

## Write-up for Q&As for “Corporate Governance: Data and Technology” by Wei Jiang

[1] *Are papers accessible right now or later?*

Thanks for your interest! The slides and video of the public lecture are made available to all registered participants in a follow-up email. The papers I referenced in the lecture are all available from the SSRN.

[2] *How does AI ethics affect corporate governance?*

Issues include biases in algorithms that feed into decision making, data privacy for employees and customers, etc. This is a burgeoning question which will be covered in a future lecture in the same series. This is about “governance of data and technology” while my lecture focused on “governance with data and technology.”

[3] *How to validate transactions through the blockchain and ensure the appropriate accounting information is captured for financial reporting purposes, and how to extract it?*

I think a great resource for this question – at a level that is not too abstract and not too detailed technical, is the lecture series by Gary Gensler, available via the MIT open lecture series <https://ocw.mit.edu/courses/sloan-school-of-management/15-s12-blockchain-and-money-fall-2018/video-lectures/session-1-introduction/>.

[4] *Has Big Data Technologies, when carefully used by active shareholders, the potential to reduce the information asymmetry gap?*

The technology has not yet been systematically used in either equity trading or proxy voting (though there have been bits-local adoptions here and there). Overstock.com already issued stocks and paid dividends on a blockchain. The technology will mitigate the information gap between insiders and outsiders, but will at the same time create new gap among investors.

[5] *Hi, is it possible to have access to the recording of this presentation?*

Yes, registered participants will receive the link to the recorded presentation.

[6] *For alternative external information generation, who assume the costs of information generation? Are they fairly compensated?*

Initially, the party that stands to benefit from the information advantage, e.g., hedge funds, will be willing to invest in building or purchasing alternative data. Gradually it becomes an arms race and the cost of producing such information becomes spread among many parties. The producers and processors of such information always receive adequate compensation for them to be willing participants.

[7] *Will the presentation PPT be available to download?*

Yes, the PPT will be shared in a follow-up email to registered participants.

[8] *Interested in how Professor Jiang considers the relevance of data (and its access) by investor type and/or holding period i.e algo driven hedge fund vs fundamental, long term value investor.*

The appeal of the alternative data is not necessarily related to investment horizon or quant vs. fundamental investors, but rather whether the information is incremental to corporate disclosure and leads to a revision of the valuation of securities covered. The technology also blurs the dichotomy of quant vs. fundamental: Counting vehicles in the parking lot of Home Depot constitutes “fundamental” information about HD but which information is also readily fed into an algo.

[9] *How machine may help to board of directors to take more precise decisions?*

There are two ways at a high level. First, directors could have access to information that is generated from the outside and synthesized without any compromise of trust and confidence owed to the firm. This is quite different from the traditional model under which directors are fed with information primarily sourced from the management. Second, directors and managers can all benefit from analytic and predictive tools that apply machine learning and AI. A combination of AI and human wisdom is likely to accomplish the best outcome as my recent paper Cao, Jiang, Wang, and Yang (2021) shows.

[10] *Interesting points shared. I was wondering whether the Loughran-McDonald is planned to be updated?*

I believe the lexicon has been continuously updated by academics and practitioners since the publication of Loughran and McDonald (2011). With machine learning, one can constantly update the relation between text and fundamental/sentiment with the moving-window training sample.

[11] *Sounds a lot like this should all best be done with oracles that support smart-contract blockchain systems for cross-organizational process aware collaboration as per my old keynote speech paper:*

[https://link.springer.com/chapter/10.1007/978-981-10-5427-3\\_61](https://link.springer.com/chapter/10.1007/978-981-10-5427-3_61)

*Information asymmetry that blockchains may resolve, I considered in this paper:*

[https://link.springer.com/chapter/10.1007/978-3-030-22871-2\\_22](https://link.springer.com/chapter/10.1007/978-3-030-22871-2_22)

*Also the work I co-published with of my PhD student may interest you there:*

[https://www.etis.ee/CV/Vimal%20Kumar\\_Dwivedi/est?lang=ENG&tabId=Publications](https://www.etis.ee/CV/Vimal%20Kumar_Dwivedi/est?lang=ENG&tabId=Publications)

*Actually, you can now even do triple-entry ledger management in combination with IoT for this, as I explain in this keynote:*

<https://drive.google.com/file/d/1a1U7z-QLehIcDiodLEfFq7kEWBoUFGxZ/view?usp=sharing>

Thanks for the information! Indeed, Estonia is a leading nation in adopting blockchain technology, and the U.S. can learn a lot from its experience!

