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14. ABSTRACT The United States has successfully used economic and financial warfare in the past to achieve its strategic goals. Those methods have tended to rely on several preconditions: 1) the dominance of the U.S. dollar as a global currency and a suitable global reserve; 2) the relatively strong economic fundamentals possessed by the U.S. and its presence within the global economy; and 3) trust by the market that the U.S. dollar will preserve its value. In a future where these preconditions begin to wane, where the global market no longer trusts in the value of the U.S. dollar and is actively seeking alternative methods of transaction that by-pass the U.S., the ability of the U.S. to execute financial warfare will correspondingly decline. The U.S. will thus be forced to examine other means of waging financial warfare that would not rely upon the above mentioned preconditions. One method is to directly attack economic confidence of the adversary via exploitation of unstable equilibriums and market opacity.					
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FUTURE WAR PAPER

Financial Warfare of the Future

**SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF OPERATIONAL STUDIES**

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I. EXECUTIVE SUMMARY

Title: Financial Warfare of the Future

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Thesis: In a future of diminished U.S. dominance in the global financial market, the U.S. will need to be prepared to execute financial warfare differently. One method is to directly attack economic confidence of the adversary via exploitation of unstable equilibriums and market opacity.

Discussion: The United States has successfully used economic and financial warfare in the past to achieve its strategic goals. Those methods have tended to rely on several preconditions: 1) the dominance of the U.S. dollar as a global currency and a suitable global reserve; 2) the relatively strong economic fundamentals possessed by the U.S. and its presence within the global economy; and 3) trust by the market that the U.S. dollar will preserve its value. In a future where these preconditions begin to wane, where the global market no longer trusts in the value of the U.S. dollar and is actively seeking alternative methods of transaction that by-pass the U.S., the ability of the U.S. to execute financial warfare will correspondingly decline. The U.S. will thus be forced to examine other means of waging financial warfare that would not rely upon the above mentioned preconditions.

Conclusion: All economic systems are based on expectations and trust. When trust is disrupted, the ability of an economic system to function is severely impeded, causing physical impacts such as unemployment, loss of production, as well as cessation of trade and basic services. Market confidence can be attacked by exploiting existing or created unstable equilibriums, as well as consumer responses to an opaque price discovery process.

II. A PRIMER ON ECONOMIC AND FINANCIAL WARFARE

The expression of national power is categorized in four general groups: diplomatic, informational, military, and economic. Economic power can be further broken down into several different subsets, to include production, trade, and finance. History has many examples of nations coercing one another through production or trade. A well-known manifestation of economic power via trade is the embargo. However, an embargo usually requires several preconditions to be effective. One, the target country must need something, for example Widget A, from the international market. If the target country is completely self-sufficient, then an embargo will not work. Two, the attacking country must have sufficient control over the world's supply of Widget A in order to make a unilateral embargo effective. If the attacking country does not control the world's supply of Widget A, then the country will either need to rely on a coalition to enforce the embargo (U.N economic sanction resolutions are an example of coalition-based embargo), or be willing to establish some form of military blockade to prevent other countries from trading with the target country. Three, the target country must not have something critically needed by the world market. When these preconditions are met, embargoes can effectively apply pressure to the leadership or citizens of a target country. When combined with other forms of national powers, an embargo can help achieve the desired political goal.

The growth in the global financial system enables a new type of economic power that nations can wield to pressure one another: finance. Historical examples of financial warfare abounds. During the 1956 Suez crisis, President Eisenhower used financial pressure to force America's allies, Britain and France, to pull back their forces from the Suez Canal. Eisenhower ordered the Treasury Department to dump British Sterling on the international market, depressing the value of British pound and making British imports more expensive. The U.S.'s

control of the International Monetary Fund (IMF) also allowed Eisenhower to block the IMF from giving emergency loans to Britain. Financial pressure worked and Britain soon capitulated¹. But even waging this kind of financial warfare requires several preconditions. One, the U.S. had to be a global economic power capable of controlling international financial institutions such as the IMF. Two, the U.S. was only effective because of Britain's weak post-WWII financial system. Three, the U.S. needed to possess a strong economic fundamental and global market power in order to both accumulate and sell British Sterling.

