

All.Net Analyst Report and Newsletter

Welcome to our Analyst Report and Newsletter

Eliminating checks and other written forms of financial instruments

The US Federal Reserve is now considering eliminating written financial instruments, like checks, and moving the entire financial system to electronic everything.

What could possibly go wrong?

The lack of written physical documentation to support financial transactions has been underway for some time. And it's a great convenience. Except when it's not. Here is my initial list of issues for concern:

- **Brittleness: something is down, my browser didn't work, my password is lost, ...**
 - In my house in daylight, with no electrical anything in operation, I can take a check and a pen out of a drawer, write on the check, put it in an envelope, attach a stamp, and put it in the postbox, and pay my taxes. Or I can not pay my taxes because they won't accept a check. I'm not suggesting we go back to the 20th century, but rather that we learn the lessons.
- **Risk aggregation and centralization**
 - The physical world is highly distributed and adaptable to changes because every part is largely independent of every other part. In the cyber age, this is no longer true. By moving to no physical backup process, we are aggregating uncertainties and piling higher and higher consequences on fewer and fewer systems. A single bit flip in a single location in memory can and has caused software to produce catastrophic failures of national infrastructures. Is there enough redundancy to compensate for this? Not today.
- **Lack of physical records and relative permanence**
 - I keep saying NO to the financial institutions trying to push me to paperless everything. It's not that I particularly like the paper world, it's that I have evidence of what took place. Within the last month, I had an electronic system scan a check I was depositing and change the dollar value without recourse, even though I put in the correct dollar value and it got the wrong one. Without the piece of paper, I have no proof, and the bank always wins when it comes to disputes over what their electronics say, because if it goes wrong, there is very often no trail of what actually took place that is accessible without enormous cost.
- **Integrity issues in digital diplomatics**
 - Doing diplomatic analysis of digital records is a huge problem because, at the end of the day, any inconsistency cannot be definitively resolved to determine the provenance, reliability, and accuracy of records. All it can do is definitively say that they are wrong. However, normal business records and government records are presumed reliable and authentic by legal systems, making a challenge problematic. You might show they are wrong, but cannot show yours are right.

- **The track record of online systems**

- There is an old saying:

“To err is human, but to really foul things up it takes a computer”

The track record of online systems for staying up, getting things right, and never making a mistake is terrible. But when the computer screws up, there are usually millions or billions of next steps that also screw up. Errors tend to propagate and expand in scope over short time frames. And this is getting worse quickly with the introduction of AI-generated code that is so full of bugs that when I asked it to debug itself, it created a support group where all the bugs meet every Tuesday to discuss their feelings and validate each other's existence.¹

- **Dates and deadlines**

- When I post something in the US Postal Service or use another carrier for similar delivery, I get receipts and the envelope shows that date I put in in the process. This is a legally valid government or normal business record of what took place and when. Computers are often wrong about such things, can be intentionally subverted in this way, and since dates to meet deadlines are often definitive and brutally punished when missed in financial and legal settings, I like to have definitive paper records where feasible. Having said that, I typically produce digital records of dates and times for my own use, even though they likely will not be honored in a dispute with a bank or government agency.

- **Lack of attribution infrastructure**

- In the digital realm, we currently largely lack attribution infrastructure. That means that you can do something in my name based on a user ID, pos word, and possible 3rd factor that is often and easily interdicted. So things can be done in my name, and there is no ready differentiation in the digital realm that can be used to clarify the physical reality. That's part of the reason there are at least tens of billions of dollars lost due to such acts every year according to FBI figures.

- **Lack of integrity provisions**

- For the most part, modern systems have no integrity mechanisms to assure that content is not modified. While some distributed ledger (e.g., blockchain) systems and similar mechanisms make it harder for this to happen without detection, they are not adequately deployed today for the masses to defeat systematic attempts at corruption of content in modern systems.

- **Legal notice requirements**

- Legal notice in the digital world is problematic. Most experienced folks I talk to tell me that most people do not read most contracts, even for mortgages, the largest financial transactions most people make in their lives. Legal notices online are enormous bodies of text with references to more enormous bodies of text that cannot realistically be read in the time frame of transactions undertaken and change with time. In physical form, there is time to read a document you possess.

¹ That joke was written by Claude (starting with “when I asked it...”) My version was “it’s a biohazard”

- **We've been trying for 60 years without success**
 - I think the first time I heard the concept of a paperless office was in the 1960s. Do we really believe we will be getting away from paper now what we know just how problematic computers are in our lives? I am glad we have less of some paper things, but I still take notes on paper during meetings, have clipboards with checklists for physical tasks, and get notices in the US mail for taxes, transactions of various sorts, and of course bills of lading and invoices for physical shipments.
- **Who will pay what for it and whose hands will it be in?**
 - No doubt, going paperless will be paid for by you and me, and the money to run it all will go to a small number of wealthy individuals and large enterprises. So how is this anything other than a big such of value from the masses to the oligarchs?²
- **Speed is not always good**
 - The movement to online button click everything smooths the path to spending, making it far easier to get over the action threshold to pay. But for high valued transactions, it is good to take a bit of time, and the paper version allows us to mull it over and procrastinate. The online version usually times us out to punish us for not saying yes more quickly. You get rewarded by saying yes to whatever they put out there without reading it.
- **If everyone else jumps off a cliff, does that mean you should?**
 - This was one of my mother's favorites. Just because everyone else does it doesn't mean you should. Lemmings to the sea and all of that. The path less traveled.³
- **Intentional disruption with no fallback**
 - I always like to end on something nefarious. The malicious threat actor who decides to screw up a nation state or its population by launching a cyber attack. You cannot reasonably claim at this point that there is no such threat. And certainly going to a fully digital system makes this feasible and more likely.

How bad is that?

When people tell me about accidents involving robotic cars, I tend to ask them about the frequency and severity of accidents for robot cars as opposed to human-drive cars. I don't necessarily know the answer, but my point is that it's not about an absolute, but rather a relative measure of utility. I just want to make sure folks can't claim "nobody could have known". Now you know.

Conclusions

I hope I have thrown some fear, uncertainty, and doubt (FUD) into the mix of going all digital for all financial transactions. Not that this will stop anyone from doing anything, but now you are on notice. You can no longer claim you were unaware. And just know that I will stick to my paper copies and you will only be able to get me to give them up if you pry them from my cold dead hands... unless you offer me a discount :)

2 It's a tradition to include the idealized communist perspective. Actual communist countries are more like oligarchies themselves, because power corrupts...

3 <https://www.poetryfoundation.org/poems/44272/the-road-not-taken> for Frost's famous poem.