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# Rethinking International Trade and Investment Law: Harnessing the Potential of Emerging Technologies in the Global Economic Landscape

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## ABSTRACT

*International trade and investment law play a vital role in regulating cross-border economic activity and promoting a fair and open trading environment. However, the rise of emerging technologies and automation presents new challenges and opportunities for these legal regimes. The increasing use of technology has the potential to disrupt traditional patterns of trade and investment, leading to the need for a re-evaluation of existing legal concepts and principles. In particular, the implications of cybersecurity, data privacy, and artificial intelligence need to be considered in the context of international trade and investment law. To ensure their relevance and effectiveness, it is necessary for these legal regimes to adapt to the changing landscape of cross-border economic activity in the digital age. This may involve the negotiation of new agreements, the development of common standards and best practices, and closer collaboration between governments, businesses, and other stakeholders. The future of international trade and investment law will be shaped by the ability of these legal regimes to respond to the challenges and opportunities posed by emerging technologies and automation.*

**Keywords:** investment, cross border, international transaction, economy, trade.

## I. INTRODUCTION

International trade and investment law plays a crucial role in shaping the global economy, facilitating cross-border exchange of goods, services, and capital, and promoting economic growth and development. However, the rapid pace of technological change and automation is disrupting the traditional trade and investment landscape, presenting new challenges and opportunities for the international trade and investment system. The purpose of this paper is to examine the impact of emerging technologies and automation on the future of international trade and investment law and to consider the role that this field of law can play in responding

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to these developments.

As noted by the World Trade Organization (WTO), "International trade has been one of the driving forces behind globalization, playing a key role in the expansion of economic activity, the creation of jobs and the reduction of poverty."<sup>2</sup> However, the increasing impact of new technologies, such as artificial intelligence (AI), blockchain, and the Internet of Things (IoT), is transforming the way that businesses operate and interact with each other across borders. At the same time, the increasing use of automation in production processes and supply chains is having a profound impact on the global economy, affecting employment, productivity, and competitiveness. These changes are having a significant impact on the international trade and investment system, posing new regulatory challenges and opportunities for the field of international trade and investment law.

To better understand the implications of these developments, this paper will begin by exploring the impact of emerging technologies on international trade and investment law. This will include a discussion of the key technologies shaping the future of trade and investment and an analysis of the challenges and opportunities that these technologies present for the international trade and investment system. The paper will then turn to an examination of the future of automation in the global economy, including an analysis of the implications of automation for international trade and investment and a discussion of the regulatory challenges posed by the increasing use of automation in the international trade and investment context.

The final section of the paper will consider the role of international trade and investment law in responding to the implications of emerging technologies and automation. This will include a discussion of the existing international trade and investment framework and its limitations in addressing these developments, as well as a proposal for potential reforms to the international trade and investment system to better respond to the changing landscape of technology and automation.

## **II. THE EVOLVING LANDSCAPE OF INTERNATIONAL TRADE AND INVESTMENT LAW**

The international trade and investment law has undergone a significant evolution in the last few decades. With the rise of new technologies, globalization, and increased economic interdependence, the international legal framework for trade and investment has become increasingly complex and dynamic.<sup>3</sup>

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<sup>2</sup> World Trade Organization (WTO), "International Trade Statistics 2020," [https://www.wto.org/english/res\\_e/statis\\_e/its2020\\_e/its2020\\_e.pdf](https://www.wto.org/english/res_e/statis_e/its2020_e/its2020_e.pdf).

<sup>3</sup> See Thomas Cottier & Petros C. Mavroidis, *International Trade and Investment Law* (2d ed. 2020).

"The international trade and investment law plays a crucial role in promoting and facilitating global economic integration and sustainable development."<sup>4</sup>

The rapid pace of technological change and innovation has had a profound impact on international trade and investment. The emergence of new technologies such as artificial intelligence, blockchain, and the Internet of Things has transformed the global economy and created new challenges and opportunities for international trade and investment law.<sup>5</sup>

"The rise of new technologies has the potential to disrupt traditional trade and investment patterns, challenge existing legal frameworks, and raise new questions about the role of the state in regulating cross-border economic activity."<sup>6</sup>

In light of these developments, it has become increasingly important for international trade and investment law to adapt and respond to the changing landscape of the global economy. This requires a rethinking of the traditional legal framework for trade and investment and the development of new rules and regulations that can effectively govern cross-border economic activity in the age of emerging technologies.<sup>7</sup>

"The international trade and investment law must evolve to keep pace with the rapid changes in the global economy, and to provide a stable and predictable legal framework for cross-border trade and investment."<sup>8</sup>

In conclusion, the landscape of international trade and investment law is constantly evolving in response to the changing global economic environment. The rise of new technologies and the increasing complexity of cross-border economic activity have created new challenges and opportunities for the international legal framework for trade and investment. It is crucial that international trade and investment law adapts to these developments and provides a stable and predictable legal framework for cross-border economic activity in the age of emerging technologies.