A more recent example of U.S. financial warfare is in its actions against Iran. The U.S. sought to destabilize the Iranian regime by denying it access to critical financial networks. In 2012 U.S. banned Iran from U.S. dollar payment systems, and banned any U.S. entity from doing business with Iranian entities or any other entities that do business with Iran from doing business with the U.S. The U.S. then used its political and economic clout to further exclude Iran from other global payment systems such as the Belgium SWIFT bank message system, and even gold. The results were devastating on Iran: it could not receive payment for its oil exports, and also could not pay for its imports (Iran is a major importer of refined petroleum products, food, and consumer electronics) because no one accepted the Iranian national currency, the rial. The rial subsequently collapsed, a run on the Iranian banking system commenced, hyperinflation ensued, and there was a general scarcity of food, gasoline, and consumer goods. But again, there were certain preconditions. The most important enabler of U.S. financial warfare on Iran was the universal acceptance of the U.S. dollar as the principle global currency; had the Chinese yuan or Russian ruble been the primary currency used by the international market to buy and sell oil, the Iranians would have fared much better².

The ability of the U.S. to wage economic warfare has thus far correlated with its overall economic strength. A nation with a strong economy and global financial presence can leverage its economic strength to influence another country's behavior. Ever since the Bretton-Woods conference in 1944, the U.S. has enjoyed unrivaled economic success relative to other nations. The U.S. dollar was accepted as a universal reserve currency and U.S. Treasury Notes became the only financial instrument with sufficient depth and liquidity to be traded in very large volumes on a global scale. Even more significantly, by 1975, all of the oil-producing nations of OPEC had agreed to price their oil in dollars and hold their surplus oil proceeds in U.S. government debt securities. Thus, for the last forty years, virtually all global oil transactions are settled in U.S. dollars. This forces all countries that rely on oil imports to maintain a surplus supply of U.S. dollars, which in turn makes these countries susceptible to embargoes and sanctions unilaterally dictated by the U.S. Even if country X does not need to trade with the U.S., country X still needs oil, and therefore still needs access to U.S. dollars. The U.S. can threaten to cut off country X's access to U.S. dollars, and hence country X's access to oil³.

However, given the U.S.'s current economic decline, the increasing uncertainty in the value of the U.S. dollar, the Euro's attractiveness as an alternative to the U.S. dollar, and the IMF's recent addition of the Chinese renminbi to the Special Drawing Rights (SDR) reserve currency basket⁴, the U.S. needs to adjust its approach towards the economic warfare of the future. As the Asian Infrastructure Investment Bank (AIIB) threatens to replace the IMF as a global source of investment capital, as the euro threatens to replace the dollar as the global reserve currency, and as alternatives to the U.S. dominated SWIFT interbank clearing system are being developed (for example the Chinese are developing the China International Payment

System (CIPS) as a global alternative to SWIFT), the United States' ability to wage economic and financial warfare may become diminished⁵.

III. FINANCIAL WARFARE AND CYBER WARFARE

There exists a large body of literature on how cyberwarfare can impact a country's financial system. The hacking of exchanges, spoofing of sales orders, and use of viruses to disrupt bank transactions or wipe out wealth are all example of cyber warfare. Conversely, financial warfare involves topics such as currency manipulation, attacking money supply, and leverage. This paper focuses on financial warfare and not cyber warfare.

IV. FINANCIAL WARFARE OF THE FUTURE: ATTACKING MARKET CONFIDENCE

In a future scenario where the U.S. no longer has global financial hegemony, the U.S. will need to explore other means to achieve the economic destabilization of a target country. One method is to examine the global financial system and the target country's financial system holistically to look for vulnerabilities to exploit. Past methods of directly attacking a country's money supply by isolating it from the international market may no longer be effective. So what are some examples of these vulnerabilities? *After some examination of the current global economic system, it becomes apparent that the key to economic stability is confidence*⁶.

