FINANCIAL PREPAREDNESS

"One of life's most painful moments comes when we must admit that we didn't do our homework, that we are not prepared." ~ Merlin Olsen

Issue #41
November 19, 2021

How Everything Can Collapse

Systems often hold longer than we think, but they end up by collapsing much faster than we imagine. ~ Ken Rogoff

Man has mastered his world like never before. We have come to expect not only every comfort and modern convenience, but a continuous stream of amazing technological advances. Virtually no one ever considers the thought that we could suddenly find ourselves back in the 18th or 19th Century, and even if they did, they wouldn't understand how that could be possible.

I just finished reading How Everything Can Collapse by Pablo Servigne and Raphaël Stevens. It was written by two European environmentalists, so their concern/theory/conclusion is that there *will* be (it's already too late to stop it) a global collapse (probably between 2050 and 2100) due to the end of fossil fuels and ores, overpopulation, pollution, the collapse or extinction of species, etc. Although I disagree with their recommendations, it's a sobering and thought-provoking book and an important contribution to the collapsology body of work.

First let me say that although I'm not an environmentalist (I would instead call myself a conservationist), I greatly value pristine nature, wildlife, and clean air and water, and I

actually live in the woods myself. We live in a finite world and there is only so much fossil fuel and ore that can be affordably extracted, and there is a surprisingly little amount of clean freshwater. I think we can and should do a better job of becoming more efficient, consuming less, and reducing our waste and pollution.

Although free markets, free trade, sound money, peace and the rule of law were all necessary conditions for the progress and prosperity that we've enjoyed for the last 120 years, none of it would have been possible without cheap oil. Oil is incredibly dense in energy, is easily transported, can be stored for quite some time, and has many uses (including fertilizer and plastics). Oil was like a one-time windfall for humanity. Apparently not only have we reached Peak Oil, but now the costs to extract it (economic and environmental) are quickly becoming prohibitive. So unless we find another form of energy to replace it soon, our growth-, energy-, and debt-based society may well collapse, and probably sooner than we expect.

The authors spend several pages discussing the key metric of Energy Return on Investment (EROI), which is the amount of energy extracted divided by the amount of energy used to extract the new energy. "At the beginning of the 20th Century, U.S. oil had a fantastic EROI of 100:1....By 1990, it had fallen to only 35:1, and today it is about 11:1.... In the U.S., the EROI for oil sands lies between 2:1 and 4:1...and for nuclear power between 5:1 and 15:1. The EROI for coal is about 50:1 [!]...for shale oil about 5:1 and for natural gas about 10:1. All these EROIs are not only declining, but declining at an accelerating rate....In the U.S., solar power produces a yield of about 1.6:1 [!]....the EROI for wind turbines [which produce electricity only intermittently] is 3.8:1." Hydroelectricity has an EROI of between 35:1 and 49:1, but "a recent study has shown that 3,700 projects underway or planned across the world would increase global electricity production by only" two percentage points. BTW, in recent years the federal government has been waging a war against the energy source with the highest EROI (coal) and subsidizing the source with the lowest EROI (solar). What the hell?

Not only is there not enough renewable energy to replace fossil fuels, but "there are not enough fossil fuels (or ores) to massively develop renewable energies...." See, you would need fossil fuels and ores to build a renewable energy infrastructure.

Interestingly, the authors write that "...the energy shortage is not the most urgent threat to our engine. Something else threatens to bring it to a halt just before that point: the financial system....the energy system and the financial system are closely linked, and the one cannot function without the other." Historically, there has been a "close correlation between GDP and oil production....out of eleven recessions that took place during the 20th Century, ten were preceded by a sharp increase in oil prices [the price has skyrocketed since the pandemic and is now the highest since 2014]....an energy crisis precedes a serious economic crisis....once resource costs get too high, the debt-based system no longer works....A debt system has a bulimic need for growth and thus energy."

But troublingly, "economic recessions accelerate the decline in energy production....oil companies experience serious financial difficulties and reduce their investments...which dangerously compromises future production....a period of low economic growth or

recession could...cause the engine to seize up even before the physical extraction limit is reached. Without a functioning economy, easily accessible energy ceases to be available. And without accessible energy, it's the end of the economy as we know it: transport, long supply chains, industrial agriculture, heating, water purification, the Internet....history shows us that societies are quickly destabilized when tummies start to rumble." As the saying goes, we are only nine meals away from complete anarchy.

