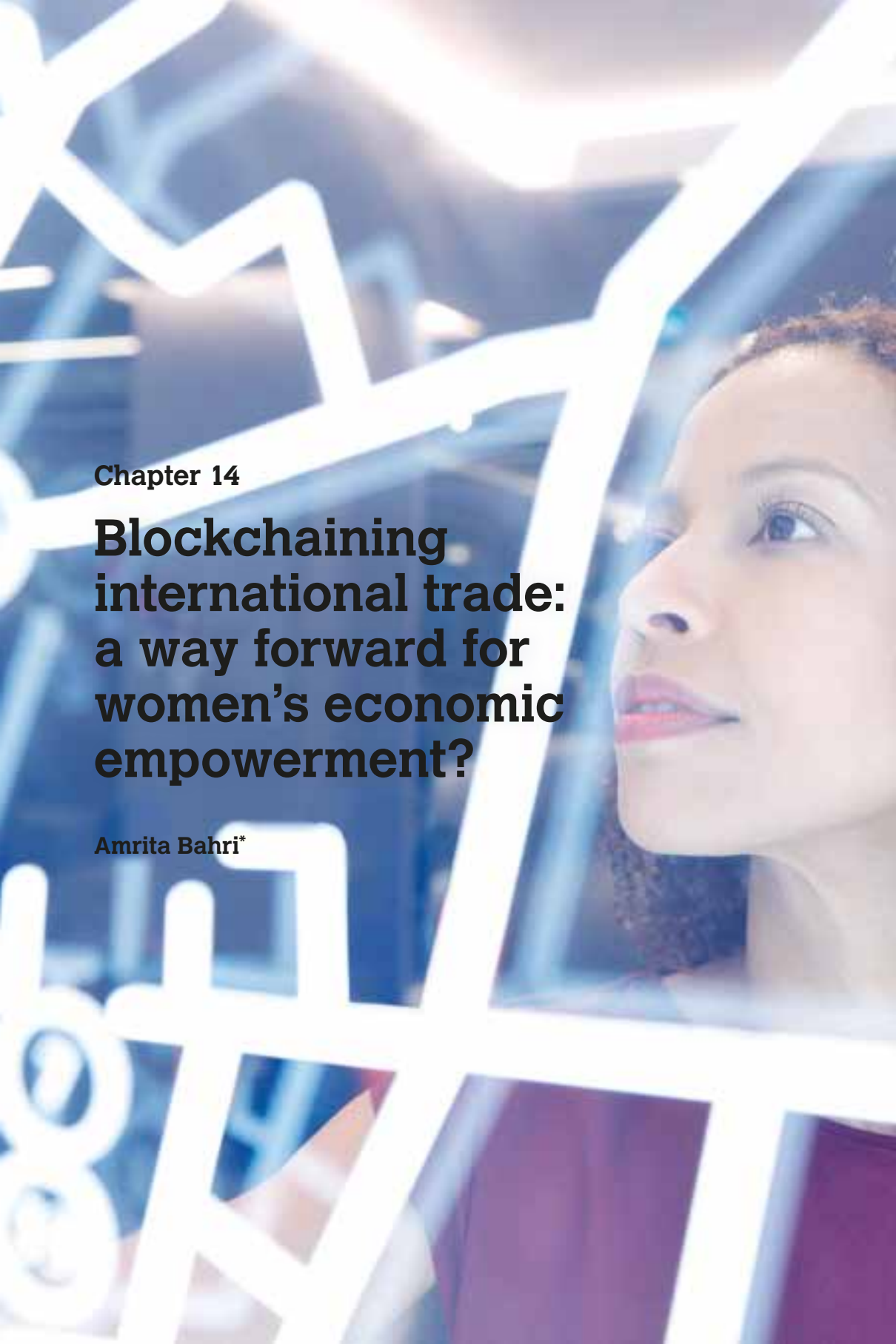

Chapter 14

Blockchaining international trade: a way forward for women's economic empowerment?

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Abstract

Blockchain technology holds considerable promise to boost women's participation in international trade. Blockchain's anonymity and efficiency could enable many women, who otherwise would be constrained by law, custom or high costs, to engage in financial and business transactions. Blockchain can be used to enable women who lack identification documents to undertake transactions that otherwise would require official identification, and to prove their ownership of assets without interventions from male family members. Blockchain can help micro, small and medium-sized enterprises (MSMEs), more than 30 per cent of which are owned by women, to overcome costs associated with exporting and importing, and interact easily with consumers, other businesses engaged in the supply chain, customs officers and regulatory bodies. Blockchain also can increase women farmers' access to information on crops and market conditions, thus improving their bargaining position. However, if not regulated properly, the expanded use of blockchain also could increase the relative return to sophisticated technology skills that men are more likely to have, and increase the digital divide between men and women. The World Trade Organization (WTO) could play a key role in developing guidelines for the use of blockchain in international trade to support the efficient and inclusive adoption of blockchain technology.