Confidence in an economic system takes many forms. For examples, participants in the U.S. market need to have confidence in the value of the dollar. If participants believe the value of the dollar will drop, the participants will seek to offload the dollar in exchange for something more stable (i.e. gold or possibly the currency of another nation)⁷. More importantly, this offload may resemble that of a fire sale. As participants dump dollars onto the market in exchange for, let us say the Euro, this immediate oversupply of the dollar will cause the

exchange rate to further plummet, reinforcing the perception that the value of the dollar is dropping⁸.

To understand this point more clearly, let us examine the equivalent of this scenario in the stock market. Publications already exist on the idea of a state or non-state actors forcing a stock market collapse through well-timed deliberate short sells of stocks⁹. As these actors start dumping stocks and price begin to drop on the exchange rate due to supply and demand, regular investors will see this and wonder if there is something going on with these stocks which is causing market participants to unload. These regular investors may reach the conclusion that someone in the market has negative information on these stocks, which is why the stocks are being dumped. To avoid losses, these regular investors jump on the selling frenzy and sell their ownership of those stocks, causing a further price plummet and a general panic¹⁰.

So how do we identify and attack market confidence? The answer lies in looking for economic systems that are in an unstable equilibrium.

V. THE UNSTABLE EQUILIBRIUM

A basic economic principle of free market and supply / demand is the idea of a stable equilibrium¹¹. For example, an increase in price causes the market to react by lowering demand. If increase in price caused an increase in demand, then there will be runaway cycle of price and demand increase, which would be unstable. However, stable equilibrium requires transparency and information flow. If market participants suspect that they are at an information disadvantage, then they are unable to make fully rational choices. For example, person A sees an increase in the price of gas. With market transparency, person A understands that gas increased in price because of increased global demand. However, without market transparency, person A has no idea why the gas of price went up. Maybe it's because the world has run out of gas. Or maybe

it's because someone has insider information on an upcoming plan by the government to levy a drastic increase in gas prices. Thus market opacity causes person A to purchase as much gas as possible, even as gas prices climb because everyone else is purchasing gas.

Another example of an unstable equilibrium is the fractional reserve banking system. Currently, most countries (if not all) in the world use the fractional reserve banking system. While the benefits of a fractional banking system include allowing banks to offer interest-bearing checking accounts and an increase in money supply, the drawback is the risk of a bank run. At any given time a bank only has a fraction of deposit on hand (i.e. 10%), if more than 10% of the bank's depositors try to withdraw their money, the bank will face a liquidity problem. The bank may be perfectly solvent with the money sitting in good medium term investments, but because of the unexpected demand for withdrawal, it would not have money available. What's worse, this news will spread, causing other people to attempt to withdraw money from this and from other banks, which will cascade into a general bank run as banks are unable to pay out all of their on-demand checking accounts. Even one illiquid bank is enough to cause the entire system to fail¹².

This instability is well documented, and the government's solution is to establish an insurance program. In the U.S. the program is known as the Federal Deposit Insurance Corporation (FDIC). By guaranteeing all depositors' money, the government hopes to forestall a bank run. If the cause of the bank run was simply because the depositors fear their money will no longer be in the bank tomorrow, then the FDIC is an effective attempt by the government to fix an inherently unstable equilibrium¹³.

VI. HOW THE FDIC COULD FAIL

As with all artificial attempts at correcting for an unstable equilibrium, there exist a number of unpredictable and unforeseen factors that the original architect of the solution might not have accounted for. Continuing with the U.S. example, FDIC insurance was designed as a guarantee to the depositor for the value of their deposit, denominated in U.S. currency. If a depositor got nervous and thought he might lose his \$10,000 checking deposit at a local bank because there were rumors that the local bank would go bankrupt, he can rest assured that no matter what happens, the FDIC, and to a larger extent, the United States Treasury and the U.S. Federal Government, will make sure that the depositor gets his \$10,000, no matter what happens to the local bank. However, what if there are rumors that years of reckless money printing by the Federal Reserve has finally caught up, and the U.S. dollar will become massively devalued in the global market? Then the depositor will seek to preserve as much of his wealth as possible by converting the dollar into another currency, converting the dollar into gold, or purchasing real assets, such as land or a car. In any case, the depositor will want his \$10,000 from the bank as soon as possible. He doesn't care that the FDIC guarantees that he can get \$10,000 tomorrow or next week, because he believes that by next week the value of the dollar will have significantly depreciated. The depositor wants his money now, and so will everyone else. This will also cause a bank run, spreading panic, freezing liquidity, and grinding the U.S. economy to a halt.

