Rethinking the Foundations of the National Security Strategy and the QDR
Seminar Series
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Mr. James Rickards
Senior Managing Director for Market Intelligence, Omnis

Financial Threats to National Security

Note: Below are informal notes taken by a JHU/APL staff member at the Seminar.

Mr. Rickards began by noting that there was a great deal of science behind the concepts he would be presenting. Most of this is new science from the last 25 years in physics and applied mathematics. However, it is not mainstream, but it can be footnoted. Nor is this the type of economics taught at Harvard or the University of Chicago. This would be a new approach to Economics 101.

Finance is the branch of economics that we would be talking about
- Covers capital markets, stocks, bonds, etc.
- Important to know what finance means to national security
  - Historically, people invaded countries to acquire wealth
  - There has been a change over the last 200 years
    - Innovation (a major US strength) has become the way to acquire wealth
    - Marshall Plan won over Europe because the US outspent the Soviets
  - Now financial vulnerabilities can lead to national security issues

There are two types of threats – Specific and Meta

Meta Threats
- Threats can also be either exogenous (from the outside) or endogenous (from the inside – fragile markets)
- Currently, it could be said that the economy has the flu
  - The downturn could be so severe that the whole system will be weakened like a sick body
  - Then the system would be much more vulnerable to exogenous threats

Specific Threats that are coming together
- Look at relationships between Russia and China and between Fannie May and Freddie Mac
- Can be seen as Venn diagrams – areas of intersecting interests
- Intersections are growing including national security and the stock market
- Few people really have expertise in both areas
- Need more fusion / more inter-disciplinary approaches
  - Must get military leaders and hedge funds managers in the same room

Case of Fannie and Freddie
- Problems became very evident about July showing their weaknesses
  - They went to Congress which made a rare quick decision – shows urgency of situation
- Standard work-out did not happen
  - Standard usually has debt holders getting 80 cents on the dollar
  - In this case, quickly announced that debt holders would get 100
  - At that time Russia was invading Georgia and China was a very big holder of US debt
  - Feared that only paying out 80 cents on the dollar would be considered an attack
- Result: national security and financial worlds collided

Case of China and Taiwan
- If China wanted to invade Taiwan five years from now, it would be preparing things now
- In an invasion, China would expect that the US would help Taiwan
One phone call from the President could cut China off from its funds
- China could avoid this cut off if it started to move its funds away from US markets
- Is counter-intelligence looking for signs of such activity?
- Not a question to answer in this forum but it is something that should be looked at

Case of Russia and Natural Gas for Europe
- If Russia cuts off natural gas, Europe would freeze
- If the Russians plan to cut it off, they could go on the futures market and “sew it up”
- This sort of thing could be monitored to predict such actions
- This did not work in the case of Madoff although the tools were there
- Tools do exist but they are not used for national security investigations

“Painting the Tape” Case
- Involves last minute of the trading day activities that suddenly push the final price up or down
- Doing that 5 days in a row creates a trend
- Hedge funds react to trends
- Shows it is possible to manipulate markets even without vast sums of money as a result of working on the margins

There are always foreign attempts to acquire sensitive technologies
- The Intelligence Community has a system to watch for this
  - But people still do it
- Need more forensic capabilities in financial markets to follow suspicious activities

Al Qaeda has told us for years what they intend to do – just as Hitler did with Mein Kampf
- At a dinner after 9/11 bin Laden was recorded as knowing just how much had been lost in the market
- Injury to the market is a force multiplier to a terror activity
  - May also be an accelerant since a weak economy might provide an even better opportunity to strike
- This is another intersection of financial and national security concerns

Part I: Specific Financial Threats and Techniques

Malicious Financial Goals of State Rivals and Non-State Actors:
- Steal technology
- Steal information
- Hinder, sabotage or delay projects
- Bid rigging
- Hinder mergers
- Recruit agents
- Disseminate disinformation
- Sleeper capacity for future activation
- Price manipulation, commodity “squeezes” and “corners” and “painting the tape”
- Systemic market disruption
CASE STUDY I: Private Equity Co-Investment

- Inviting in other partners
- Happens when the target company’s market value is greater than that of the acquiring company
- Acquiring company looks for other partners/private investors
- Simple structure on a viewgraph but more complex in reality
  - Would not be able to see these relations/situation on any one company’s report
  - Would have to look at several reports and would need to know which ones

*Wall Street Journal* in June reported on such a deal involving China’s sovereign wealth fund buying a $2.5 Billion stake in a private equity funds company
- Sovereign wealth funds growing from $3 Trillion now to $12 Trillion by 2012