** The contents of this chapter are the sole responsibility of the author and are not meant to represent the position or opinions of the WTO or its members.*

Introduction

The 2017 Joint Declaration on Trade and Women's Economic Empowerment (2017 Declaration) has underscored the interdependence of gender justice and sustainable economic development. The 2017 Declaration reaffirms that "international trade and investment are engines of economic growth for both developing and developed countries, and that improving women's access to opportunities and removing barriers to their participation in national and international economies contributes to sustainable economic development".[1] It seeks to build a framework that will guide members to adopt or adapt gender-responsive trade policies that will eliminate barriers to trade for women and hence increase their participation in trade. This multilateral initiative aligns with and complements the Convention on the Elimination of all Forms of Discrimination against Women 1979 and Goal 5 of the Sustainable Development Goals in the United Nations 2030 Agenda for Sustainable Development.

This is a promising development for the multilateral trading system. Even though it is a non-binding declaration, it marks a concrete starting point for future deliberations and discussions on how trade can accommodate gender justice concerns. However, it is surprising to see that almost one third of the WTO members have refused to join this endeavour. Most of these non-signatory members, as compared to the signatory members, have a much lower combined average score on the Women, Business and the Law (WBL) global index (World Bank Group, 2019).[2] The WBL as calculated by the World Bank is based on several country indicators, such as women-friendly laws and procedures relating to mobility, employment, remuneration, marriage, motherhood, entrepreneurship and access to finance.

Critiques have called the 2017 Declaration a Trojan Horse, which may bring in more contentious issues to the already stalled multilateral trade negotiations (Bissio, 2017), as it can "allow developed countries to use the advantage of more forward gender policies to obstruct exports from underdeveloped nations" (Singh, 2017). In addition, Indian officials have observed that "gender does not relate to trade and hence WTO should refrain from bringing in non-trade issues" (Prabhu, 2017). There is strong evidence to contradict these concerns. Neoliberal economists have regarded trade liberalization as the most effective mechanism to empower women (Bhagwati, 2004; Seguino, 2000).[3] McKinsey Global Institute has shown that advancing gender equality could add nearly US$ 28 trillion to global annual GDP (2015). Moreover, the Trojan Horse argument is unfounded and misplaced, as the very nature of this initiative is non-binding in nature. Neither does it impose any obligation on signing members to undertake actions, nor does it confer any right on any member to justify an otherwise WTO-inconsistent measure. The only plausible way for developed countries with advanced gender-responsive trade policies to obstruct exports from developing countries could be through the invocation of the public morality exception under Article XX(a) of General Agreement on Tariffs and Trade 1994 (GATT 1994); however, this option remains available to WTO members with or without

being a party to the 2017 Declaration (Bahri, 2020).

The 2017 Declaration should therefore not be seen as a Trojan Horse. On the contrary, it is a much awaited multilateral response that can usher in a new era of trade inclusiveness. This development coincides with an era of trade digitalization that is witnessing the creation of new products, new markets, new services and different ways of production and transportation. This wave of digitalization comes with a promise to make international trade more inclusive in the future as it will allow new players to participate and reap the benefits of trade across borders. In particular, trade digitalization can contribute to the economic empowerment of women by allowing them to overcome multiple barriers that impede their participation in trade. Paragraph 4 of the 2017 Declaration affirms that the regulation of trade digitalization (including trends such as e-commerce and blockchain technology) can remove barriers for "women's economic empowerment and increase their participation in trade".[4]

"Blockchain – a new trend in trade digitalization that promises to transform international trade – can help women in overcoming barriers to trade."

This chapter focuses on how blockchain – a new trend in trade digitalization that promises to transform international trade – can help women in overcoming barriers to trade. The role multilateral regulation in general, and the WTO in particular, can play in fostering gender justice through blockchain technology is also examined. This chapter uses a typology of "blockchaining" to refer to the conduct of international trade through blockchain technology. The first section briefly explains the concept of blockchain technology. The following section outlines how blockchaining trade can enable women to overcome the barriers that impede their participation in trade. The final section examines whether blockchaining international trade requires multilateral regulation and the possible role the WTO can play in this respect.

Blockchain explained

Blockchain is the new buzzword in the international trade community. Different public and private stakeholders around the world are talking about this technology, which may shape and change the way international trade takes place in the future. Yet, only a few of us really understand what this technology stands for and what it entails. Simply put, blockchain enables a list of transactions (known as a ledger) to be stored in a decentralized manner. It is a kind of electronic bookkeeping that structures data, encrypts it and stores it on a network. Unlike traditional databases that are administered and controlled by a centralized entity, blockchain technology is based on a peer-to-peer network and is administered in a decentralized manner (Ganne, 2018, p. vii). The concept is simple, yet experts argue that its potential to revamp international trade is quite significant.