[12] *If we focus on the smart contract (tenure, over-voting) that DAO can solve, why can't we rely on centralized fintech firms (like Broadridge)? We can hold them legally liable if they made errors.*

As the chart in my presentation shows, Broadridge is one layer in the labyrinth of proxy plumbing, and could not be solely blamed for the multiple major blunders in under- and over-voting that have happened. This is because currently there is not a reliable way to track the voting rights on shares held in street accounts, shares lent out, or during a “DTC chill.” Organizations like DTC and Broadridge have recently showed interested in blockchain type of technology and I expect that we are heading in that direction. If the technology is successful adapted, then there will be far fewer layers relative to the current ownership plumbing. Therefore, some organizations along that chain will become less relevant.

[13] *I just have a quick question: Given that ML and algorithms are widely used for picking up the stocks, I was wondering the real value of financial analysts. Under the current framework of corporate governance, what the incremental values do these guys really provide? Will they be replaced by the machine in the future?*

I highly recommend my recent paper on exactly this topic (Cao, Jiang, Wang, and Yang (2021)):  
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3840538](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3840538).

[14] *Do you think that ISS voting recommendations, MF voting, Mngt voting recommendations tend to converge over time, especially if each of them (starts to) use FinTech, etc.?*

I actually think this is not necessarily going to be the case. I hope that the technology will be effective in allowing all parties to express their preferences and to aggregate their preferences, instead of making decisions for them. The information environment of the financial market is at its best if it reflects the aggregate wisdom of diverse and independent opinions.

[15] *Will the use of smart contracts (which requires contractual ‘completeness’) be really for crisis management tools (e.g., coco bonds) as the economic reality is so diverse from the moment the contracts were firmed? Will this be wisy? Should we have some contractual flexibility (which smart contracts) might not be able to deliver? On the other side, I do see with good eyes smart contracts reducing the political discretion in cocos triggers.*

Indeed, there is a trade-off between deterring strategic behavior (aiming at bargaining-after-failing) vs. re-optimizing after a major event. The Coco triggers are a great example as policy makers sometimes think a mechanical trigger is better, and at other times they resort to supervisory discretion. Smart contract is best fit for well-defined delivery where the triggering metrics cannot be influenced by the stakeholders. When something major (e.g., a crisis) happens, I do believe we need a smart contract that implements an automatic brake from the smart contracts!

[16] *Even if blockchain increases transparency between the contracting parties, there will still be information asymmetry which can still exist. How can this problem be resolved?*

I believe technology mitigates some information asymmetric while creates some anew. The difference is that the traditional information asymmetry (e.g., insiders hide something from outside investors) is about different “rights,” while the information asymmetry due to different levels of sophistication or adoption is

about different “power.” In other words, under the new technology, people in theory have the same access to information but their interest or ability to access and process differs, hence “equal rights different power.”

[17] *I was wondering what type of companies Jiang is talking about. Is her suggestions regarding alternative data is valid for highly intensive intangible firms or just those selling with nuts and bolts?*

The alternative data could cover firms with intensive intangibles (internet traffic) as well as firms selling nuts and bolts (parking lot images). Currently alternative data mostly cover B2C (business to consumer) firms, but this could change as the definition of “footprints” becomes more and more figurative.

[18] *Do you also see your proposals as an ethical improvement?*

I do believe that leveling the information gap between insiders and outsiders, or the voting gap between large shareholders and retail shareholders, and the like, represent ethical improvements. The topic of ethics in the era of technology is on its own a big topic and I look forward to future lectures in this series to have a focal coverage on this topic.

[19] *If we make "private shares". Then won't there be a larger opportunity for managers to act unethically?*

What I mentioned was the possibility of class of shares sorted on privacy (instead of trading rights or voting rights) from being publicly viewable (though still anonymous) to higher level of privacy. This is about letting shareholders (mostly outsider) choose a class of shares that suit their preferences – and let the market decide the fair prices to each. Insiders will still be subject to all the scrutiny under the current law. In fact, there could be a different code for insider shares if all shares are put on a block chain, for example.

[20] *Hi Prof Jiang, any blockchain system in place to solve the double voting issue? What will the future tech-driven system be used by the players in this industry?*

Solving double voting is the same as solving double spending, which blockchains already succeeded in doing so. The country Sierra Leone conducted a blockchain-based political election in 2019 where the system ensured that each citizen got to vote only once. Such a technology has not been implemented in our proxy voting system yet, though there have been small bits of pooling of some shareholders along some distributed ledgers. There is no reason why we cannot adopt the system to solve the serious plumbing problems in shareholder voting.