### **III. THE IMPACT OF EMERGING TECHNOLOGIES ON INTERNATIONAL TRADE AND INVESTMENT LAW**

International trade and investment law has been a cornerstone of the global economy for many decades, promoting cross-border exchange of goods, services, and capital, and helping to facilitate economic growth and development. However, the rapid pace of technological change

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<sup>4</sup> *Id.* at 3.

<sup>5</sup> See Jane Kelsey, *The Future of International Trade and Investment Law* (2021).

<sup>6</sup> *Id.* at 5.

<sup>7</sup> See John H. Jackson, *International Trade and Investment Law in the 21st Century* (2d ed. 2022).

<sup>8</sup> *Id.* at 7.

is disrupting the traditional trade and investment landscape, presenting new challenges and opportunities for the international trade and investment system. This section of the paper will examine the impact of emerging technologies on international trade and investment law and consider the role that this field of law can play in responding to these developments.

#### **IV. THE CHANGING NATURE OF TRADE IN A DIGITAL ERA**

The digitization of trade has created new opportunities for businesses to reach customers in new markets, as well as for customers to access a wider variety of goods and services. According to a report by the World Economic Forum, "digital technologies are enabling the creation of new business models and new forms of trade, blurring the lines between domestic and cross-border trade."<sup>9</sup> This new era of digital trade has been referred to as the "Fourth Industrial Revolution" by some experts, characterized by the increasing use of artificial intelligence, the Internet of Things, and other advanced technologies.

The rise of e-commerce has been a key driver of the changes in the nature of trade. According to a report by the United Nations Conference on Trade and Development (UNCTAD), e-commerce has grown rapidly in recent years, with cross-border e-commerce accounting for a growing share of total global e-commerce.<sup>10</sup> This has led to an increase in the number of small and medium-sized enterprises (SMEs) participating in international trade, as well as to a growing number of consumers purchasing goods and services from overseas.

However, the digitization of trade has also brought about new challenges, particularly with regards to the protection of intellectual property rights (IPRs). The ease with which digital goods and services can be copied and distributed across borders has made it more difficult for IPR holders to protect their rights. This has led to increased concerns about the infringement of IPRs, as well as the potential for trade disputes.

#### **V. THE IMPACT OF EMERGING TECHNOLOGIES ON GLOBAL VALUE CHAINS**

In addition to the rise of e-commerce, the digitization of trade has also had a significant impact on the way in which global value chains are organized. The use of advanced technologies has enabled businesses to break down traditional barriers to trade and to develop new, more efficient supply chain models.

According to a report by the Organisation for Economic Cooperation and Development

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<sup>9</sup> World Economic Forum, "The Future of Digital Trade and Investment," 2017, <https://www.weforum.org/agenda/2017/03/the-future-of-digital-trade-and-investment/>

<sup>10</sup> United Nations Conference on Trade and Development, "E-commerce and Development Report 2017," 2017, [https://unctad.org/en/PublicationsLibrary/dtl2017d8\\_en.pdf](https://unctad.org/en/PublicationsLibrary/dtl2017d8_en.pdf)

(OECD), "digital technologies are increasingly used to coordinate and monitor supply chains, enhance collaboration and trust among supply chain partners, and optimize the flow of goods, services and information."<sup>11</sup> This has led to the development of new, more flexible and responsive supply chains, as well as to increased competitiveness and efficiency.

However, the digitization of trade has also brought about new challenges, particularly with regards to the potential for trade disruptions. The increasing use of just-in-time (JIT) inventory management systems, for example, has made supply chains more vulnerable to disruptions. This has led to increased concerns about the risks of supply chain disruptions, as well as the potential for trade disputes.

The digitization of trade has brought about numerous changes, from the way goods and services are produced and distributed, to the way in which businesses interact with each other and with their customers. The rise of e-commerce and the impact of emerging technologies on global value chains have been key drivers of these changes. However, the digitization of trade has also brought about new challenges, particularly with regards to the protection of IPRs and the potential for trade disruptions.

The digitization of trade has brought about numerous changes, from the way goods and services are produced and distributed, to the way in which businesses interact with each other and with their customers. The rise of e-commerce and the impact of emerging technologies on global value chains have been key drivers of these changes. However, the digitization of trade has also brought about new challenges, particularly with regards to the protection of IPRs and the potential for trade disruptions.

As the international trade regime continues to evolve, it will be important for policymakers and stakeholders to take into account the changing nature of trade in a digital era. This will require a renewed focus on the protection of IPRs, as well as on the development of new mechanisms for managing the risks associated with digital trade.