Studies show that this distributed-ledger technology could lower the cost of cross-border payments, security trading and compliance by US$ 15-20 billion per year by 2022 (McKinsey, 2018, p. 5). Recent developments also show that blockchain has the potential of making foreign trade more inclusive by removing the barriers women face in trade and commerce. This can be done by including unbanked women in the formal financial system, closing or reducing the small business credit gap, enhancing transparency and the decentralized creation of records, and reducing transaction costs and time involved in doing business. Blockchain can promote financial inclusion, as its key benefits include instant settlement, no third-party intermediary such as a bank, digital payments, low costs and fees, and secure, decentralized and risk-free transactions. These benefits help us understand why blockchain can change the way we trade and make this process more inclusive in nature. The employment of blockchain technology for the conduct of foreign trade can be termed "blockchaining trade".

Barriers to trade for women: How blockchain can help

Lacking a universally accepted definition for economic empowerment of women, this chapter views it as a process that provides women with equal economic opportunities by eliminating or reducing the barriers women face in accessing and owning economic resources. Multiple barriers impede the economic empowerment of women, including: lack of education and skills development; restrictive access to employment; excessive household responsibilities; poor working conditions and discriminatory wage rates; insufficient protection of maternity needs; customary norms on gender and patriarchal social set-ups; discriminatory legislation and policy frameworks; lack of ownership of property and other assets such as copyrights and patents; and limited access to banking services and financing opportunities. These wide-ranging barriers work together to hinder women's access to economic opportunities by impeding their control over or ownership of economic resources. Addressing most of these barriers is outside the scope of this chapter due to space constraints. This academic intervention outlines and addresses only those barriers that can be possibly reduced or removed with the help of blockchaining international trade. These barriers, and the ways in which blockchain technology can address them, are categorized in the following three sub-sections.

1. Access to finance and markets

In several countries, various barriers impede women's access to owning a simple bank account (World Bank Group and WTO, 2020, p. 96). In the rural areas of low income countries, only about 20 per cent of bank account holders are women (UN Women, 2019, p. 5). Until 2017, the Democratic Republic of Congo had laws that forbade women from opening a bank account, registering a business or even signing simple contracts (World Bank Group, 2019, p. 11). Certain other countries, including Bolivia, Malawi, Maldives and Mauritius, have recently repealed similar discriminatory laws. Yet, it is still possible to find such laws, including in Bahrain and Uzbekistan. In Bahrain, for instance, the law designates the husband as the head of family and requires the wife to obtain permission from him for any task

such as opening a bank account or registering a business (World Bank Group, 2019, p. 13).

Blockchain cannot change such laws and societal norms, but its peer-to-peer technology can allow women to carry out payment transactions without an intervention from a third-party intermediary such as a bank. This enables women to have access to finance, receive and send money, save money in a secured manner and create a financial history that will allow them to build creditworthiness and hence secure credit in a cost-effective manner. Lower costs associated with access to finance, secured transactions and the mobile nature of this technology empower women who may not have an identity document to open a bank account. This also helps women who may not be able to afford the associated banking costs, or who may be deterred from going in person to a bank branch due to familial constraints and patriarchal cultural norms. In this manner, blockchain technology embodies the notion of women's financial autonomy and independence.

UN Women and the World Food Programme have launched a blockchain-backed initiative that allows Syrian refugee women in Jordan to have an online account without going through any third-party financial intermediary (UN Women, 2018). This enables these women to access their funds through a simple eye-scan at selected supermarkets and receive cash in a secure and cost-effective manner. Among many other finance-oriented initiatives, a blockchain start-up – Spenn – is exploring ways of making instant financial transfers through simple SMS services that do not require an internet-backed smartphone.[5] These innovations allow women living in villages, hundreds or thousands miles away from bank branches, to engage in national and international transactions, apply for loans and have purchasing power in their hands. Statistics demonstrate that women-owned businesses receive 23 per cent less funding compared to male-owned businesses (OECD, 2018, pp. 5 and 22). Platforms such as EtherLoan and WeiFund can enable women entrepreneurs to build up creditworthiness with the help of monetary transactions recorded in their individual blockchain-based identity.[6] In this manner, women in developing countries can secure a loan without having to go through cumbersome banking procedures.

