of economics. Given the capabilities and effects of computer networks, particularly the internet, finance is separating from economics to become an affiliated but distinct channel suitable for power projection.

For the purposes of this paper, the delineation between finance and economics uses Yale Professor Paul Bracken's definition: "The economic system deals with the hard and soft outputs of the economy—that is, goods and services. The financial system deals with money and credit."⁶ Economics is simply the production and distribution of goods and services using three factors or inputs: capital, resources, and labor.⁷ Finance, what Bracken colloquially refers to as money and credit, is also the "system that includes the circulation of money, the granting of credit, the making of investments, and the provision of banking facilities."⁸

Financial power can be used to derive economic effects. Financial warfare can, at a minimum, disrupt the monetary foundations underlying production and distribution and, accordingly, disrupt an adversary's ability to produce and distribute goods and services. Such an attack would not only preclude an adversary's ability to transact (to price and exchange goods and services) but also to move, to aggregate, or to store capital necessary for production and distribution; in short, production and distribution would cease and the adversary's economy would collapse.

From another perspective, economic warfare tools such as blockades and embargoes target the distribution of goods and services—outputs. Since financial warfare targets capital, it collapses an input. Thus, economic actions like sanctions, blockades, or embargoes sever connections between the United States and its target; while financial

4 John R. Haines, "How, Why, and When Russia Will Deploy Little Green Men—and Why the US Cannot," Foreign Policy Research Institute (FPRI) E-Notes, March 9, 2016, <http://www.fpri.org/article/2016/03/how-why-and-when-russia-will-deploy-little-green-men-and-why-the-us-cannot/>.

5 Kimberly Kagan, *The Surge: A Military History* (New York: Encounter Books, 2010), 2.

6 Paul Bracken, "Financial Warfare," FPRI E-Notes, September 13, 2007, <http://www.fpri.org/article/2007/09/financial-warfare/>.

7 Factors of production are a neoclassical foundation of economics found in Adam Smith, *The Essential Adam Smith*, ed. Robert L. Heilbroner (New York: W. W. Norton, 1986), 151; more fully developed in David Ricardo, *On the Principles of Political Economy and Taxation* (London: John Murry, 1821), 24.

8 Merriam Webster, online, September 26, 2016, s.v. "finance."

power projection bolsters capabilities by maximizing connectivity to targets. Economic actions are unit step functions—for example, a blockade is a definitive, declaratory step, and an incomplete or partial embargo is not an embargo. As such, blockades and embargoes are poor tools for a proportionate response. Conversely, the finely graduated tools of financial power projection, which can target a single transaction or an entire industrial base equally well, offer a number of compelling advantages in comparison to the imprecise consequences of economic power.

Financial power works in physical and electronic dimensions, and though existing financial markets (open market operations).⁹ An advantage of financial power projection is that its indirect or derivative approach to economic production and distribution presents less surface area for adversaries to exercise intelligence collection on, or to react against. Because it offers an indirect, misattributable or even unattributable approach, finance has significant potential for actively managing the risk of responding to any adversary.

Responding to Contemporary Conflicts

The wars confronting America today incorporate a range of different combat modes including conventional capabilities, irregular tactics and formations, and terrorist acts that include indiscriminate violence and coercion as well as criminal disorder. Such wars allow the sponsor to operate between the traditional means of state power projection by using nominally nonstate entities to conceal themselves from conventional retaliation. Since conventional military formations pursuing total war could easily destroy these irregular formations, the use of nontraditional means preserves the sponsor's ability to project power in operations short of conventional war, fueling and supporting strategic deterrence.

Further explained, such “deterrence is the manipulation of an adversary's estimation of the cost/benefit calculation of taking a given action”; thus, “by reducing prospective benefits or increasing prospective costs (or both), one can convince the adversary to avoid taking the action.”¹⁰ The strategic deterrence aspects of such tactics facilitate Russia's maintenance of its enclaves in the Ukraine, China's fortified islands in its near seas, and ongoing Iranian hegemony in the Levant.

Mechanics of Deterrence

Russian, Chinese, and Iranian deterrence strategies are conducted through military, diplomatic, and economic coercion of their neighbors, the United States, and other adversaries. This form of deterrence requires

⁹ Electronic means include analog approaches that might disrupt the reliability of power generation, transmission, or usage. Cyber or digital means, a subset of electronic which includes analog, range from data manipulation in ledger systems to targeting core systems and interfaces as well as the reach and consistency of rule schemas inside liquidity markets (stocks, bonds, commodities, etc.). Cyber operates at microsecond speeds, which may exceed an adversary's ability to measure and to assess its effects. This speed introduces uncertainty and indeterminacy that may suppress or delay counteraction. The speed also enables the creation of waves and wave-centric methodologies that use sequenced, discrete vectors at various frequencies. This capability can create powerful waves of price, supply, and duration volatility that travel across markets, geographies, and time. Such waves can exploit discrete vector strikes as well as adversarial and allied actions and reactions on an aggregate or cumulative basis.