The authors describe how complex systems can collapse: "The presence of these tipping points is often due to the great connectivity and homogeneity of systems associated with domino effects and feedback loops....a complex living system (ecosystems, organizations, societies, economies, markets, etc.) consists of countless interwoven feedback loops that keep the system stable and relatively resilient. When approaching a break point, just one small disruption...is enough for certain loops to change nature and drag the entire system into an unpredictable and often irreversible chaos. Either the system dies or it reaches a new state of equilibrium...often very uncomfortable (for us)....We now know that every year that passes, and thus every small step towards an intensification of 'crises'...increases the risks of sudden, unpredictable and irreversible catastrophes *more than proportionally*."

Next the authors discuss the problem of complexity: "...the globalization, interconnection and homogenization of the economy have tightened the lock-in by radically intensifying the power of the systems already in place....this apparently inexorable tendency of societies to move toward greater levels of complexity, specialization and sociopolitical control is even one of the major causes of the collapse of societies....over time, societies gradually turn towards natural resources that become increasingly expensive as they are more difficult to exploit...thereby reducing their energy benefits at the very same time as they are increasing their bureaucracy, social control spending...and military budgets simply in order to maintain the status quo. Locked in by all this complexity, the metabolism of a society reaches a threshold of diminishing returns that makes it more and more vulnerable to collapse."

The authors also warn about the unprecedented moral hazard that the Fed/eral government injected into the financial system in 2008: "In recent years, finance has been concentrated in a small number of huge financial institutions....This phenomenon of concentration has obliged states to give implicit bank guarantees, which has eroded market discipline and encouraged banks to take excessive risks....the links between these institutions and governments are now 'very close'. That's how some financial institutions and multinationals have become 'too big to fail' or 'too big to jail'."

The authors explain how we're trapped in an ever more fragile vehicle: "...all the sectors and all the regions of our globalized civilization have become interdependent to the point where one of them cannot suffer from a collapse without making the whole meta-organism vulnerable....There are three main categories of risk that threaten the stability of a complex system: threshold effects ('all or nothing' phenomena), domino effects (contagion effects) and the inability of the system to recover its balance after a shock (hysteresis)."

The authors also discuss the fragility of the financial system: "The problem is that the

concentration of actors, the complexity and speed of the financial system and the growing gap between regulations and traders' 'innovations' have made the financial system very fragile. Shocks can now spread very rapidly to the whole network. But also, complexity can itself trigger a crisis: when the economic conditions deteriorate...banks find it so difficult to evaluate all their connections with other banks that a general mistrust sets in and provokes a fire sale, which ends with a freeze on transactions."

In 2000, 150 striking truckers blocked the main fuel depots in the UK and the country quickly began to shut down. The authors describe the cascade effect that a disruption of the energy supply could have: "Refineries supply the fuel needed for road transport but also trains supplying the main power plants with coal." Coal plants in the U.S. provide 50% of electricity and "on average have 20 days of coal reserves. But without electricity, it is impossible to operate coal mines or oil pipelines. And it's also impossible to maintain running-water distribution systems, refrigeration, communication systems, and computer and banking centers." In the last decade, 26 countries were affected by about 50 major power blackouts.

My first job as an employee was a Summer job working for a regional trucking company where I entered maintenance records into a computer database. I have long said that when the 18-wheelers stop rolling (for any reason, including the current unprecedented lack of spare parts), it'll all be over. The authors provide a box called When Trucks Stop, the United States Stops. Here are the highlights:

During the first 24 hours: the delivery of medical supplies, post and parcels and just-in-time supplies and parts will stop.

After one day: food shortages, soaring prices, long lines; assembly lines will stop.

After two to three days: Essential supplies will disappear. ATMs will run out of cash and banks won't be able to handle certain transactions. Garbage will go uncollected. Container ships will be stuck in ports and rail transport will stop.

After a week: Travel by car will be impossible, so most people won't be able to get to work, grocery stores or medical care.

After two weeks: Drinking water will start to run out.

After four weeks: Gastrointestinal diseases proliferate.

This isn't included in the box, but I would imagine that by this point, perhaps half or more of the U.S. population would be dead from thirst, starvation, disease, violence or exposure. Perhaps most of the survivors would become refugees, looking for food and water outside the cities and suburbs. Violent crime would skyrocket as there would be no law and order. We would quickly revert to barbarism and life would once again become nasty, brutish and short.

What will be the spark that would cause a collapse? According to one systemic risk

specialist, it could come from either “the oil peak, which would jeopardize our monetary system (based on debt)” [ironically, a significant amount of outstanding corporate debt was issued by shale energy companies, and much of that will never be repaid, which could help precipitate a financial collapse] or an imbalance in the financial system.