2. Creation and storage of identity and ownership documents

According to the World Bank, women in developing countries are less likely than men to hold an official identification document such as a birth certificate, a passport or any other kind of national identity card (Hanmer and Dahan, 2015). The World Bank's Women, Business and the Law report shows that, in certain countries including Afghanistan, Benin and Pakistan, a married woman cannot apply for a national identity card in the same way as a married man (World Bank, 2018, p. 2). This restricts women's ability to work, do business or travel. Without an official identity document, women cannot enter into contracts, register businesses, open bank accounts, secure credit or develop a credit history. Acknowledging this barrier, the UN Sustainable Development Goal 16.9 has set the target of providing everyone (regardless of gender) with a legal

identity by 2030. Blockchain can help achieve this target as it can liberate women living without an official identification through creation and storage of their personal identification documents in an immutable manner. A digital identity can help women who do not have a passport or any kind of personal identification document to apply for bank accounts, secure employment and register businesses. However, the legal validity of blockchain-generated identification documents is an issue that, absent a universally accepted framework, would depend heavily on each country's laws and regulations.

Blockchain can also store records such as financial transactions, proofs of ownership and employment history in a secure and cost-effective manner. Storing land titles on blockchain can allow women to prove their land ownership without any possible interference from a male family member or any possibility of tampering or fraud. An ongoing project in Viet Nam is exploring how blockchain can enable businesswomen to prove their ownership of assets, establish ownership of intellectual property, secure a digital identity and boost their overall access to finance (Hammond and Young, 2018).

3. Engagement in global value chains and enhanced market access for MSMEs

More than 30 per cent of MSMEs in the world are owned by women entrepreneurs (International Finance Cooperation, 2011, p. 5). Yet, women have not been able to participate actively in international trade. Only one in five of these MSMEs engage in international trade (Abney and Gonzalez Laya, 2018). What impedes MSMEs' engagement in foreign trade are various factors including tariff and non-tariff barriers, cumbersome and expensive customs procedures, financial transactions with associated costs and difficulty in accessing finance. Removal of these barriers may not just empower these enterprises, but also those women owning almost one third of all formal MSMEs in the world. Blockchain can help in this respect. A report by the European Parliament observes that blockchain can help MSMEs internationalize, overcome costs associated with exporting and importing, and interact easily with consumers, other businesses engaged in the supply chain, customs officers and regulatory bodies (European Parliament, 2018).

Recent studies have shown that blockchain can possibly save 20 per cent of total transportation expenses, and it can reduce barriers within global supply chains and increase global trade by approximately 15 per cent (Ganne, 2018, pp. xi and xii). It can also lower the cost of doing business by cutting paperwork requirements and administrative hurdles posed by customs authorities and financial institutions. Blockchain can automate the credit checks and verification measures throughout the supply chain, as it can automatically register documents and store new data in a decentralized fashion. All of this can enable the financial sector and the shipping industry, for example, to reduce total costs by 15 to 30 per cent (Ganne, 2018, p. xii). This is a significant cost reduction for MSMEs, which would indirectly facilitate and encourage women to access global markets. Hence, lower costs for financial, customs, transportation and legal requirements can help MSMEs

gain competitiveness in foreign markets at higher profitability. This in turn can increase their overall market access and make it easier for them to participate in international trade.

A UN blockchain-based initiative – Buy from Women – aims to equip female farmers in developing countries with crucial information on the overall size of their cultivable land, production and weather forecasts, and market prices of their products through simple text messages.[7] This innovation can connect female farmers to global value chains (GVCs), thereby increasing their market access and awareness to be able to negotiate better deals. It could enable them to understand and track the journey their produce undertakes before it reaches the final consumer, and hence be better informed about prices and the sources of demand. Enhanced traceability of products could enable female farmers and entrepreneurs in developing countries to identify new market opportunities and expand existing market access.

"Blockchain technology embodies the notion of women's financial autonomy and independence."

Blockchain is certainly not a magic wand that simply needs to be waved in order to achieve economic empowerment of women. It cannot lead to the amendment of gender-discriminatory laws. It cannot change the ways in which gender-neutral laws are enforced in some countries. It cannot reconstruct the societal set-ups entrenched in patriarchal norms and beliefs. However, this study demonstrates that blockchain can serve as a technological intervention that can help women overcome some of the barriers they face in accessing trade and commerce. At the same time, it must also not be forgotten that technologies can further exacerbate gender inequality due to the special nature of skills required to operate the technology. Blockchain in particular is an operative system that needs a highly specialized skill and understanding from its users. Lack of these skills and understanding of how to operate a blockchain-based mobile application, or how to initiate a smart contract, or how to create, save or access documents, might erect even higher and formidable barriers to trade for women.