The above example illustrates that in any economic situation where an unstable equilibrium exists and is artificially propped up by external forces, there is a potential to develop an operational method to destroy the unstable equilibrium. Continuing with the FDIC example, how would an operational artist in the future orchestrate such a collapse? The first step is to examine the opacity of market information. If the market of the future resembles the market of

today, then there exist many sectors of the market which are not transparent to the average market participant. This opacity leads to market uncertainty, which leads market participants to make less than rational decisions. This also feeds the fear of insider trading, since inefficient information flow means market activities will precede the availability of information explaining that activity. To use the stock exchange analogy, although stock traders will instantly see any dip or rise in stock prices that is above and beyond the normal market noise, the underlying market information on “why” is often not immediately available.

The second step is to use information operation and deception to either increase or reduce market ambiguity. In this case the operational artist would want to reinforce the perception that the U.S. dollar may soon undergo a large devaluation. This could be created by deliberately manipulating certain market signals and/or circulating false information. In a scenario similar to the current U.S. economy, such deliberate manipulation and mis-information may not even be necessary because there already exists a high amount of uncertainty and fear.

The third and final step is to create real market signals through actual transactions. This would require careful prepositioning and orchestration of covert actors. At the most opportune time, a number of covert actors, ranging from co-opted hedge funds and private wealth funds to co-opted individuals, begin to clamor and demand for their money. This real market signal will cause panic to spread as everyone else starts to suspect that the reason people are starting to withdraw money from banks and converting dollars into euros or other foreign currencies is due to insider information. The numbers of co-opted actors only need to be a small fraction of real market participants. The foreign exchange rate market will show a small but still noticeable drop in the dollar that is above and beyond the normal market noise. Everyone will see it and will assume that someone is acting on insider information, and will mimic the activity in an attempt

to jump ahead of the pack. This creates a cascading chain resulting in a bank run and rapid devaluation of the dollar.

VII. HOW THE BANK CREDIT FREEZE COULD HAPPEN AGAIN

Another way of attacking a market's confidence is through credit and leverage. Many banks are heavily leveraged with high debt to equity ratio. They borrow money in order to purchase assets, and count on the ability to renew their loans. If a bank suddenly is unable to secure a loan, then it will face a liquidity issue because its assets may not be readily convertible to cash. Because many bank's balance sheets are often intertwined (i.e. one bank would loan to another bank, who could use that money to loan to another bank), if one bank becomes insolvent, that will cause a cascading effect making all the other banks insolvent as well.

The opacity of modern financial institutions intensifies the problem by making it difficult to differentiate between illiquidity and insolvency. When a bank is unable to secure a loan and is unable to repay its obligation, it is unclear if this inability to pay is due to illiquidity or insolvency. Illiquidity happens when the bank has good assets that cannot be quickly turned into cash, such as a loan to a solid business. Insolvency happens when the bank has bad assets that it is unable to turn into cash at the value it wants, such as the equity tranche (known colloquially as toxic assets) during the 2008 global financial crisis¹⁴. Thus while the first bank in which the operational artist induced a loan problem may be perfectly solvent and is only illiquid, the second bank may be completely insolvent. This inability to differentiate will contribute to the credit freeze as loan originators become more cautious.

The operational artist of the future can deny loans a number of different ways. He can position co-opted financial institutions to provide loans to several key banks in a target country's economy. Then, when the timing is right, his financial institutions will all refuse to renew a loan,

or even recall a loan early (albeit at a penalty). The market will pick up on this signal and notice a sudden increase in the cost of debts. Like above, the rest of the market will assume that these financial institutions know of some insider information. Perhaps the banks are insolvent, which is why the financial institutions are recalling their loans early. Regular loan providers in the market begin recalling their loans, causing a credit freeze among the banks, resulting in the economy grinding to a halt.