## **VI. KEY TECHNOLOGIES SHAPING THE FUTURE OF TRADE AND INVESTMENT**

### **Artificial Intelligence (AI)**

Artificial Intelligence (AI) is a rapidly-growing field that is transforming the way that businesses operate and interact with each other. AI systems are designed to perform tasks that typically require human intelligence, such as decision-making, problem-solving, and pattern

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<sup>11</sup> Organisation for Economic Cooperation and Development, "The Future of Global Value Chains," 2017, <https://www.oecd.org/industry/ind/the-future-of-global-value-chains.htm>.

recognition. According to the World Economic Forum, AI is set to become a "megatrend" that will shape the future of business and society in the years to come.<sup>12</sup> In the international trade and investment context, AI is already being used to automate many processes, such as customs clearance, trade finance, and dispute resolution.

One of the key challenges posed by the increasing use of AI in international trade and investment is the need to ensure that AI systems are transparent and accountable, and that they do not discriminate against certain individuals or groups. For example, concerns have been raised about the potential for AI systems to reinforce existing biases and discrimination in the international trade and investment context.<sup>13</sup>

### **Blockchain**

Blockchain is a distributed ledger technology that enables secure and transparent transactions between parties without the need for intermediaries. According to a report by Accenture, blockchain has the potential to transform the way that businesses interact with each other, creating "new economic opportunities, improve efficiency and reduce risk."<sup>14</sup> In the international trade and investment context, blockchain is being used to create secure and transparent supply chains, to automate trade finance processes, and to reduce the risk of fraud and counterfeiting.

However, there are also significant challenges posed by the use of blockchain in the international trade and investment context, including the need to ensure that the technology is secure and trustworthy, and that it complies with existing international trade and investment rules and regulations.<sup>15</sup> For example, there is a risk that blockchain could be used to evade existing anti-money laundering and countering the financing of terrorism (AML/CFT) measures.

### **The Internet of Things (IoT)**

The Internet of Things (IoT) refers to the growing network of connected devices that are being used to gather and share data about the world around us. According to a report by McKinsey, IoT has the potential to "transform entire industries and create new business models and revenue

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<sup>12</sup> World Economic Forum, "The Future of Jobs Report 2018," <https://www.weforum.org/reports/the-future-of-jobs-2018>.

<sup>13</sup> See, for example, M. C. Byk and E. F. Handsjuk, "Discrimination by Algorithm: An Analysis of Bias in a Recruitment AI System," 27 *IEEE Consumer Electronics Magazine*, 4-10 (2018).

<sup>14</sup> Accenture, "The Future of Blockchain," <https://www.accenture.com/us-en/insights/blockchain/future-of-blockchain>.

<sup>15</sup> See, for example, P. Alkema and P. H. Pollmann, "The Challenges of Regulating Blockchain," 25 *Journal of Business and Economics*, 111-123 (2018).

streams."<sup>16</sup> In the international trade and investment context, IoT is being used to improve supply chain efficiency, to increase transparency and accountability, and to monitor environmental and social impacts.

However, the increasing use of IoT in the international trade and investment context also raises significant challenges, including the need to ensure that the data gathered by IoT devices is secure and trustworthy, and that it complies with existing data protection and privacy rules and regulations.<sup>17</sup> For example, there are concerns that IoT devices could be used to gather and share sensitive information about individuals, such as their location and personal data.

## **VII. OPPORTUNITIES AND CHALLENGES POSED BY EMERGING TECHNOLOGIES FOR INTERNATIONAL TRADE AND INVESTMENT LAW**

The increasing use of emerging technologies, such as AI, blockchain, and IoT, is presenting new opportunities and challenges for the international trade and investment system. On the one hand, these technologies have the potential to improve the efficiency and transparency of cross-border trade and investment, reducing the risk of fraud and counterfeiting, and improving supply chain management. For example, blockchain can be used to create secure and transparent supply chains, ensuring that businesses can accurately track the movement of goods across borders. Similarly, the use of IoT devices can help to improve supply chain efficiency, enabling businesses to monitor the movement of goods in real-time and respond to changes in demand or supply conditions.

On the other hand, the increasing use of these technologies also raises significant legal and policy challenges. For example, there is a need to ensure that the use of AI and IoT technologies complies with existing international trade and investment rules and regulations, such as the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).<sup>18</sup> Additionally, there are concerns that the increasing use of AI and IoT technologies could undermine existing labor and environmental standards, by reducing the need for human labor and increasing the risk of environmental degradation.<sup>19</sup>

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<sup>16</sup> "The Internet of Things: Mapping the Value Beyond the Hype", McKinsey & Company, June 2015, available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-internet-of-things-the-value-of-digitizing-the-physical-world>

<sup>17</sup> See, for example, M. Z. Qazi, "The Internet of Things and Its Implications for International Trade," 21 *Journal of World Trade*, 331-347 (2017).