Most of the blockchain processes need access to the internet. An OECD study has shown that some 327 million fewer women than men in the world have a smartphone device with mobile internet access. Women are heavily under-represented in information and communications technology (ICT) related jobs, and men are four times more likely than women to gain skills and understanding of ICT (OECD, p. 5). Intel and Dalberg (2012) find that 25 per cent of the women who do not engage online are generally not interested in using the internet, and almost all of them believe that accessing the internet would not bring them "any benefit". These findings provide a strong signal that, just like free trade, use of blockchain in trade and commerce can create more barriers for women to trade if not regulated properly. It could further exacerbate the digital divide between men and women. A robust regulatory

environment is therefore needed to make this technology work in parallel for trade as well as for the economic empowerment of women.

Building regulatory environments: why the WTO's role is indispensable

Blockchain is regulated differently in different parts of the world. The United States has taken the lead in proposing regulations on blockchain at the national level, yet multi-layered regulations at federal and state levels and different state laws that regulate blockchain make its operation somewhat complicated and uncertain.[8] With Blockchain and Cryptocurrency Regulation 2019, Mexico has developed a legal framework to regulate the financial technology industry that extends to the regulation of cryptocurrency, crowdfunding and e-money.[9] Belarus has recently enacted a specialized law known as the Digital Economy Development Ordinance, which designates blockchain as a specific sector with a specialized legal regime to regulate blockchain-based businesses in the country.[10] These and many other countries have gone ahead and embraced this growing technology and these evolving business models. Yet, multiple countries still remain sceptical and remain far from either regulating this area or even legalizing it.

China, once considered as a champion of cryptocurrency, has banned the use of initial coin offerings since 2017 (Wildau, 2017). On the other hand, China's Supreme Court has recently issued a landmark ruling that treats blockchain-authenticated evidence as binding in legal disputes (Dotson, 2018). The European Committee on International Trade has issued a report that seeks to develop a regulatory ecosystem in the European Union for blockchain and its businesses (European Parliament, 2018). The report acknowledges the potential role blockchain can play in conducting international trade in a cost-effective manner and making it gender-responsive in nature. However, data privacy concerns and the General Data Protection Regulation (GDPR)[11] seem to make this a distant reality in the European Union unless future blockchain applications can include mechanisms that protect personal data and the privacy of users who want to remain anonymous or be forgotten by the database. As per GDPR, all individuals have a right to decide how their personal information and personal data are treated. This includes the right to be forgotten, right to data portability, right to access information related to you and right to edit or delete your information or data. On the other hand, blockchain is an immutable ledger, which ensures that the available data are visible to everyone in a decentralized manner and that the data cannot be deleted or be forgotten. This conflicting relationship between blockchain-run applications and GDPR brings to light two clashing interests, i.e. the promotion of business and innovation, and the protection of privacy and data.

These examples show that many regulatory agencies are either trying to catch up with this rapidly evolving technology, or are in a major state of disagreement about the value blockchain adds to the ecosystem of international trade. This lack of regulation or the existence of different country regulations paves an uncertain road ahead for blockchain-supported

businesses. This in itself poses a barrier to the use of blockchain for economic empowerment of women. The discussion shows that the nature of blockchain and its employment in cross-border trade cannot solely be regulated by country-specific legislation. A harmonized regulatory ecosystem is needed to counter the challenges that this technology can face in the spheres of data protection, privacy, transparency and financial crime as the data fed into the system are immutable. If not regulated properly and in a unified manner, it can become the "Achilles' heel" of the trade digitalization era by widening the digital divide between women and men and between technologically advanced and not-so-advanced countries. Small firms and marginalized players in trade, such as women in developing countries, could be marginalized even further (Ganne, 2018, p. 88). Internationally accepted global standards or a multilateral regulatory framework is required to ensure that this does not happen. The WTO can play a pivotal role in this respect.

Blockchain is not ripe for a multilaterally negotiated regulation as of yet, as this field is rapidly evolving and new applications and businesses are changing the ways cross-border trade is carried out in different parts of the world. At this early stage, the WTO can develop a set of guidelines for the use of blockchain in international trade. These guidelines can provide guidance to the national regulatory authorities and policymakers on how they can create a business-conducive regulatory environment for these innovative technologies in the future. The guidelines can establish global benchmarks for recognizing the legal validity of blockchain transactions and blockchain-enabled documents. Alternatively, they can by reference incorporate the Model Law on Electronic Transferable Records adopted by United Nations Commission on International Trade Law (UNCITRAL) in 2017, which established the benchmarks and conditions that need to be fulfilled before an electronic record can be treated as a transferable document.[12]

