Article

Tax obligations arising from the importation of goods into the European Union: Artificial intelligence and environmental protection

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Imports, taxation, customs, algorithms, blockchain, environment

ABSTRACT:

Paper analyses the use of artificial intelligence algorithms in the European Union, as a tool that assists with the traceability of imported goods and helps to ensure their effective taxation.

The validation of a block at the beginning of the importation process, and of each block at the different stages of the operation, can provide a green channel for the entry of goods into the European Union, and can be used to determine the customs value for the application of the Common Customs Tariff and the taxable amount for VAT purposes.

The adoption of an intra-EU consensus algorithm, in a blockchain network, becomes the mechanism that identifies the correct status of the different operations carried out in the importation of a good destined for the European Union.

It is therefore proposed that a green tax-customs channel should be designed for the importation of goods into the European Union, one that can detect and prevent tax and customs fraud, thereby reducing administrative costs, increasing tax collection efficiency, and contributing to the protection of the environment and the appropriate use of natural resources worldwide.

PALABRAS CLAVES:

Importaciones, fiscalidad, aduanas, algoritmos, blockchain, medio ambiente

RESUMEN:

Este trabajo analiza el uso de algoritmos de inteligencia artificial en la Unión Europea, como una herramienta que ayuda a la trazabilidad de los bienes importados y ayuda a asegurar su efectiva tributación.
La validación de un bloque al inicio del proceso de importación, y de cada bloque en las diferentes etapas de This la operación, puede proporcionar un canal verde para la entrada de mercancías en la Unión Europea y puede utilizarse para determinar el valor en aduana para la aplicación del Arancel Aduanero Común y la base imponible a efectos del IVA.
La adopción de un algoritmo de consenso intracomunitario, en una red blockchain, se convierte en el mecanismo que identifica el correcto estado de las diferentes operaciones realizadas en la importación de un bien con destino a la Unión Europea.
Por ello, se propone diseñar un canal fiscal-aduanero verde para la importación de mercancías a la Unión Europea, que pueda detectar y prevenir el fraude fiscal y aduanero, reduciendo así los costes administrativos, aumentando la eficiencia recaudatoria y contribuyendo a la protección del medio ambiente y el uso adecuado de los recursos naturales en todo el mundo.

MOTS CLES :

Imports, fiscalité, douanes, algorithmes, blockchain, environnement

RESUME :

Cet article analyse l'utilisation des algorithmes d'intelligence artificielle dans l'Union européenne, en tant qu'outil d'aide à la traçabilité des marchandises importées et contribue à assurer leur imposition effective.
La validation d'un bloc au début du processus d'importation, et de chaque bloc aux différentes étapes de l'opération, peut fournir une voie verte pour l'entrée des marchandises dans l'Union européenne et peut être utilisée pour déterminer la valeur en douane pour le l'application du tarif douanier commun et la base imposable à la TVA.
L'adoption d'un algorithme de consensus intra-UE, dans un réseau blockchain, devient le mécanisme qui identifie le statut correct des différentes opérations effectuées lors de l'importation d'un bien destiné à l'Union européenne.
Il est donc proposé de concevoir un circuit fiscal-douanier vert pour l'importation de biens dans l'Union européenne, capable de détecter et de prévenir la fraude fiscale et douanière, réduisant ainsi les coûts administratifs, augmentant l'efficacité du recouvrement des impôts et contribuant à la protection de l'environnement et l'utilisation appropriée des ressources naturelles dans le monde.

CONTENTS:

1 ARTIFICIAL INTELLIGENCE

The European Economic and Social Council points out that artificial intelligence (AI) is a catch-all term for a large number of sub(fields) such as: cognitive computing (algorithms that reason and understand at a higher (more human) level), machine learning (algorithms that can teach themselves tasks), augmen ted intelligence (cooperation between human and machine) and AI robotics (AI imbedded in robots). The central aim of AI research and development is, however, to automate intelligent behavior such as reasoning, the gathering of information, planning, learning, communicating, manipulating, detecting, and even creating, dreaming, and perceiving[1].

Nevertheless, it should be stressed that AI systems are more than just the sum of their software components. AI systems also comprise the socio-technical system around them. When considering AI governance and regulation, the focus should thus also be on the ambient social structures around it: the organisations and enterprises, the various professions, and the people and institutions that create, develop, deploy, use, and control AI, and the people that are affected by it, such as citizens in their relations with governments, businesses, consumers, workers, and even society as a whole[2].