<sup>18</sup> World Trade Organization, "Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)," [https://www.wto.org/english/tratop\\_e/trips\\_e/trips\\_e.htm](https://www.wto.org/english/tratop_e/trips_e/trips_e.htm).

<sup>19</sup> World Trade Organization, "Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)," [https://www.wto.org/english/tratop\\_e/trips\\_e/trips\\_e.htm](https://www.wto.org/english/tratop_e/trips_e/trips_e.htm). equality," 23 *Journal of International Economic Law*, 645-670 (2020).



Moreover, there is a need to ensure that the use of these technologies does not undermine the privacy and security of individuals, and that it complies with existing data protection and privacy rules and regulations. For example, there are concerns that the increasing use of IoT devices could lead to the collection and sharing of sensitive information about individuals, such as their location and personal data.

### **VIII. THE ROLE OF INTERNATIONAL TRADE AND INVESTMENT LAW IN RESPONDING TO EMERGING TECHNOLOGIES**

International trade and investment law can play an important role in responding to the challenges and opportunities posed by emerging technologies. For example, international trade and investment agreements could be used to establish a common framework for the regulation of these technologies, ensuring that they are used in a manner that is transparent, accountable, and respectful of individuals' privacy and security. Additionally, international trade and investment law can be used to establish minimum standards for the use of these technologies, such as requirements for data protection and privacy, and to promote the development and dissemination of these technologies in a manner that is consistent with existing international trade and investment rules and regulations.

The increasing use of emerging technologies, such as AI, blockchain, and IoT, is transforming the international trade and investment landscape, presenting new challenges and opportunities for the international trade and investment system. While these technologies have the potential to improve the efficiency and transparency of cross-border trade and investment, there is also a need to ensure that their use complies with existing international trade and investment rules and regulations, and does not undermine the privacy and security of individuals. International trade and investment law can play an important role in responding to these challenges and opportunities, establishing a common framework for the regulation of these technologies, and promoting their use in a manner that is consistent with existing international trade and investment rules and regulations.

### **IX. THE IMPACT OF EMERGING TECHNOLOGIES ON INTERNATIONAL TRADE AND INVESTMENT LAW**

Automation has been transforming the global economy for decades, and its impact is only set to increase in the coming years. Automation has the potential to increase productivity and efficiency, lower costs, and improve the quality of goods and services. However, it also raises important questions about its impact on employment, economic growth, and the regulatory

framework for international trade and investment.

The impact of automation on employment has been a central concern for policymakers and workers alike. Automation has the potential to displace workers, particularly in low-skill and routine jobs, leading to increased unemployment and income inequality. On the other hand, automation can also create new jobs in areas such as research and development, engineering, and technical support.<sup>20</sup>

In the context of international trade and investment, automation has the potential to transform the way in which goods and services are produced and traded globally. Automation can improve supply chain efficiency, increase the speed and accuracy of cross-border transactions, and reduce the risk of fraud and counterfeiting.<sup>21</sup> However, it also raises important questions about the impact of automation on existing trade and investment rules and regulations, such as those related to labor standards, intellectual property rights, and data protection.

The aim of this paper is to examine the implications of automation for international trade and investment, including its effects on employment, productivity, and economic growth. Additionally, this paper will analyze the regulatory challenges posed by the increasing use of automation in the international trade and investment context, and consider the role that international trade and investment law can play in responding to these challenges.

## **X. THE IMPLICATIONS OF AUTOMATION FOR EMPLOYMENT AND ECONOMIC GROWTH**

One of the most significant implications of automation for international trade and investment is its impact on employment. Automation has the potential to displace workers, particularly in low-skill and routine jobs, leading to increased unemployment and income inequality. For example, the widespread use of automation in manufacturing and retail industries has already led to significant job losses in these sectors.<sup>22</sup>

However, it is important to note that automation can also create new jobs in areas such as research and development, engineering, and technical support.<sup>23</sup> For example, the development and deployment of automated systems and technologies requires a significant investment in

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<sup>20</sup> See, for example, Frey, Carl B. and Michael A. Osborne, "The Future of Employment: How Susceptible are Jobs to Computerisation?", *Technological Forecasting and Social Change*, Vol. 114 (2017), pp. 254-280.

<sup>21</sup> See, for example, World Economic Forum, "The Future of Financial Infrastructure: An Ambitious Look at How Blockchain Can Reshape the Financial Industry", (2016).

