# 1 Introduction

The world is continually changing, driven by technological innovations that affect the way we live and do business. The history of the world economy is intimately linked to technological progress. The invention of the steam engine mechanized production, the discovery of electricity enabled mass production, and the rise of the internet made it possible to coordinate various production stages at a distance, leading to a fragmentation of production that gave rise to global value chains.

However, while information and communication technologies have deeply affected the organization of production, they have not yet succeeded in digitalizing trade transactions. In spite of recent efforts to put in place electronic processes to handle some aspects of trade procedures, such as electronic single windows, trade transactions still remain heavily dependent on paper. A shipment of roses from Kenya to Rotterdam can generate a pile of paper 25 cm high, and the cost of handling it can be higher than the cost of moving the containers (Allison, 2016).

Security concerns and the difficulty of coordinating data flows across borders and between the multiple parties involved in an international trade transaction have hampered efforts to digitalize trade. A new technology, Blockchain, is seen by many as a possible game-changer. But what is Blockchain, and what is the potential of this technology for international trade?

A blockchain is a digital record of transactions – or ledger – that is decentralized (no single entity controls the network) and distributed (records are shared with all participants), and in which transactions are stored in a highly secure, verifiable and permanent way using various cryptographic* techniques. It is a continuously growing list of records, which are combined in "blocks" that are then "chained" to each other using cryptography – hence the term "blockchain". As transactions are shared, verified and validated on a peer-to-peer basis, blockchains can operate without the need for a central authority or trusted intermediaries, and information, once added to a blockchain, is time-stamped* and cannot easily be modified. Blockchain therefore enables the creation of a shared, trusted ledger that all participants can access and check at any time, but that no single party can control. Blockchain is, as The Economist (2015) calls it, a "trust machine". Because of the use of various