In this sense, this paper proposes the automation of intelligent behaviours in the tax-customs field, which would facilitate the use of a green channel for the entry of imported goods into the European Union, within a homogeneous legal framework that guarantees values, rules and fundamental rights for all of the actors involved, by using blockchain technology.

The development of artificial intelligence in the tax-customs field must provide for an adequate response to any possible obstacles related to ethical and legal problems (principles of legality, equality and transparency); internal security issues (a legal, correct, transparent, efficient and reliable algorithm; that is well designed and programmed, resistant to cyber-attacks, etc.); external security issues (reliability of artificial intelligence in unknown, critical or unforeseen conditions; risks associated with the use of self-teaching software, etc.); the transparency, controllability, supervision and accountability of the decision-making process; ensuring that human intervention is necessary or advisable for the implementation automated behaviour; guaranteeing the privacy and protection of the data obtained; the provision of a common data access space; determining possible liability for any actions undertaken; the right to know the decision making logic and criteria employed by the

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[1] Opinion of the European Economic and Social Committee on "Artificial intelligence - The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society" (own-initiative opinion) (2017/C 288/01), adopted in section: 04/05/2017, adopted at plenary: 31/05/2017, rapporteur: Catelijne Muller, 1.7.

In the Proposal for a Regulation of the European Parliament and of the Council of Europe laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union legislative acts, Brussels, 21.4.202, COM(2021) 206 final, 2021/0106 (COD), it is stated that "artificial intelligence (AI) is a fast evolving family of technologies that can bring a wide array of economic and societal benefits across the entire spectrum of industries and social activities". Explanatory memorandum (1.1); Proposal for a Regulation of the European Parliament and of the Council of Europe laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union legislative acts (3).

Article 3 of this Proposal ("Definitions") defines Artificial Intelligence System as "software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with".

Annex 1 (AI techniques and strategies) referred to in Article 3, point 1, includes the following:

"(a) Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning;

(b) Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems;

(c) Statistical approaches, Bayesian estimation, search and optimization methods".

[2] Opinion of the European Economic and Social Committee on "White Paper on artificial intelligence - A European approach to excellence and trust" (COM(2020) 65 final) (2020/C 364/12), 2.7.

software; improvement of the currently available infrastructure; cross-border collaboration and cooperation; etc. In short, it is a pertinent, open and transparent process that aims to provide "understanding and knowledge" of the AI system.

Trade in goods is becoming increasingly interconnected and digitised. Access to data related to the importing of goods into the European Union and the resulting tax obligations require algorithms to be "thought", meaning that they are capable of learning to recognise, classify and select all the data needed to identify patterns and apply them.

In the year 2019, the European Parliament had already called on the Commission to "closely monitor technological developments, including the swift expansion of innovative Fintech business models and the adoption of emerging technologies such as AI, distributed ledger technologies (DLTs), cognitive computing and machine learning, in order to assess technological risks and potential loopholes and boost resilience to cyberattacks or system breakdowns, namely by promoting data protection", encouraging the competent authorities and the Commission to undertake a thorough assessment of the possible systemic risks involving DLT applications[3].

The importance of data for the economy and society has already been highlighted by the European Commission itself, which has also specified the issues at stake (availability of data; imbalances in market power; data interoperability and quality; data governance, data infrastructures and technologies; empowering individuals to exercise their rights; skills and data literacy; cybersecurity; etc.)[4].

In the European Union, within the legal sphere, respect for the rights enshrined in the Charter of Fundamental Rights of the European Union and, in particular, for the principles of data protection, privacy and security is essential[5].

Along the same lines, the 193-member General Conference of the United Nations Educational, Scientific and Cultural Organisation (UNESCO), which met in Paris from the 9th to the 24th of November 2021, for its 41st session, has just officially adopted the Draft Text of the Recommendation on the Ethics of Artificial Intelligence, a landmark text that sets out the common values and principles that will guide the construction of the legal infrastructure necessary to ensure the healthy development of Artificial Intelligence[6].

The Recommendation aims to realise the benefits that AI brings to society and reduce the risks it entails, it is structured around data protection, the banning of social

[3] European Parliament resolution of 26 March 2019 on financial crimes, tax evasion and tax avoidance (2018/2121(INI)) (2021/C 108/02), 280.