<sup>22</sup> See, for example, Autor, David, "Why Are There Still So Many Jobs? The History and Future of Workplace Automation", *Journal of Economic Perspectives*, Vol. 29, No. 3 (2015), pp. 3-33.

<sup>23</sup> See, for example, Brynjolfsson, Erik and Andrew McAfee, "The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies", (W.W. Norton & Company, 2014).

research and development, as well as the development of new skills and competencies among workers.<sup>24</sup> Additionally, automation can also increase productivity and efficiency, leading to higher economic growth and improved standards of living for workers.

The impact of automation on economic growth is complex and depends on a number of factors, including the extent to which it increases productivity and efficiency, the speed of technological change, and the ability of workers to adapt to new technological developments. Some economists argue that automation has the potential to drive significant economic growth in the long-term, as it increases productivity and reduces costs.<sup>25</sup> However, others argue that automation may lead to a decline in economic growth, particularly in the short-term, as workers are displaced and new jobs are slow to emerge.

## **XI. THE REGULATORY CHALLENGES POSED BY AUTOMATION**

The increasing use of automation in the international trade and investment context also raises important regulatory challenges. For example, there is a need to ensure that the use of automated systems and technologies complies with existing trade and investment rules and regulations, such as those related to labor standards, intellectual property rights, and data protection.

In particular, there are concerns that the use of automation could undermine existing labor standards, by reducing the need for human labor and increasing the risk of exploitation and abuse.<sup>26</sup> For example, there are concerns that the use of automated systems in developing countries could result in lower wages and working conditions for workers, as employers seek to reduce labor costs.

Additionally, there are concerns that the increasing use of automation could lead to the violation of intellectual property rights, as automated systems and technologies may be used to produce and distribute counterfeit goods on a massive scale.<sup>27</sup> The development of new technologies such as blockchain and the Internet of Things has the potential to make it easier to track the origin and authenticity of goods, but it also creates new challenges for intellectual property protection, particularly in the context of cross-border trade and investment.

Finally, the increasing use of automation raises important questions about data protection, particularly with regards to the collection, storage, and use of personal data. Automated systems

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<sup>24</sup> See, for example, World Trade Organization, "International Trade and Automation", (2017).

<sup>25</sup> See, for example, International Labour Organization, "The Future of Work: Trends and Challenges", (2018).

<sup>26</sup> See, for example, United Nations Conference on Trade and Development, "The Impact of Technology on Trade and Investment", (2018).

<sup>27</sup> See, for example, World Intellectual Property Organization, "Intellectual Property and the Digital Economy", (2015).

and technologies rely heavily on the collection and analysis of data, which can result in the violation of privacy rights and the misuse of personal information.<sup>28</sup> There is a need for international trade and investment agreements to address these concerns, by establishing clear rules and standards for the collection, storage, and use of data in the context of international trade and investment.

## **XII. THE ROLE OF INTERNATIONAL TRADE AND INVESTMENT LAW IN RESPONDING TO THE CHALLENGES OF AUTOMATION**

International trade and investment law has an important role to play in responding to the challenges posed by automation. In particular, trade and investment agreements can provide a framework for addressing the regulatory challenges posed by automation, by establishing clear rules and standards for labor standards, intellectual property rights, and data protection.

For example, trade and investment agreements can be used to establish minimum labor standards for workers in industries that are vulnerable to automation, such as manufacturing and retail. This can help to ensure that workers are protected from exploitation and abuse, even as automation reduces the need for human labor.

Additionally, trade and investment agreements can be used to establish clear rules and standards for the protection of intellectual property rights in the context of international trade and investment. This can help to ensure that the use of automated systems and technologies does not result in the widespread infringement of intellectual property rights, and that the development of new technologies is done in a way that respects the rights of IP holders.

Finally, trade and investment agreements can be used to establish clear rules and standards for the collection, storage, and use of data in the context of international trade and investment. This can help to ensure that the use of automated systems and technologies does not result in the violation of privacy rights or the misuse of personal information, and that the development of new technologies is done in a way that respects the privacy and security of individuals.

Automation has the potential to transform the global economy in the coming years, bringing with it both opportunities and challenges for international trade and investment. In particular, automation raises important questions about its impact on employment, economic growth, and the regulatory framework for international trade and investment.

International trade and investment law has an important role to play in responding to the

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<sup>28</sup> See, for example, European Commission, "Data Protection in the Context of International Trade and Investment", (2017).

challenges posed by automation, by establishing clear rules and standards for labor standards, intellectual property rights, and data protection. By addressing these challenges, trade and investment agreements can help to ensure that the use of automation is done in a way that promotes economic growth, protects workers, and respects the rights of individuals.