¹⁰ Austin Long, *Deterrence from Cold War to Long War: Lessons from Six Decades of RAND Research* (Santa Monica, CA: RAND Corporation, 2008), 7.

constructing a known status quo, a mutually understood level of conflict, or nonconflict, within which participants manage risks and expectations.

For example, because the Russians, Chinese, and Iranians cannot compete independently with the current militaries of the United States and its allies, they will pursue actions short of direct military engagement. Consequently, the Russian, Chinese, and Iranian perspectives and decision calculi rely on the absence of direct conventional military-to-military engagement. If the United States or any protagonist is unwilling to challenge the status quo ante by supplemental or innovative actions, then, by definition, they capitulate to the antagonists' actions.

In order to manage multiple conflicts of this type while simultaneously invalidating their deterrent strategies, the United States must develop new ways to project power, and challenge, change or annul the adversaries' decision calculus. Financial power disrupts calculability because it operates outside the Russian, Chinese, and Iranian formulations of deterrence, introducing new and unique variables. Socialist or sectarian political economies subordinate the independence of individual actions to centrally administrated ideology or oligarchy. The subordination of individual financial actions is enforced by constraining capital liquidity, storage or transport to the needs of the State. Ultimately, China, Russia and Iran are at a direct disadvantage to capitalist economies because they are, by definition, less capital efficient. Financial power exploits this disadvantage.

The Object of Financial Warfare

Analogous to military art, combat in financial warfare is conducted through the engagement. The object of the engagement in financial warfare is the adversary's capital.¹¹ The engagement is the only means of destroying the adversary's capital, and it may come in the form of a direct attack on primary capital or an indirect attack on secondary and tertiary capital components. Primary capital is internal and inseparable from the enterprise; it is an input to, and a factor of, production. Capital includes cash, liquid investments and the value of raw materials, works-in-process, and finished goods inventories. If primary capital is removed, the enterprise collapses.

Secondary capital components are debt and equity, which are sold by the enterprise in exchange for cash, i.e. primary capital. Both debt and equity, secondary capital components, facilitate the formation of primary capital, provide a channel to it, and exercise a claim upon it. Secondary capital differs from primary capital in two respects: it does not organically possess capital functions, and it is external to the enterprise.

Tertiary capital components were created to provide the functions of capital to secondary capital components. Examples of tertiary capital components include depositories, markets: stock; bond; foreign currency; and commodity markets, and systems infrastructure: credit and debit cards; ATMs; point of sales; and real time gross settlement systems.

11 Carl von Clausewitz made an off-handed comparison between war and finance: "The decision by arms is for all major and minor operations in war what cash payment is in commerce." While Clausewitz may have used the concept as a background metaphor, the similarities were apparent to him. Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret, (Princeton, NJ: Princeton University Press, 1976), 97.

In financial war, engagements are fought in physical and electronic dimensions. Physical or digital capital can be attacked by engagements in those dimensions. In addition to physical and electronic engagements, tertiary capital components can be reduced through degrading their ability to provide capital liquidity—storage or transport.

Financial warfare can reach deep into the interior of a country, a hostile territory, or a denied area to project national power through supply and logistics chains. Industrial economies producing complex products, for example automobiles, use a sequence of specialized manufacturers, a supply chain, with each manufacturer purchasing raw materials (inputs) for their production, maintaining in-process inventory, and outputting finished goods. These outputs become inputs for downstream manufacturers in the supply chain. The transactions between or among specialized manufacturers in a supply chain are generally explicit and priced.

An adversary's defense industrial base—entirely, by industry, by geography, or through an individual transaction of a single enterprise—can be attacked through capital-value transiting supply and logistics chains. Capital value of raw materials, work-in-process or finished goods inventories can be attacked by injecting or engineering volatility into their price, transit duration, or supply. Whipsawing price—creating sequential stock-outs and gluts that starve and then flood a market—at one component of the supply chain will cascade to other downstream companies. If any part of a supply chain is reachable, then all parts of the supply chain can be affected. In other words, risk to the entire supply chain is affected by variance in the risk to any single link.