WTO members could establish a Blockchain Advisory Committee to study the applications of blockchain that can have an impact on international trade and make recommendations on how such applications can be regulated in a coherent and unified manner in the future. This Committee should also engage with and gather the opinions of different members on the future of blockchain, the impact it is having in their country and their vision on its regulation. This will enable the Committee to closely follow country-specific developments in blockchain technology impacting international trade. The Committee can identify the regulatory hurdles that possibly need to be addressed by individual members. This committee should have multidisciplinary experts, with expertise in the fields of anti-money laundering, tax evasion, business development, information technology, gender justice, environment protection, data protection and organized crime. This Committee can also include representatives from the private sector, as industries can absorb the high cost the adoption of this technology entails. The interdisciplinary nature of this work will allow for the creation of dialogues and deliberations among different public and private stakeholders, which is essential to preparing a conducive regulatory environment that can

balance different conflicting interests. This will enable the proposed committee to employ a concerted and cooperative approach for making recommendations on developing a framework for international standardization of digitalized transactions and applications.

In this manner, the WTO can play an instrumental role in the development of international standards and best practices that can underpin the regulation of blockchain-based businesses in the future. It can also recommend guidelines for the formation and conduct of public-private partnerships that may be needed to employ blockchain technology for cross-border trade. In doing so, the WTO can apply a gender-responsive approach, i.e. the WTO can recommend gender-responsive best practices that members can employ for digitalization of trade and employment of blockchain technologies to conduct cross-border transactions. Employment of these international standards can ensure that blockchaining trade provides equal economic opportunities to both women and men and that it helps women overcome the barriers to trade they face at the moment. To establish a more predictable and conducive business environment, WTO members can consider and adapt these recommendations, and if possible, transpose them into their national legislation. These recommendations, to begin with, may not have any legal bearing, but they can provide a blueprint for countries to develop their own legislation, regulations and procedures. Pending the establishment of the proposed Advisory Committee, the ongoing Aid for Trade Programme can play an important role in this respect.

Economic empowerment of women has been a focal point for the WTO's Aid for Trade Programme since 2011. Following the 2017 Declaration, the Aid for Trade Work Programme 2018-2019 is the first attempt by the WTO to analyse how international trade can contribute to the design of a gender-responsive trade agenda (WTO, 2018). Focusing on economic diversification and women empowerment, the Programme crafts a multi-pillared role for Aid for Trade. This role is focused on providing youth and women with training on required skills, access to finance, bridging the digital divide between men and women and developed and developing countries, increasing competitiveness of MSMEs and connecting them to GVCs, and organizing thematic workshops on digital connectivity, e-commerce and access to finance issues. Its focus on enhancing digital connectivity and bridging the digital divide opens up a window for discussions on regulating blockchain technology under the Aid for Trade agenda.

Paragraph 5 of the 2017 Declaration mentions the agreement of WTO members to ensure that "Aid for Trade supports tools and know-how for analysing, designing and implementing more gender-responsive trade policies".[13] The future Aid for Trade Work Programmes should showcase the 2017 Declaration as a major achievement and clarify the role Aid for Trade can play in its implementation. Moreover, paragraph 5 together with paragraph 4 (affirming the need to regulate trade digitalization for women's economic empowerment) mandates some discussion on the recent technological trends that are shaping trade and can contribute

to women's empowerment. The upcoming Aid for Trade Work Programmes can offer a suitable venue for these discussions.

Conclusion

Gender inequality is no longer viewed simply as a purely ethical or moral challenge; it is now recognized as a significant challenge to economic development. The world economy suffers when women – who account for one half of the world's working-age population – are not included in the economy and are impeded from contributing to economic growth and development. Recent studies show how achieving the economic empowerment of women has become a compelling business case. Multiple interventions are required to achieve women's economic empowerment, and international trade arguably is one of the required and effective interventions in this respect. Women's empowerment and international trade share an intricate and complex relationship, as the former can be achieved through effective regulation of the latter. The 2017 Declaration is a milestone development that acknowledges this relation and calls for the creation of a gender-responsive trade environment at national and international levels.

In line with the 2017 Declaration, the Trade Impact Group of International Gender Champions (IGC) has designed a questionnaire that calls on WTO members and observers to share best practices on various topics at the upcoming Ministerial Conference (MC 12) to build an evidence base for inclusive trade.[14] These topics are wide-ranging in nature and cover the following aspects: gender-based analysis of trade policy; enhancing women entrepreneurs' participation in public procurement; connecting women entrepreneurs to international value chains; promoting financial inclusion for women; women and trade in trade agreements; and women in digital trade. WTO members have to identify and describe the law, policy or any other instrument they are using to achieve the mentioned good practices. They are also required to address the problem or barrier the mentioned best practices are seeking to overcome. Countries are also to identify the targeted beneficiaries, organizations that are involved in this initiative, activities that are planned, and the technological requirements for the planned activities. The questionnaire also requires the members to describe the results and outcomes they expect to achieve or have already achieved in the above-mentioned areas. This is an appreciable initiative, which will allow the signatory members of the 2017 Declaration to reflect on whether they have made any progress in ensuring that their trade policies and practices are gender-responsive in nature. This can also lead to the sharing of ideas and plans on how existing impediments can be removed and gender equality can be achieved through trade laws, policies and practices. This initiative can foster exchange on the adoption of technology (such as blockchain) and the creation of a conducive regulatory environment for the conduct of trade. It can provoke discussions in and among countries on how to create a gender-positive trade environment with various best practices, including regulation of blockchain-enabled trade transactions and applications.