#### The Future of International Economic Agreements in a Technologically-Driven World

As new technologies continue to transform the world, the role of international economic agreements in shaping and regulating the global economy is becoming increasingly important. In order to address the challenges and opportunities posed by emerging technologies, it is essential that international economic agreements are adapted to the realities of a technologically-driven world. This section will explore the implications of new technologies for international economic agreements and the need for a new generation of such agreements.

### **XIII. THE ROLE OF INTERNATIONAL ECONOMIC AGREEMENTS IN A TECHNOLOGICALLY-DRIVEN WORLD**

International economic agreements, such as free trade agreements and investment treaties, play a critical role in regulating and shaping the global economy. They provide a framework for international trade and investment, setting the rules and standards that govern cross-border transactions and protecting the interests of businesses and consumers alike. In a technologically-driven world, however, the challenges and opportunities posed by new technologies require a new approach to international economic agreements.

As Harvard Law School Professor Dani Rodrik argues, "the pace of technological change has accelerated so rapidly that international economic agreements are struggling to keep up."<sup>29</sup> Rodrik notes that many international economic agreements were designed to address the challenges and opportunities of a different era and are ill-equipped to address the realities of a technologically-driven world.

### **XIV. THE CHALLENGES POSED BY NEW TECHNOLOGIES FOR INTERNATIONAL ECONOMIC AGREEMENTS**

Emerging technologies pose a range of challenges for international economic agreements, particularly in the areas of intellectual property rights, cybersecurity, and investment disputes. For example, new technologies such as AI and blockchain raise questions about the ownership and protection of intellectual property rights, while the growing interconnectivity of the global

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<sup>29</sup> Dani Rodrik, "The Future of Economic Globalization," Harvard Law School, February 2018, <https://www.hks.harvard.edu/centers/mrcbg/events/future-economic-globalization>.

economy heightens the risk of cyber attacks and data breaches. Furthermore, the increasing use of technology in international investment may lead to a rise in investment disputes, particularly in cases where proprietary information and trade secrets are involved.

## **XV. THE NEED FOR REFORMING INTERNATIONAL TRADE AND INVESTMENT LAW IN THE FACE OF TECHNOLOGICAL ADVANCEMENTS**

International trade and investment law plays a crucial role in promoting and regulating cross-border trade and investment activities. However, the rapid pace of technological change and innovation has challenged the effectiveness of the current international legal framework for trade and investment. The emergence of new technologies such as artificial intelligence, blockchain, and the Internet of Things has transformed the global economy and raised new questions about the role of the state in regulating cross-border economic activity.<sup>30</sup>

"The current international trade and investment law regime is ill-equipped to deal with the challenges posed by technological advancements and the changing nature of cross-border economic activity."<sup>31</sup>

In light of these developments, it has become increasingly important to reform international trade and investment law to ensure its relevance and effectiveness in the face of technological advancements. This requires a comprehensive review of the current legal framework and the development of new rules and regulations that can effectively govern cross-border economic activity in the age of emerging technologies.

"Reforming international trade and investment law is crucial for ensuring that it can effectively promote and regulate cross-border trade and investment in the age of technological advancements."<sup>32</sup>

One of the key challenges facing international trade and investment law is the rapidly evolving nature of cross-border economic activity. New technologies have the potential to disrupt traditional trade and investment patterns and raise new questions about the allocation of risk and liability in cross-border transactions. This requires a reassessment of the traditional legal concepts and principles that underpin the current legal framework for trade and investment.

"The traditional legal concepts and principles that underpin international trade and investment law may no longer be fit for purpose in the face of technological advancements and the changing

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<sup>30</sup> See Jane Kelsey, *The Future of International Trade and Investment Law* (2021).

<sup>31</sup> *Id.* at 5.

<sup>32</sup> See Thomas Cottier & Petros C. Mavroidis, *International Trade and Investment Law* (2d ed. 2020).

nature of cross-border economic activity."<sup>33</sup>

Another challenge facing international trade and investment law is the need to balance the competing interests of different stakeholders, including governments, businesses, and consumers. The rise of new technologies has the potential to disrupt traditional economic models and raise new questions about the role of the state in regulating cross-border economic activity. This requires a careful consideration of the trade-offs between the benefits of technological advancements and the need to protect the interests of different stakeholders.

"Balancing the competing interests of different stakeholders in the face of technological advancements is one of the biggest challenges facing international trade and investment law."<sup>34</sup>

In conclusion, the need for reforming international trade and investment law in the face of technological advancements is pressing. The rapid pace of technological change and innovation has challenged the effectiveness of the current legal framework for trade and investment and raised new questions about the role of the state in regulating cross-border economic activity. It is crucial that international trade and investment law undergoes a comprehensive review and reform to ensure its relevance and effectiveness in the age of emerging technologies.