Case Study II: Conduits and Cutouts

- Where the money comes from to acquire a company may be a mystery
- Often from different side pockets, hedge funds, entities with innocuous names
- To find the origins you might need to work through a maze involving off-shore organizations
  - This can be done but need special resources and expertise including agents already in place
  - The US does have some of these necessary tools
    - Problems increase when off-shore entities involved so less regulation/transparency
- US does have some tools
  - CFIUS (Committee on Foreign Investment in the United States)
  - Export Administration Act
  - Securities Laws (5% reports, §16 reports, insider trading, etc.)
  - Antitrust Laws
  - Tax Laws
  - Banking Laws
  - National Industrial Security Program
  - International Emergency Economic Powers Act (IEEPA)
- Big question: Where is the coordinated, multi-lateral effort involving Departments of Defense/Treasury/etc?
- There are world chokepoints in financial and legal matters just as in oil transportation: Lawyers/Offshore Directors/Accountants/Administrators/Brokers/Registrars
  - All legitimate organizations need boards of directors, lawyers, etc.
There should be some type active regulators in any industry
Madoff appeared to be on his own – this should have sent up red flags that were responded to

All of these are only potential threats
- Any could become more threatening
- What is our capability to identify such problems?
- What sort of offensive capability can we have to handle these sorts of situations?
  - We want to be able to let the Chinese know what we could do to them if they try to harm our economy

Meta-Threat – much like the current crisis that weakened the US economy
- Great Reckoning could happen
  - Debts may be called that could not be paid
  - Then economic activity could not be sustained
  - Some melting down can be seen now – deleveraging, defaults, etc.
- Can expect a 20-25% decline in GDP before everything is over
  - Most expect a 6-7% decline next year
  - Will add up if the situation goes on for several years
- This weakened economy situation might tempt rivals to adventurism or opportunism
- Eventually might have a severe depression and a decreased threat
- It would be irresponsible to pose this situation without explaining how we got here
  - Need to look at a standard bell curve showing frequency and magnitude

Example: Average height for men is about 5’9”
- It may be possible to find someone 7 feet tall but not 10 feet tall (6 SD on the chart)
- At a Standard Deviation of 6 normally find things that only happen once in history
  - Currently on Wall Street we are seeing variations that are at 10 or 15 SD
  - If we are getting observations that are way off the chart, then the paradigm is wrong
- Normally can use the concept of the Fat Tail to explain outliers
  - So much of government and finance is based on flow
  - Perceptions can change – all believed the sun revolved around the earth before Copernicus

Need a new paradigm for looking at the financial markets – a non-linear dynamics system
- Need this for capital markets which is really a system like a river system or an F-16 aircraft
  - Why did Madoff’s scheme fail now?
    - Other things were happening to make his flaws show up
    - People who lost money elsewhere called for the money they invested with Madoff
- System is dynamic – not static like the Eiffel Tower which is also a system
- Non-linear – inputs go in several times before suddenly there is a big change
  - Changes too small to notice may have been going on for years
  - Example: Japan and the Sub-Prime problems even though Japan did not have direct connection
    - Involves the fact that you must sell what you can, not what you want to sell
Possible to sell Japanese securities, so sold them to cover loses related to sub-prime issues that could not be sold
  - Example: F-16 is the first aircraft designed to be unstable in flight, stabilized by computers
    - Capital markets are somewhat the same
    - When a sub-system fails, the plane goes way off course
    - Can get unpredictability because of the slight changes
      - If double the scale of a system, can get 100s of times more risk
  - Example: can put together all the chemicals in a human body and give it an electric shock, but you won’t get a human being
    - Speech and cognition are emerging properties that do not come directly from the chemicals
    - There is no reason to expect the chemicals to create them

- In the markets today seeing a factor of 5 in variations, so risk is up by 1000s
  - Frequency and magnitude of these events is on a logarithmic scale
  - Going from \( n^1 \) to \( n^2 \) can create millions in risk
  - Only based on a theoretical construct and is not bounded by history
  - Need stress testing to come up with a worst case scenario
  - There are limits – can’t have a California earthquake that is bigger than California

Minute differences can now cause big changes at least some of the time
- We may have scaled financial systems up so much that we can expect a catastrophe
- Policy failures add to the situation
  - Banks were kept separate from other parts of the financial markets after the 1930s
    - They were allowed to come back together in the 1990s
    - Greenspan did not understand the problem
- Risk was sliced and diced to parse it out and share it among many
  - This was a good idea on a first order effect
  - Became so good that risk got out of hand and off the scale
- Bush Administration could be criticized for its omissions
  - Need umpires in a baseball game but not to interfere with the plan and not to play 2\textsuperscript{nd} base
  - Problems were compounded by greed
- Fed Chairman Bernanke has been “fighting the last war” – the Depression of the 1930s
• Wants to avoid runs on banks
  • This time the situation started with an asset problem, not a liability problem
• The next Secretary of the Treasury will need to get all the risk in one place
  • It is possible to descale risk
  • There will need to be failures to get them out of the system
  • No good exit strategy

Pyramid of Risk and Leverage
• Think of a 2000 to 1 leverage concept because it is built like a pyramid
• Cannot unwind this now because so large

Bubble behavior – things won’t go down just a little, will go down a great deal and very fast
• Will stay low for a long time

Velocity of money is important (MV=Py) (Money supply times Velocity = Price times GDP)
• Velocity is how long it takes for money to turnover (considered a constant)
• Its influence can be adjusted by adjusting the money supply
• Has not been adjusted for a long while and money supply was constant

If all gold above ground was figured into a calculation, then an ounce of gold would be worth $3,900
• Partially explains why the dollar has not done worse – nothing else to go to
• Big question: how long will it take foreign investors to find other places to put their funds?

