advocates the "codification of law" (De Filippi and Hassan, 2018). Various organizations and startups are investigating how law could be codified and made machine-readable to facilitate the transposition of contractual obligations into digital contract code. New Zealand recently carried out a project to explore how laws could be rewritten and laid out programmatically so that they can be analysed by a machine (Darabi, 2018), and several startups, such as Monax[28] and ContraxSuite,[29] are offering "legal engineering" services to help codify contractual obligations and make them machine-readable, in order to ease the writing of smart contracts.

While the move from "code is law" to "law is code" (i.e. law defined as a code) could allow for significant gains in efficiency and transparency and facilitate the use of smart contracts, the difficulty in transposing the flexibility of legal rules into a formalized language that can be interpreted and used by machines may also lead to greater rigidity in the implementation of rules (De Filippi and Hassan, 2018). Finding the right balance between greater efficiency through machine-readability and flexibility is essential.

(v) Legal identification of companies

When a transaction occurs, being able to properly identify counterparties is indispensable. Legal identification becomes more important, but also more challenging, in a world in which many trade and financial transactions are international and span a number of jurisdictions that may not apply the same standards, especially when transactions can take place in nanoseconds, like in the financial sector. The need for a consistent approach was highlighted by the 2008 financial crisis, which unveiled fundamental problems in existing systems for the identification of entities, leading the G20 to call for the creation of a global legal entity identifier (LEI)[30] – i.e. a global framework for the legal identification of the economic actors involved in financial transactions.[31]

While not a prerequisite for the implementation of blockchain applications, the existence of a global LEI would greatly facilitate the processing of blockchain-based transactions and allow the technology to be used in a more efficient way. Current efforts to design a global system are welcome, but greater international coordination may be required to avoid the development of differing systems. Indeed, the global LEI covers legal entities involved in financial transactions. In parallel, discussions are taking place at the WCO to develop a global trader identification number for traders. Ensuring consistency between these two approaches, or joining efforts to develop a common system, would bring clear benefits to entities involved in international trade transactions and would support the deployment of technologies such as Blockchain that have the potential to significantly improve trade processes. Conversely, the use of Blockchain could prove of interest in supporting efforts to develop global entity identification systems.