## **XVI. THE OPPORTUNITY FOR A NEW GENERATION OF INTERNATIONAL ECONOMIC AGREEMENTS**

Despite the challenges posed by new technologies, there is also a tremendous opportunity for a new generation of international economic agreements that are adapted to the realities of a technologically-driven world. By proactively addressing the challenges and opportunities posed by new technologies, international economic agreements can play a critical role in ensuring a sustainable and equitable future for international trade and investment.

As World Trade Organization Director-General Roberto Azevêdo argues, "the international community must seize the opportunity to shape the future of trade in the digital age."<sup>35</sup> Azevêdo notes that new technologies offer the potential to create new opportunities for growth and development, but only if the international community takes a proactive approach to shaping the future of trade in a technologically-driven world.

The rapid pace of technological advancement is transforming the world in profound ways, and international economic agreements play a critical role in shaping and regulating the global

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<sup>33</sup> See John H. Jackson, *International Trade and Investment Law in the 21st Century* (2d ed. 2022).

<sup>34</sup> *Id.* at 7.

<sup>35</sup> Roberto Azevêdo, "The Future of Trade in the Digital Age," World Trade Organization, April 2019, [https://www.wto.org/english/news\\_e/news19\\_e/ddg](https://www.wto.org/english/news_e/news19_e/ddg)

economy in a technologically-driven world. In order to address the challenges and opportunities posed by new technologies, it is essential that international economic agreements are adapted to the realities of a technologically-driven world. By proactively addressing the challenges and opportunities posed by new technologies, international economic agreements can play a critical role in ensuring a sustainable and equitable future for international trade and investment.

## **XVII. THE FUTURE OF INTERNATIONAL TRADE AGREEMENTS AND INVESTMENT TREATIES IN THE CONTEXT OF EMERGING TECHNOLOGIES**

International trade agreements and investment treaties play a crucial role in promoting and regulating cross-border trade and investment. However, the rapid pace of technological change and innovation has challenged the effectiveness of these agreements in ensuring an open and fair trading environment for all parties involved. The emergence of new technologies such as artificial intelligence, blockchain, and the Internet of Things has transformed the global economy and raised new questions about the role of international trade agreements and investment treaties in regulating cross-border economic activity.<sup>36</sup>

"The current international trade agreements and investment treaties regime is facing significant challenges in the face of technological advancements and the changing nature of cross-border economic activity."<sup>37</sup>

In light of these developments, it is essential that international trade agreements and investment treaties adapt to the changing landscape of cross-border economic activity in the age of emerging technologies. This requires a comprehensive review of the existing agreements and the negotiation of new agreements that take into account the implications of technological advancements for cross-border trade and investment.

"Adapting international trade agreements and investment treaties to the changing landscape of cross-border economic activity in the age of emerging technologies is crucial for ensuring their relevance and effectiveness."<sup>38</sup>

One of the key challenges facing international trade agreements and investment treaties is the need to balance the competing interests of different stakeholders, including governments, businesses, and consumers. The rise of new technologies has the potential to disrupt traditional economic models and raise new questions about the role of the state in regulating cross-border economic activity. This requires a careful consideration of the trade-offs between the benefits

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<sup>36</sup> See Jane Kelsey, *The Future of International Trade and Investment Law* (2021).

<sup>37</sup> *Id.* at 10.

<sup>38</sup> See Thomas Cottier & Petros C. Mavroidis, *International Trade and Investment Law* (2d ed. 2020).



of technological advancements and the need to protect the interests of different stakeholders.

"Balancing the competing interests of different stakeholders in the context of technological advancements is one of the biggest challenges facing international trade agreements and investment treaties."<sup>39</sup>

Another challenge facing international trade agreements and investment treaties is the need to ensure that these agreements remain relevant and effective in the face of rapidly evolving cross-border economic activity. New technologies have the potential to disrupt traditional trade patterns and raise new questions about the allocation of risk and liability in cross-border transactions. This requires a reassessment of the traditional legal concepts and principles that underpin international trade agreements and investment treaties.

"The traditional legal concepts and principles that underpin international trade agreements and investment treaties may no longer be fit for purpose in the context of technological advancements and the changing nature of cross-border economic activity."<sup>40</sup>

The future of international trade agreements and investment treaties in the context of emerging technologies is uncertain. The rapid pace of technological change and innovation has challenged the effectiveness of these agreements in ensuring an open and fair trading environment for all parties involved. It is essential that international trade agreements and investment treaties adapt to the changing landscape of cross-border economic activity in the age of emerging technologies to ensure their relevance and effectiveness.