Part #3: Prospects, Recommendations and Resources
We are in much worse shape than you hear about
• Russia did start putting its gold in Swiss depositories
  • Might be a start of flight from the dollar
• US should be more pro-active – a new Bretton Woods conference/agreement?
  • US should not go back to the gold standard
  • Should warehouse weak derivatives
  • Need to reengage sovereign wealth funds
    ▪ They have helped already even though they lost as much as 70% of what they invested
    ▪ This should be a big embarrassment for the US
  • Need to clean up balance sheets
• Problems can expand beyond the financial world
  • In the 1340s two major banks in Venice failed
  • Many people lost their money and became physically weakened because of reduced food, etc.
  • Their weakened states made them more vulnerable to the Black Death epidemic
• Other steps the US could take
  • Clearinghouse for debt
  • Financial Wargaming
  • Bring in analytic resources to review the complex systems – could be government like Los Alamos or private like Omnis
  • The government has a lot of experts who are not now talking to each other
    ▪ Need to see the totality of problems that cross disciplines
    ▪ Need to recognize the increased threats

QUESTION & ANSWER SESSION
The Fed dropped interest rates to show that it would do anything needed to add liquidity to the market
• But when they print so much money, no one wants it
• There is too much garbage on the balance sheets, leaving few options
• Although there has been fear of what Japan went through in the 1990s, US is following the same path
  • Could get further decline followed by a prolonged period of no growth
  • This is definitely the wrong track

Problems of the auto industry are self-inflicted
• Car companies here can be efficient, but not so in Detroit
• It was not a big deal in the past when the Japanese bought Rockefeller Center
  o It was not going to be move anywhere else
  o Same is true of the car companies
• These problems are troubling but are not yet spreading
  o The supply chain may be more vulnerable
  o Defense and other sectors will not be following directly

Theoretical mathematics could be helpful in working through these problems
• Need mathematicians from NASA and such places
• Show them how the world works and let them build the models
  o But their ideas of the world were wrong
• Someone needs to teach Wall Street new paradigm
• Very scary situation

Financial product safety
• We should expect the stock market to stay low
  o Compare 3 graphic presentations of market value: L-U-V
  o Moving toward L now – drop quickly and stay low for a long time
• Can expect the market to be down around 5,000 for the next 7 or 8 years
• Safer to stay with stock index funds than with individual stocks
  o There are some costs of ownership to consider

Market Intelligence
• Is the US Treasury’s intelligence good enough
• They watch markets but for different reasons
  o They do not ask whether enemies or rivals are creating changes in the market
• Treasury’s intelligence resources do great work following the money trails
  o Not so well when following money flows in stocks / bonds / derivatives
  o Only the money supply and banking are being looked at carefully

Finance has 3 parts: Assets, Liabilities, and Capital Assets
• Everything else is gloss
• The Fed works on the Liabilities side
• The Treasury works on the Assets side – and that is where the problems are now
  o Balance sheets are frozen with too much junk
  o Should put this junk under a rock for 5 years
  o Banks may be limited about what they can lend because of their own internal rules
• Behavioral economics is involved
  o People are not buying because they see their 401K’s and houses dropping 20-40% in value
  o Leads to a reluctance to borrow and then banks’ inability to lend
  o The brakes on purchases were slammed on about October 1st
  o This is part of the Meta Threat – creating our own problems

Derivatives involved up to $100 Trillion in bad mortgages
• Need to be moved off the balance sheet
• Need a clearing house to handle defaults
  o Look back at the 1980s situation – assets were traded and formed a circle of who owed what to whom
  o Shared risk among many so that risk was decreased by about 90%
    • Made failure manageable

While the financial system is dynamic it is a long slow grind
• Russia is not weaponizing money
• This could not have happened 20 years ago – markets were separate
  o Everything interconnected now
• Need to consider first order inefficiencies and their 2nd order benefits
• Currently in a liquidity trap that Fed painted itself into
• In the last major depression, the US had to have World War II to get out of it
• Intelligence community worries about mirror imaging when looking at threat countries
  o Need to wonder whether others will be rational actors, too

Treasury was going to buy all the bad assets but they did not
• Never had a good idea of what the value of those assets was
• Value doesn’t really matter
  o Taxpayer will be paying too much effectively
  o End game will be a clean balance sheet – more important
  o The S&L crisis of the 1990s did work things out rather well
    • Seemed like a really big issue at the time
    • Liabilities were moved to good banks
    • US got out of the situation in 3 years – took Japan 20 years
• Important thing is to inject capital and get things moving again

Hyperinflation can happen at the same time as deflation – depending on exogenous or endogenous metrics

Greatest catastrophes are not bounded by history
• No paper currency has prevailed for a very long time
• That we are all in this together in the problem of the entire system grinding to a halt
• US can back its money with real assets – land / gold / etc.
• Mostly need to consider a proactive Bretton Woods II before we stumble into new forms of market