The ability of finance to reach within and among enterprises in a supply chain is only one vector into a target economy. Engineering contagions or cascade failures based upon bank lending, credit expansion, direct investment, and currency exchange are obvious additional vectors.

Contemporary gray-zone warfare is designed to present a level of conflict that appears unreachable by conventional means. By using financial vectors exogenous to the conflict state, the United States can introduce an entirely new category of risk, financial risk, into the conflict causing a change in valuation between risk and reward. This condition can increase enterprise and supply-chain risk, raising expenses and eroding the commercial capabilities of the sponsor's supporting infrastructure, defense industrial base, or a vital national interest. Financial risks can be increased to burden a conflict's sponsor with greater expenses. Timing financial engagements to an adversary's actions reinforces the immediacy of costs to the sponsor.

Financial strikes can manipulate spot and structural volatility to induce liquidity crises and bankruptcies for a locality, region, or province as well as a political leader, party, or regime. While the results of financial power can be used to coerce and change the decision calculus of policymakers, financial power can also persuade a sponsor's commercial competitors to expand and to challenge them for market share. Sequential, multivector financial engagements can be used to engineer contagions, cascade failures, or Black Swans while remaining almost undetectable. Such financial campaigns can shape the adversary's

economy towards fragility by incentivizing over centralization and socialization of risk as well as promoting asymmetry, agency, and opacity.

Terrain Maps and Traces

The first step in financial power projection is targeting, which requires the national authority, department, agency, or combatant command to develop a detailed economic terrain map and financial trace of the target to construct accurate, precise, and specific financial vectors. An economic terrain map is a networked view of a targets' productive, distributive and systemic activities over a physical and virtual geography identifying integration points among the target, its vendors, its customers, and the relevant economies, which are all potential disintermediation targets.

A basic accounting of the factors of production—resources, capital, and labor—reveals how the target produces and distributes goods and services. Other characteristics—such as the costs, returns, and margins from component business processes; the mix of sales, income, and profit from consumer, industrial, reseller, and government markets; and the explicit and the reimbursed products or services delivered to the government—also help quantify potential leverage points by detailing the breadth of the target's business.

In addition to identifying productive activities, the economic terrain map should provide a comprehensive and detailed picture of the target's distributive activities including the logistics channels that move goods from production to consumers and critical factors of time, place, and possession that separate goods from consumers—for example, what factors might inhibit the delivery of seafood in Chinese maritime militia trawlers to purchasers?

Once the target's economic terrain is mapped, a financial trace of that economic space is made. This trace identifies and details the financial providers, networks, mechanisms, operations, and infrastructure that enable the target's capital liquidity, storage, and transport activities at the primary component level. Tracing the secondary and tertiary asset-liability network for both current assets such as working capital, credit lines, bank accounts, raw material, and work-in-progress inventories, as well as long-term assets such as owners' equity and infrastructure illuminates who is at risk.

From this financial trace, the appropriate network nodes—individuals, vendors, suppliers, commercial industries, and government entities, as well as the connecting edges that include transaction and payment networks can be identified. Namely, the nodes clarify where liability, risk, and reward reside, and the edges show how those elements flow across the network. The financial trace prioritizes vulnerable nodes and edges by their capacity to bear or transmit risk or loss.

In the case of a targeted enterprise and its customer conducting a sales transaction in physical cash, for example, the targeted enterprise will probably deposit its revenues into a depository (a bank) at some point. If the buyer uses another notional form of capital such as a credit or debit card instead of cash, then both parties to the transaction must have systems and depositories to provide liquidity, transport, and storage for their capital. The transaction, its supporting systems and

depositories are all available targets. Thus, traces are subject to multiple means and methods of attack whose results may range from isolating the target from its financial service providers; collapsing its ability to transact, move, or store capital; or bankrupting it.

Targeting

Financial power projection, in many ways like artillery or missiles, ranges from unguided to precision-guided vectors against an adversary efficiently and effectively delivering payloads adapted for point, area, or system targets. Point targets involve a specific transaction, a store or a transport of capital, or an individual enterprise. Area targets pinpoint grouped or associated transactions, stores or transports of capital, or associated enterprises such as a supply chain. System targets encompass liquidity markets (such as stock, bond, or commodity markets), industries, geographies, or an adversary's entire economy. In summary, targeting financial power can be graduated from capital in specific productive or distributive activities inside a single company to sovereign systemic targets that include money supply and circulation velocity.