Other steps also have been taken to implement the actions and non-binding

commitments under the 2017 Declaration. For example, the WTO has nominated a Trade and Gender Focal Point with a dedicated e-mail address, which is responsible for coordinating work among divisions, taking account of what the WTO is doing and identifying further actions and initiatives that the WTO can undertake in this respect. Gender, trade and technology have formed the centre stage of discussions at the last few WTO Public Forums. These Forums have brought companies, civil society organizations, academics, policymakers and intergovernmental organizations together to discuss the issues of connecting women to global trade and digitalization of trade. Moreover, the WTO is planning to implement a women's entrepreneurship programme that will provide women with training on specific tools and information on how they can achieve economic empowerment through trade. This training programme could include modules on using simple blockchain applications to create and store identification documents, create accounts to receive and send money without banking services, create and use financial transactions to prove creditworthiness, apply for micro-finance, credits and trade financing, and apply for and store intellectual property rights (IPR)-related ownership documents. Such an initiative can help reduce the digital divide between men and women by enabling women to reap the benefits of blockchaining trade. Inclusion of these modules can breathe life into the 2017 Declaration, which explicitly acknowledges the role of technology in women's empowerment. This initiative, along with other proposed actions, will fan the flame even further. With the ongoing discussions and scholarly works on trade, technology and gender, half the battle against gender inequality is already won. We need to keep these discussions going in order to win the other half of this battle for gender justice.

Endnotes

I thank Professor Laura Carlson (Stockholm University) for her comments and feedback. I also thank my brilliant research assistant, Ana Alfaro Pizana, for her initial idea of using blockchain for trade and gender, and encouraging me to write this piece and subsequent help with research and editing. I also thank Gemma Parra and Guillermo Moad for their inputs. All errors and omissions are author's own.

[1] Joint Declaration on Trade and Women's Economic Empowerment, signed at WTO Ministerial Conference (Buenos Aires, December 2017).

[2] The members that have not signed the 2017 Declaration have a combined average score of 65.6 per cent, and the members that have signed it have a combined average score of 80.7.

[3] Keynesian economists have countered this point of view.

[4] 2017 Declaration, para. 4.

[5] Spenn Mobile Banking website, https://www.spenn.com/.

[6] Etherloan website, http://www.etherloan.io/; WeiFund website, http://weifund.io/?utm_source=StateOfTheDApps.

[7] For more information, see the UN Women webpage, http://www.unwomen.org/en/digital-library/publications/2017/3/buy-from-women-platform-brochure.

[8] Several bills are pending approval: Virtual Currency Consumer Protection Act of 2018; Virtual Currency Market and Regulatory Competitiveness Act of 2018; Blockchain Regulatory Certainty Act 2019.

[9] Ley Para Regular las Instituciones de Tecnología Financiera (Diario Oficial de la Federación el 9 de marzo de 2018).

[10] Digital Economy Development Ordinance (Ordinance 8, 21 December 2017).

[11] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC.

[12] Model Law on Electronic Transferable Records of the United Nations Commission on International Trade Law (7 December 2017, A/72/458).

[13] 2017 Declaration, para. 5.

[14] Trade Impact Group: Call for Good Practices, https://s3.eu-west-2.amazonaws.com/igc-production/files/

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Comments

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Since the launch of the 2017 Declaration on Trade and Women's Economic Empowerment, growing attention has been paid to the role that trade can play in helping women realize their full potential in the world economy. In a joint publication titled *Women and Trade: The Role of Trade in Promoting Gender Equality*, the World Bank and the World Trade Organization (WTO) show that trade is largely beneficial to women. Firms that engage in international trade employ more women than non-exporting firms (33 per cent on average compared to 24 per cent for non-exporting firms) (World Bank and WTO, 2020), and trade increases women's wages and economic equality, and creates better jobs for women.

However, women face many more constraints than men in participating in international trade both in terms of "at the border barriers" – e.g. discrimination faced at border crossings – and "behind the border" constraints like difficulty to obtain finance, including trade finance. While much has been said on the role that e-commerce plays in empowering women, few studies have so far discussed how blockchain technology can help empower women to trade. The chapter written by Amrita Bahri provides useful insights into how this technology can help women reap the economic benefits of international trade.