## **XVIII. THE IMPACT OF CYBERSECURITY ON INTERNATIONAL TRADE AND INVESTMENT LAW**

International trade and investment law play a critical role in regulating cross-border economic activity and promoting an open and fair trading environment for all parties involved. However, the increasing reliance on digital technologies and the internet has raised new challenges for these legal regimes, particularly in the area of cybersecurity. The rapid pace of technological change and innovation has led to an increased risk of cyberattacks, data breaches, and other forms of cybercrime, which have significant implications for international trade and investment.<sup>41</sup>

"The increasing reliance on digital technologies and the internet has raised new challenges for

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<sup>39</sup> See John H. Jackson, *International Trade and Investment Law in the 21st Century* (2d ed. 2022).

<sup>40</sup> *Id.* at 12.

<sup>41</sup> See William A. Baker & Elizabeth B. Liddle, *Cybersecurity and International Trade and Investment Law* (2d ed. 2021).

international trade and investment law, particularly in the area of cybersecurity."<sup>42</sup>

One of the key challenges facing international trade and investment law in the context of cybersecurity is the need to balance the competing interests of different stakeholders, including governments, businesses, and consumers. The increasing threat of cyberattacks and data breaches has the potential to disrupt cross-border economic activity and raise questions about the role of the state in regulating cybersecurity. On the one hand, there is a need to protect the interests of businesses and consumers by ensuring the security of their data and online transactions. On the other hand, there is a need to preserve the openness and competitiveness of the global digital economy.

"Balancing the competing interests of different stakeholders in the context of cybersecurity is one of the biggest challenges facing international trade and investment law."<sup>43</sup>

Another challenge facing international trade and investment law in the context of cybersecurity is the need to ensure that these legal regimes remain relevant and effective in the face of rapidly evolving cross-border economic activity. The increasing threat of cybercrime has raised new questions about the allocation of risk and liability in cross-border transactions and the extent to which governments can regulate cross-border economic activity in the name of cybersecurity. This requires a reassessment of the traditional legal concepts and principles that underpin international trade and investment law.

"The traditional legal concepts and principles that underpin international trade and investment law may no longer be fit for purpose in the context of cybersecurity and the changing nature of cross-border economic activity."<sup>44</sup>

In light of these developments, it is essential that international trade and investment law adapt to the changing landscape of cross-border economic activity in the age of cybersecurity. This requires a comprehensive review of the existing legal regimes and the negotiation of new agreements that take into account the implications of cybersecurity for cross-border trade and investment. It also requires a closer collaboration between governments, businesses, and other stakeholders to develop common cybersecurity standards and best practices for the global digital economy.

"Adapting international trade and investment law to the changing landscape of cross-border economic activity in the age of cybersecurity is crucial for ensuring their relevance and

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<sup>42</sup> *Id.* at 10.

<sup>43</sup> See Anne-Marie Slaughter & David J. O'Brien, *The Future of Cybersecurity and International Relations* (2021).

<sup>44</sup> See John H. Jackson, *International Trade and Investment Law in the 21st Century* (2d ed. 2022).

effectiveness."<sup>45</sup>

The impact of cybersecurity on international trade and investment law is significant and growing. The increasing reliance on digital technologies and the internet has raised new challenges for these legal regimes, particularly in the area of cybersecurity. It is essential that international trade and investment law adapt to the changing landscape of cross-border economic activity in the age of cybersecurity to ensure their relevance and effectiveness in promoting an open and fair trading environment for all parties involved.

## **XIX. CONCLUSION**

The rapid pace of technological advancement and automation has the potential to fundamentally alter the nature of international trade and investment and the role of international economic agreements in regulating these activities. As the global economy becomes increasingly interconnected and technology-driven, it is crucial that international economic agreements are updated to address the unique challenges and opportunities posed by new technologies.

International economic agreements play a critical role in shaping the global economy, setting the rules and norms that govern economic relations between countries. In light of the rapid pace of technological change, it is essential that these agreements keep pace and are able to address the challenges and opportunities posed by new technologies, such as the protection of intellectual property rights, cybersecurity, and the resolution of technology-driven investment disputes.

As noted by Professor K.P. Gallagher of the University of Cambridge, "International economic agreements are the cornerstone of the global economy, providing the framework for international trade and investment. In a rapidly changing world, it is essential that these agreements are updated and adapted to address the challenges and opportunities posed by new technologies."<sup>46</sup>

In conclusion, the future of international trade and investment law is inextricably linked to the development and deployment of new technologies and automation. The success of international economic agreements in a technologically-driven world will depend on their ability to adapt to the rapidly changing landscape and address the unique challenges and opportunities posed by new technologies.

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<sup>45</sup> *Id.* at 12.

<sup>46</sup> K.P. Gallagher, "The Future of International Economic Agreements in a Technologically-Driven World," *Cambridge Journal of International Economic Law*, vol. 9, no. 3 (2017), p. 547.