In overview, the financial targeting process begins with the desired outcome: specific outcomes require specific inputs while generalized outcomes may have arrays of complementary inputs. Each outcome sought must be described in terms of the effects or characteristics desired, which include:

- Scale—Is the outcome to encumber a single transaction of a single company or stop all financial activity within an adversary's economy?
- Speed—When is the outcome required in relation to the theoretical or practical delivery speeds of the available tools?
- Duration of effects—Should the outcome's duration be instantaneous or occur over decades or more?
- Intensity of effects—Within the scale and duration of an outcome, how intense are the desired effects—should the efficiency of an activity be reduced or be collapsed entirely?
- Overtness of means—How profound is the risk to the initiator, their sources, or methods—overt, covert, or clandestine?

Combining the desired outcome with the mapped terrain and trace, the determinations of critical requirements and vulnerabilities can be made. The means employed—physical, electronic, or open market—must be determined. Metrics, channels, and vectors must be detailed. Cost must be determined. If a networked target is involved, consideration must be given to constructive and destructive interference to preclude unintended consequences. If approaching the target through cyber methods, amplitude and frequency of volatility wave functions must be examined. Lastly, financial power projection can be formulated to occur independently, in coordination with, or in support of other activities.

To illustrate, the desired outcome might be to collapse the supply chain of a Chinese maritime militia company of “little blue men” to preclude its provocative actions against US naval forces conducting freedom of navigation operations in the South China Sea. Scale, speed,

duration, intensity, and overtness should factor in the timing, scope, and scale of the US exercises and the probable Chinese response.

A critical miscalculation of many contemporary deterrent strategies is the assumption that the sponsor's receipt of economic benefits will remain unchanged even though they segment or destroy the commercial commons from which those benefits arise. China's operative assumption in the South China Sea, for example, assumes it can deconstruct or segment the global maritime commons militarily through anti-access/area denial tactics while continuing to receive the commercial benefits, i.e. seaborne exports and maritime commerce, of a global commons.

Economic and financial systems are, by definition, networked. Removing the South China Sea from the global maritime commons renders the commons less than global in scale. Regardless of China's locality advantage and the volume and range of its missile and aircraft coverage, commercial craft seeking to leave or to enter the South China Sea are eventually outside China's physical power-projection capabilities and their transit is dependent upon US acquiescence.

Similarly, Russia's seizure of Crimea and part of eastern Ukraine through proxy forces of "little green men" segments the network of sovereign and legitimate territorial control in Eastern Europe; however, Russia's economic assumption appears to be one of uninterrupted trade. Likewise, Iran's expectation is that the use of its proxy forces in the Levant and Yemen will have little impact on their hydrocarbons export and Persian Gulf maritime commerce.

The economic commons in these cases, the South China Sea, Eastern Europe, and the Persian Gulf are being segmented or removed from the global economic commons. This expulsion increases the risks and expenses as well as distance and duration for trade. Financial warfare is designed, at a minimum, to capture and deliver these increased costs to the conflict's sponsors.

Conclusion

Financial power may enable the United States to develop and to present the contemporary sponsors of aggression with the costs of their actions at net present value, which will reduce prospective benefits and increase prospective costs both directly to the sponsor and inversely to their competitors. America should meet the Russian, Chinese, and Iranian challenges by developing and presenting financially enabled forward contracts, i.e. deterrent strategies, to its adversaries. Moreover, the United States should match an aggressor's activities with concurrent deterrent responses of similar magnitude, and duration.

Financial warfare is an appropriate means: it has the breadth and depth to project power in a fashion suitable to achieve national policy goals. As an innovation, not just of means and methods but of efficacy and efficiency, financial warfare creates and uses a new channel for power projection to support national aims. Because finance can directly or indirectly touch every aspect of economic activity, financial warfare can accordingly range across the entire spectrum of economic responses to an adversary's actions accurately, precisely, and proportionately.

Financial warfare can endow the United States with an unmatched deterrent capability useful in conventional as well as other wars. Creating a financial warfare capability initially requires the data and the analytics necessary to build economic terrain maps and financial traces. Then, the United States must create internal and external government competencies to exercise physical, electronic, and open-market means against primary, secondary, and tertiary capital components of selected targets, independently and within campaigns.

Financial warfare offers a number of compelling advantages. America's use of financial warfare will gain strength over time by maximizing connectivity to, and penetration of, targets and by providing precise, proportionate responses. Lastly, financial warfare can help America counter, if not preempt, an adversary's nontraditional warfare capabilities.