The author argues that "blockchaining international trade", i.e. using blockchain to process trade transactions, can boost women's participation in international trade in three ways. First, it can help women access finance by allowing unbanked women to carry out payment transactions on a peer-to-peer basis without a third-party intermediary and in full independence. The use of blockchain to "bank the unbanked" and to facilitate the transfer of money has been widely explored both in the literature and in the business world and could have a major impact on women. Beyond the examples mentioned by the author, another interesting initiative is Vipicash, a FinTech start-up that uses blockchain technology to enable secure money transfer among women, so that they can have access and control over their own money, independent of the male members of their family. Another interesting potential of blockchain noted by the author is the opportunity that the technology offers to traders to create their own financial history. This is particularly important for micro, small and medium-sized enterprises (MSMEs) and women, who often struggle to access finance, including trade finance, because of lack of credit history.

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The second channel though which blockchain can empower women, the author argues, is through the creation and storage of identity and ownership documents. The question of identity lies at the heart of international trade. It determines in many ways the ability to trade. Trade requires knowing who you deal with and being able to verify and trust the identity of your trading partner. Blockchain opens new ground in that respect because it allows people without an official identity to create their own digital identity. It enables the emergence of what is called the self-sovereign identity (SSI) model according to which individuals and organizations have sole ownership of their digital identity and control it. The rise of SSI, combined with the possibility that blockchain offers to build one's own financial history, could potentially be one of the most powerful levers to empower women.

When it comes to trade, a third critical channel, the author notes, is the potential that blockchain opens to facilitate engagement in global value chains (GVCs) and enhance market access for MSMEs, many of which are women-owned. Blockchain's potential to slash coordination and processing costs is what led major stakeholders involved in international trade, from banks to shipping companies and big retailers, to inject millions to build blockchain-based consortia to enhance transparency and remove frictions along supply chains.[1] The cost reductions that could result from these initiatives could prove particularly beneficial for small traders.

"Growing attention has been paid to the role that trade can play in helping women realize their full potential in the world economy."

However, as the author rightly notes, blockchain is not a magic wand. Beyond the regulatory aspects that the author discusses – e.g. blockchain cannot change the way in which laws are enforced, blockchain poses a risk of regulatory fragmentation – a particularly important issue is that of interoperability. Blockchain can be a powerful tool to remove frictions from international trade, but only if the multiple platforms that are emerging in the financial, transportation and logistics, and customs fields talk to each other. Unfortunately, we are currently facing a digital island problem. Making blockchain trade-related platforms interoperate will not only require finding ways to build technical bridges between platforms built on different distributed-ledger technologies, but also aligning the semantics (what means what), data models and processes. This is where multilateral organizations can play an instrumental role.

The author suggests three valuable courses of action for the WTO. First, the WTO could develop a set of guidelines for the use of blockchain in international trade to provide guidance to national authorities on how they can create a business-conducive regulatory environment for the use of blockchain. Second, the author proposes the establishment of a Blockchain Advisory Committee to identify regulatory hurdles, study the applications of blockchain that can have

an impact on international trade and make recommendations on how such applications can be regulated in a coherent manner. Third, training on blockchain could be integrated into WTO training, in particular the woman entrepreneurship programme that the Organization is planning.

Blockchain can be a powerful tool to remove frictions from international trade and promote women's access to international markets but realizing the full potential of blockchain will require more than the technology. It will require political will and action to allow interoperability of blockchain platforms and to create a regulatory framework that is conducive to the large-scale deployment of the technology. But it will also require addressing the digital divide through investment in physical information and communications technology (ICT) infrastructure and information technology (IT) education for women. Women's access to the internet and ownership of digital devices remain significantly lower than men's[2] and tech-related jobs remain male-dominated. This is also true for blockchain.[3] Multilateral organizations have a key role to play in helping address these issues and turn blockchain's potential for women into a reality. And so do women themselves. Women's blockchain networks, such as Global Women in Blockchain[4] and African Women in Blockchain,[5] that assist women and help them seize the opportunities that this new technology opens, are welcome developments that will, no doubt, contribute to making blockchain work for women's economic empowerment.

Endnotes

[1] For an overview of various consortia established in the trade and trade finance space, see Patel and Ganne (2019).

[2] In developing countries the internet access gap is 25 per cent on average, with a wide variation across regions (Intel and Dalberg, 2012).

[3] A 2018 study by Longhash showed that among 100 blockchain start-ups, female employees accounted for just 14.5 per cent and female managers for 7 per cent only. In 78 out of the 100 start-ups, there is no female leader (Longhash, 2018).

[4] https://globalwomeninblockchain.org/.

[5] https://afriblockchain.org/africa-women-in-blockchain/.

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