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In this opinion piece, Pirrong takes a hard look at the hype surrounding blockchain technology and finds that it isn't necessarily justified.

Conductor with baton

If you've been paying the slightest attention to financial markets lately, you'll know that blockchain is The New Big Thing. Entrepreneurs and incumbent financial behemoths alike are claiming it will transform every aspect of financial markets.

The techno-utopianism makes me extremely skeptical. I will lay out the broader case for my skepticism in a forthcoming post. For now, I will discuss a specific example that illustrates odd combination of cluelessness and hype that characterizes many blockchain initiatives.

Titled "Blockchain startup aims to replace clearinghouses," the article breathlessly describes a post-trade start-up based on hyperledger technology that it says is designed to "disintermediate central counterparties (CCPs) from the clearing process, effectively removing their role in key areas".

I have often noted that CCPs offer a bundle of many services, and it is possible to considering unbundling some of them. But there are certain core functions of CCP clearing that this blockchain proposal does not offer.

Most importantly, CCPs mutualize default risk: this is truly one of the core features of a CCP. This proposal does not, meaning that it provides a fundamentally different service than a CCP.

Further, CCPs hedge and manage defaulted positions and port customer positions from a defaulted intermediary to a solvent one: this proposal does not. CCPs also manage liquidity risk. For instance, a defaulter's collateral may not be immediately convertible into cash to pay winning counterparties, but the CCP maintains liquidity reserves and lines that it can use to intermediate liquidity in these circumstances. The proposal does not. The proposal mentions netting, but I seriously doubt that the blockchain – hyperledger, excuse me – can perform multilateral netting like a CCP.

Important omissions

There are other issues. Who sets the margin levels? Who sets the daily (or intraday) marks which determine variation margin flows and margin calls to top up IM? CCPs do that. Who does it for the hyper ledger?

So the proposal does some of the same things as a CCP, but not all of them, and in fact omits the most important bits that make central clearing central clearing. To the extent that these other CCP services add value–or regulation compels market participants to utilize a CCP that offers these services–market participants will choose to use a CCP, rather than this service. It is not a perfect substitute for central clearing, and will not disintermediate central clearing in cases where the services it does not offer and the functions it does not perform are demanded by market participants, or by regulators.

The co-founder says "[c]entral clearing is turned into distributed clearing." Er, "distributed clearing"– AKA "bilateral OTC market."

What is being proposed here is not something really new; it is an application of a new technology to a very old, and very common, way of transacting. And by its nature, such a distributed, bilateral system cannot perform some functions that inherently require multilateral cooperation and centralization.

Reinventing the wheel

This illustrates one of my general gripes about blockchain hype: blockchain evangelists often claim to offer something new and revolutionary but what they actually describe often involves reinventing the wheel. Maybe this wheel has advantages over existing wheels, but it's still a wheel.

Furthermore, I would point out that this wheel may have some serious disadvantages as compared to existing wheels, namely, the bilateral OTC market as we know it. In some respects, it introduces one of the most dangerous features of central clearing into the bilateral market. (Hat tip to Izabella Kaminska for pointing this out.)

Specifically, as I've been going on about for about eight years now, the rigid variation margining mechanism inherent in central clearing creates a tight coupling that can lead to catastrophic failure. Operational or financial delays that prevent timely payment of variation margin can force the CCP into default, or force it or its members to take extraordinary measures to access liquidity during times when liquidity is tight. Everything in a cleared system has to perform like clockwork, or an entire CCP can fail. Even slight delays in receiving payments during periods of market stress (when large variation margin flows occur) can bring down a CCP.

In contrast, there is more play in traditional bilateral contracting. It is not nearly so tightly coupled. One party not making a margin call at the precise time does not threaten to bring down the entire system. Furthermore, in the bilateral world, the "FU Option" is often quite systemically stabilizing. During the lead up to the crisis, arguments over marks could stretch on for days and sometimes weeks, giving some breathing room to stump up the cash to meet margin calls, and to negotiate down the size of the calls.

The "smart contracts" aspect of the blockchain proposal jettisons that. Everything is written in the code, the code is the last word, and will be self-executing. This will almost certainly create tight coupling: The Market has moved by X; contract says that means party A has to pay Party B Y by 0800 tomorrow or A is in default. (One could imagine writing really, really smart contracts that embed various conditions that mimic the flexibility and play in face-to-face bilateral markets, but color me skeptical–and this conditionality will create other issues, as I'll discuss in the future post.)

When I think of these "smart contracts" one image that comes to mind is the magic broomsticks in The Sorcerer's Apprentice. They do EXACTLY what they are commanded to do by the apprentice (coder?): they tote water, and end up toting so much water that a flood ensues. There is no feedback mechanism to get them to stop when the water gets too high. Again, perhaps it is possible to create really, really smart contracts that embed such feedback mechanisms.

But then one has to consider the potential interactions among a dense network of such really, really smart contracts. How do the feedbacks feed back on one another? Simple agent models show that agents operating subject to pre-programmed rules can generate complex, emergent orders when they interact. Sometimes these orders can be quite efficient. Sometimes they can crash and collapse.

Jumping on the bandwagon

In sum, the proposal for "distributed clearing to disintermediate CCPs" illustrates some of the defects of the blockchain movement. It overhypes what it does. It claims to be something new, when really it is a

somewhat new way of doing something quite common. It does not necessarily perform these familiar functions better. It does not consider the systemic implications of what it does.

So why is there so much hype? Well, why was Pets.com a thing? More seriously, I think that there is an interesting sociological dynamic here. All the cool kids are talking about blockchain, and nobody wants to admit to not being cool. Further, when a critical mass of supposed thought leaders are doing something, others imitate for fear of being left behind: if you join and it turns out to be flop, well, you don't stand out–everybody, including the smartest people, screwed up. You're in good company! But if you don't join and it becomes a hit, you look like a Luddite idiot and get left behind. So there is a bias towards joining the fad/jumping on the bandwagon.

I think there will be a role for blockchain. But I also believe that it will not be nearly as revolutionary as its most ardent proponents claim. And I am damn certain that it is not going to disintermediate central clearing, both because central clearing does some things "decentralized clearing" doesn't (duh!), and because regulators like those things and are forcing their use.

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