“In both cases, the global economic collapse would first involve a phase of generalized loss of confidence, itself caused by the insolvency of states and banks,” perhaps “starting with the disordered bankruptcy of a state in the Euro area. This crisis would sow panic in the banking sector country by country and then affect whole economies…eventually mutating into food shortages after a few days. In less than two weeks, the crisis would spread exponentially across the world. After three weeks, some vital sectors would no longer be able to reboot their activities….a severe pandemic could also be the cause of a major collapse. For this, there is no need for a virus that would wipe out 99% of humankind; just a small percentage [e.g., COVID-19] would suffice.”

In the event of a serious pandemic, the head of the global emergency team at Exxon Mobil thinks that the company could still function even with an employee absentee rate of 25%. But “if we have 50% absences, it's a different story.” “…the domino effects could be catastrophic. After a few days, the whole system might implode.”

The authors describe how globalization and complexity have created a new type of risk: “…systems have become so complex that even in the absence of external shocks…they can suffer collapse. Indeed, beyond a certain level of complexity, the technological measuring tools are not even powerful enough to understand and predict the chaotic behavior of such super-systems….This 'hyperglobalization' has transformed the global economy into a highly complex gigantic system that connects and multiplies the risks specific to each of the critical sectors….This has brought a new type of risk, *global systemic risk*, which can be triggered by countless potential factors….”

Less than a century ago, about a third of Americans worked on farms and/or raised a significant portion of their own food. But “In our societies, very few people these days can manage without a supermarket, credit card or petrol station. When a civilization's… inhabitants no longer have a direct link with the Earth system (earth, water, wood, animals, plants, etc.), the population becomes entirely dependent on the artificial structure that maintains it in this state.”

The authors explain how complex systems are like an oak tree: “…complex networks are very sensitive to two factors: heterogeneity; and connectivity between their constituent elements. A heterogeneous and modular network…will withstand shocks by adapting. It will suffer only local losses….a homogeneous [e.g., everyone using Too Big To Fail banks, Amazon for supplies, investing in stock index funds] and highly connected network initially resists change….but then, if the disruptions continue, it will be subject to domino effects and therefore catastrophic changes….the apparent resilience of these homogenous and connected systems is misleading as it hides growing fragility. Like the oak, these systems are very resistant but break when the pressure is too great. Conversely, heterogeneous and modular systems are resilient; they bend but do not break.”

The authors describe the results of one simulation of the HANDY model, which I think is the closest to our current situation: “At a low rate of overall consumption…the caste of elites [metro D.C.] begins to grow and monopolizes a large amount of the resources available to the detriment of the commoners [Flyover Country]. These latter, weakened by poverty and hunger [and opioids/heroin/meth, welfare and hopelessness], are no longer able to provide enough work to maintain the society, which thus starts to decline. It is therefore not the exhaustion of resources but the exhaustion of the people which causes the collapse….In other words, the population disappears faster than nature….So even if a society is overall 'sustainable', the overconsumption by a small elite leads irremediably to its decline….intense social stratification makes it difficult to avoid a collapse of civilization.”

I think the election of 2016 caused many of the elite to realize just how out of touch they were with the people in Flyover Country (thus, for example, Mark Zuckerberg's tour of all 50 states). The authors explain why this is a problem: “…the elites, cushioned by their wealth, do not suffer immediately from the first effects of the decline. They do not feel the effects of a disaster until long after the majority of the population or long after irreversible destruction of ecosystems….This buffer of wealth allows elites to continue 'business as usual' despite the impending catastrophe….the elites…are blinded by the long and seemingly sustainable period that precedes a collapse and take this as an excuse to do nothing.” Why worry about an opioid crisis when you can just “buy the dips”?

One archaeologist/geographer distinguishes “the 'preconditions' of a collapse (which make a society vulnerable) from 'triggers' (the shocks that can destabilize a society). Preconditions are often endogenous (the incompetence or corruption of elites, a decrease in agricultural productivity, poverty, the depletion of natural resources, etc.); they reduce the resilience of a society and are factors of *decline*. Triggers…are faster and often exogenous (extreme weather events, invasions, economic crises, etc.) and cause collapses if they are preceded by favorable preconditions….what is usually called a 'natural' catastrophe is never really separate from human action.”

The authors explain how borrowing from the future (by going into ever greater amounts of debt) leads to collapse: “…the growing complexity of sociopolitical institutions entails an ever higher 'metabolic cost'….the great civilizations are caught in an entropic trap from which it is almost impossible to escape….when the available energy and resources can no longer maintain the existing level of complexity, the civilization begins to consume itself by borrowing from the future…thereby preparing the way for an eventual implosion. There follows a great simplification in society….”

When Kabul fell to the Taliban several months ago, I immediately realized that it was a key moment in history: “The fall of a civilization or an empire is characterized first and foremost by its loss of control on the periphery….the heart of the industrial world [large cities] is the area that will suffer the most serious consequences of a collapse.” Which is why you should get out of large metropolitan areas.

