

# ***The International EFAL-IT BLOG***

**Information Technology *innovations in Economics, Finance, Accounting, and Law***  
**Volume 1 – Issue 8/2020 – Bacau (Romania)**

---

Coventry, 01.08.2020

## **Quantum finance. Opportunities and threats.**

### **AUTHOR(s)**

Dr. Alessio Faccia  
*Lecturer in Accounting - Coventry University*

### **ABSTRACT**

After the discovery of Google (September 2019), we enter the heart of the quantum computer race: behind young and old under the watchful eye of national security. Sycamore, the 54 qubit machine built by Google, has shown that a sequence of random numbers is truly random. To simplify, Google would have asked its computer to perform a complex mathematical operation by generating random numbers. And she did it in just 3 minutes and 20 seconds. A calculation that a traditional supercomputer would solve in 10,000 years. The experiment was hailed as the beginning of an era. For the first time the quantum computer would seem something real. Far away in time but real, indeed achievable. The biggest threat is that current cryptographic systems will become completely useless and obsolete once this technology becomes commercial and available on a large scale at lower costs. The world of finance will be positively impacted from the point of view of the forecasting capacity and negatively from that of the security of the electronic keys that protect the savings.

### **KEYWORDS**

Quantum; finance; cybersecurity; cryptography; Google.

### **REFERENCES**

- Faccia, A. & Moşteanu, N. R. (2019). Accounting and Blockchain technology: from double-entry to triple-entry. *The Business & Management Review*, 10(2), 108-116.
- Faccia, A. & Moşteanu, N. R. (2019). Tax evasion - information system and Blockchain. *Journal of Information Systems & Operations Management*, 13(1), 65-74.
- Faccia, A. (2019, August). Data and Information Flows: Assessing Threads and Opportunities to Ensure Privacy and Investment Returns. In *Proceedings of the 2019 3rd International Conference on Cloud and Big Data Computing* (pp. 54-59).
- Faccia, A., & Mosco, D. (2019). Understanding the Nature of Accounts Using Comprehensive Tools to Understand Financial Statements.
- Faccia, A., & Mosteanu, N. R. (2019). Accounting and blockchain technology: from double-entry to triple-entry. *The Business & Management Review*, 10(2), 108-116.
- Faccia, A., Al Naqbi, M. Y. K., & Lootah, S. A. (2019, August). Integrated Cloud Financial Accounting Cycle: How Artificial Intelligence, Blockchain, and XBRL will Change the Accounting, Fiscal and Auditing Practices. In *Proceedings of the 2019 3rd International Conference on Cloud and Big Data Computing* (pp. 31-37).
- Faccia, A., Moşteanu, N. R., Cavaliere, L. P., L. & De Santis, G. (2020). The rise of online banks in Italy "WIDIBA Bank" Case Study. *Financial Markets, Institutions and Risks*, 4(2).
- Faccia, A., Moşteanu, N. R., Fahed, M. & Capitanio, F. (2019). Accounting Information Systems and ERP in the UAE. In *Proceedings of 3rd International Conference on Cloud and Big Data Computing*.
- Faccia, A., Mosteanu, N. R., Fahed, M., & Capitanio, F. (2019, August). Accounting Information Systems and ERP in the UAE: An Assessment of the Current and Future Challenges to Handle Big Data.
- Moşteanu N. R., Faccia, A. (2020). Digital Systems and New Challenges of Financial Management – FinTech, XBRL, Blockchain and Cryptocurrencies. *Quality-Access to Success Journal*, 21(174), 159-166.
- Moşteanu N. R., Faccia, A., Ansari A., Shamout, M. D. (2020). Sustainability Integration in Supply Chain Management through Systematic Literature Review. *Quality-Access to Success Journal*, 21(176), 117-123.

# ***The International EFAL-IT BLOG***

**Information Technology *innovations in Economics, Finance, Accounting, and Law***  
**Volume 1 – Issue 8/2020 – Bacau (Romania)**

---

- Moşteanu, D., Roxana, N., Faccia, D., Cavaliere, L. P. L., & Bhatia, S. (2020). Digital Technologies' Implementation within Financial and Banking System during Socio Distancing Restrictions–Back to the Future. *International Journal of Advanced Research in Engineering and Technology*, 11(6).
- Moşteanu, N. R., Faccia, A. & Cavaliere, L. P. L. (2020). Digitalization and green economy - changes of business perspectives. In *Proceedings of 4th International Conference on Cloud and Big Data Computing (ICCBDC)*, Liverpool, UK, August 26-28, 2020. Forthcoming
- Moşteanu, N. R., Faccia, A. & Cavaliere, L. P. L. (2020). Disaster Management - Digitalization and Financial Resources - important factors to keep the organization ongoing. In *Proceedings of 4th International Conference on Cloud and Big Data Computing (ICCBDC)*, Liverpool, UK, August 26-28, 2020. Forthcoming
- Mosteanu, N. R., Faccia, A., Ansari, A., Shamout, M. D., & Capitanio, F. (2020). Sustainability Integration in Supply Chain Management through Systematic Literature Review. *Calitatea*, 21(176), 117-123.
- Mosteanu, N. R., Faccia, A., Torrebruno, G., Torrebruno, F. (2019). The newest intelligent financial decisions tool: fractals. A smart approach to assess the risk. *The Business & Management Review*, 10(2), 89-97.
- Moşteanu, N. R., Faccia, A., Torrebruno, G., Torrebruno, F. (2019). Fractals- A Smart Financial Tool to Assess Business Management Decisions. *Journal of Information Systems & Operations Management*, 13(1), 45-56.
- Moşteanu, N. R., Faccia, A., Torrebruno, G., Torrebruno, F. (2019). The newest intelligent financial decisions tool: fractals. A smart approach to assess the risk. *The Business & Management Review*, 10(2), 89-97.
- Mosteanu, N. R., Faccia, A., Torrebruno, G., Torrebruno, F. (2019). Fractals–A Smart Financial Tool to Assess Business Management Decisions. *Journal of Information Systems & Operations Management*, 45-56.
- Petratos, P., & Faccia, A. (2019, August). Accounting Information Systems and System of Systems: Assessing Security with Attack Surface Methodology. In *Proceedings of the 2019 3rd International Conference on Cloud and Big Data Computing* (pp. 100-105).