VIII. GLOBAL REPERCUSSIONS

Like any complex system, there will likely be second and third order effects in the global market that will negatively impact the future operational artist. He may take certain precautions to protect his domestic market from these ramifications, but no doubt there will be repercussions that he was unable to predict. This complexity and inability to fully anticipate all outcomes may make financial warfare of the future less palatable as a form of warfare. However, this may be a more appealing alternative than the certain loss of money and lives resulting from open military warfare. Furthermore, the financial warfare methodologies described above can be executed by any entity with money and capital. Perhaps more ominously, the increasing organization and sophistication of non-state actors could make financial warfare an attractive tool, especially organizations whose goal is the complete collapse of the western financial system.

IX. CONCLUSIONS AND FURTHER RESEARCH

This paper has only touched the surface of how financial warfare can be waged in the future. This new type of warfare will attack market confidence and will not require the attacker to possess the strong economic position or global consensus necessary to execute the older forms of economic warfare, such as embargoes. While this paper examined two possible methods, there are numerous other ways to induce a loss of confidence within a country's internal

financial system. In general, the economic pendulum regularly swings between greed and fear. The market naturally goes through cycles of credit overexpansion and overconfidence, followed by a sudden loss of confidence and a mad scramble for liquidity. An actor can time any injection into the system to augment the impact of these cycles.

Furthermore, risk is often well-hidden in a bull market. One only needs to take a look at the housing bubble, collateral debt obligations, and credit default swaps as recent examples. When prices are increasing, everyone, especially those who are over-leveraged, do well. Only when prices start going down do the risks become real losses. All of these risks are levers that can be deliberately exploited by state and non-state actors. In general terms, any economic system artificially propped up in a state of unnatural equilibrium has the potential to be attacked. Market inefficiencies such as opacity and information asymmetry further increase vulnerabilities.

¹ Paul Bracken, "Financial Warfare," *Foreign Policy Research Institute*. September 2007, Accessed December 5, 2015, <http://www.fpri.org/articles/2007/09/financial-warfare>.

² James Rickards, *The Death of Money: The Coming Collapse of the International Monetary System* (New York City, NY: Penguin Group, 2014), 30-47.

³ Jerry Robinson, *Bankruptcy of Our Nation* (Green Forest, AR: New Leaf Press, 2012) 65-96.

⁴ "IMF's Executive Board Completes Review of SDR Basket, Includes Chinese Renminbi," *International Monetary Fund Press Release No 15/540 2015*, Accessed 11 30, 2015, <http://www.imf.org/external/np/sec/pr/2015/pr15540.htm>.

⁵ Michael Hudson, 2015, "The IMF Changes its Rules to Isolate China and Russia," *Michael Hudson*, December 20 2015, Accessed December 28, 2015, <http://michael-hudson.com/2015/12/the-imf-changes-its-rules-to-isolate-china-and-russia/>.

⁶ William Isaac, "Confidence Key to Economic Growth," *Forbes*, September 16, 2010, Accessed November 5, 2015, <http://www.forbes.com/sites/billisaac/2010/09/16/confidence-key-to-economic-growth/#3dee9cb74c36>.

⁷ James Rickards, *Currency Wars: The Making of the Next Global Crisis*, (New York City, NY: Penguin Group, 2011), 121-130.

⁸ Andrei Shleifer and Robert Vishny, "Fire Sale in Finance and Macroeconomics." *Journal of Economic Perspectives*, volume 25, number 1, (winter 2011): 29-48.

⁹ Kevin D. Freeman, 2009. "Economic Warfare: Risks and Responses," Department of Defense.

¹⁰ James Rickards, *The Death of Money: The Coming Collapse of the International Monetary System* (New York City, NY: Penguin Group, 2014), 100-115.

¹¹ Sal Khan, Sal, *Khan Academy*, 2016, Accessed 12 20, 2016. <https://www.khanacademy.org/>.

¹² *Ibid.*

¹³ Lawrence H. White, *Fractional Reserve Banking*, Testimony Before the House Subcommittee on Domestic Monetary Policy and Technology, June 28, 2012.

¹⁴ 2013. "The Origins of the Financial Crisis Crash Course," *The Economist*, September 7, 2013, accessed 12 20, 2015. <http://www.economist.com/news/schoolsbrief/21584534-effects-financial-crisis-are-still-being-felt-five-years-article>.

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