What's fascinating (and terrifying) is that even though we have the technology, infrastructure and knowhow, it's very possible that we could be unable to reboot after an

extended disruption: "...the interruptions that last too long (from several days to several weeks) become irreversible once the entropic decomposition of production infrastructure becomes too significant....a succession of emergencies gradually reduces the adaptive capacity (resilience) of institutions and people, making them less and less able to organize 'reboots'."

The authors describe how humans generally behave during sudden, unexpected, short-term disasters: "...most human being behave in extraordinarily altruistic ways....the overwhelming majority...remain calm, help each other....behavior associated with competitiveness and aggression is set aside in a general upsurge of feeling where all 'I's instantly become 'we's with a force that nothing seems to stop."

But "Will 'community resilience' work in the same way over the duration of a collapse? We absolutely cannot count on it. We know that in time of war (especially civil war), social order sometimes breaks down so quickly that the most barbaric acts can be committed in the most 'normal' populations."

The authors explain why our brains (which, until fairly recently, usually didn't last much past 40 years of age) are not well equipped to think about invisible, long-term threats: "We are simply not equipped to perceive the dangers posed by systemic or long-term threats....our brains are very effective at dealing with immediate problems. Over past millennia, [natural selection has] fostered our sensitivity to concrete and visible hazards, and so we respond to risks by listening to our instinctive emotions rather than by using our reason or our intuition."

Ignoring or denying the risk of collapse seems to be a psychological defense: "...denial is a salutary cognitive process (in the short term!), which helps us protect ourselves naturally from over-'toxic' information....the possibility of a collapse often causes great anxiety, which is very harmful to the body if it becomes chronic. The absence of concrete alternatives even generates a feeling of impotence, which itself is carcinogenic....the possibility that the world as we know it is heading for a horrible end are often too difficult for the human mind to accept." This is why although there is no subject that is more important, it is also the least discussed. In one humorous paragraph, the authors relate how the wives of collapsologists (who are almost always male) don't want them to discuss the subject in polite company. Broaching the subject is a surefire way to abruptly end a conversation.

The authors recommend that we immediately stop using fossil fuels. Talk about something that would trigger a sudden collapse! I think it's clear that we urgently need to find a replacement for fossil fuels (instead of simply reverting to the 19th Century), but our only hope of doing so requires that we increase our wealth (so we could spend more on education, research and development, science and technology). And the only way to do that is to allow free markets to function.

Although there are many people who genuinely want to protect the environment and/or avoid collapse, there are also many people who have joined the Green bandwagon because they want to implement collectivist policies. Most of the policies that environmentalists

propose (removing energy from the economy, limiting production, transferring power and wealth to the government) also happen to be policies that the far left support for political reasons. Is that just a coincidence? I don't think so.

The authors also complain that as soon as they start talking about overpopulation, it's not long before someone calls them Nazis. (The Nazis, of course, warmed up their genocide machine by murdering up to 250,000 "useless eaters"--people who had nothing to contribute to the State—the mentally ill, the disabled, etc. They learned eugenics by studying the writings and policies of eugenicists in the U.S., especially those in California, of whom they were in awe.) Now I also happen to think that there are way too many people on the planet. But the solution to overpopulation isn't to impose draconian policies that can have *unintended consequences* (such as China's barbaric One Child policy) but to allow people to accumulate wealth through the free market. Generally, the wealthier a country is, the lower its birth rate.

The solution to this whole problem is to rely on human ingenuity, prices set by the market (not rationing, as the authors advocate), the profit motive, and private property rights. Generally, the countries that have the worst environment (e.g., China and the former Soviet Union) are also the ones that have the least private property rights.

In conclusion, if the authors are correct about our current situation, the direction we're headed and how our economy/society/civilization could suddenly collapse (and I don't disagree with them about that at all), then it's simply a major reason to prepare.

What You Should Be Doing Now

1. I am still seeing shortages of certain items, so I continue to be very concerned about the supply chain. So stock up on items that have a long shelf life.

2. The yield on the 5-Year Treasury is now the highest since Feb. 2020. Remember, as soon as interest rates spike, this Ponzi scheme will all be over. Get ready.

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I would love to hear from you! I thrive on feedback from readers. If you have any comments, suggestions, insight/wisdom, or you'd like to share a link to a great article, please email me.

Generally, I don't have time to answer questions about your specific situation, but if you have a general question that I think other readers also have, let me know and I will provide an answer in a future issue.

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Before starting a new diet or exercise regimen, you should consult with a doctor, nutritionist, dietician, or personal trainer.