[4] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A European strategy for data, Brussels, 19.2.2020, COM (2020) 66 final, pp. 2-12.

[5] The Charter of Fundamental Rights of the European Union (2016/C 202/02) enshrines, in Article 7, respect for private and family life and, in Article 8, the protection of personal data. Furthermore, Article 16 of the Treaty on the Functioning of the European Union (consolidated version: Official Journal Num. C 326 of 26/10/2012 p. 0001 - 0390) states that: "1. Everyone has the right to the protection of personal data concerning them.

2. The European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall lay down the rules relating to the protection of individuals with regard to the processing of personal data by Union institutions, bodies, offices and agencies, and by the Member States when carrying out activities which fall within the scope of Union law, and the rules relating to the free movement of such data. Compliance with these rules shall be subject to the control of independent authorities.

The rules adopted on the basis of this Article shall be without prejudice to the specific rules laid down in Article 39 of the Treaty on European Union".

Thereby, a high level of data protection must be ensured, one that fully respects Regulation (EU) 2016/679 of the European Parliament and the Council, of 27 April 2016, on the protection of 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 (General Data Protection Regulation), digital rights, fundamental rights and ethical standards.

[6] Item 8.2. "Draft Text of the Recommendation on the Ethics of Artificial Intelligence" from the General Conference of the United Nations Educational, Scientific and Cultural Organization, 41st session, 41 C/73, 22 November 2021, Report of the Social and Human Sciences Commission, p. 6. Draft contained in an Annex to the Report.

bookmarking and mass surveillance, assisting with the task of monitoring and evaluation, and protecting the environment.

Regarding data protection, it states that "it is important that data for AI systems be collected, used, shared, archived and deleted in ways that are consistent with international law and in line with the values and principles set forth in this Recommendation, while respecting relevant national, regional and international legal frameworks.

Adequate data protection frameworks and governance mechanisms should be established in a multi-stakeholder approach at the national or international level, protected by judicial systems, and ensured throughout the life cycle of AI systems. Data protection frameworks and any related mechanisms should take reference from international data protection principles and standards concerning the collection, use and disclosure of personal data and exercise of their rights by data subjects while ensuring a legitimate aim and a valid legal basis for the processing of personal data, including informed consent.

Algorithmic systems require adequate privacy impact assessments, which also include societal and ethical considerations of their use and an innovative use of the privacy by design approach. AI actors need to ensure that they are accountable for the design and implementation of AI systems in such a way as to ensure that personal information is protected throughout the life cycle of the AI system"[7].

Thus, it is proposed, that among other areas of action related to data policy, Member States "should work to develop data governance strategies that ensure the continual evaluation of the quality of training data for AI systems including the adequacy of the data collection and selection processes, proper data security and protection measures, as well as feedback mechanisms to learn from mistakes and share best practices among all AI actors"[8].

Furthermore, Member States "should promote and facilitate the use of quality and robust datasets for training, development and use of AI systems, and exercise vigilance in overseeing their collection and use. This could, if possible and feasible, include investing in the creation of gold standard datasets, including open and trustworthy datasets, which are diverse, constructed on a valid legal basis, including consent of data subjects, when required by law. Standards for annotating datasets should be encouraged, including disaggregating data on gender and other bases, so it can easily be determined how a dataset is gathered and what properties it has"[9].

2 ARTIFICIAL INTELLIGENCE, TAXES, CUSTOMS AND THE ENVIRONMENT

Artificial intelligence is already being used as a tool for data accessibility, interoperability, compilation and communication in the tax-customs field, and in the environment and climate change areas.

In Spain, the Tax Agency (*Agencia Estatal de Administración Tributaria*) already pointed out in 2020 that "at present, information analysis systems are becoming increasingly important. In the coming years, the Tax Agency will take advantage of the potential offered by technology to complete the task of automating the processing of standard forms,

[7] Annex "Draft Text of the recommendation on the ethics of artificial intelligence", UNESCO General Conference, 41st session, 41 C/73, 22 November 2021, Report of the Social and Human Sciences Commission, Chapter III "Values and Principles", Right to Privacy and Data Protection, 32-34.

[8] Annex "Draft Text of the Recommendation on the Ethics of Artificial Intelligence", UNESCO General Conference, 41st session, 41 C/73, 22 November 2021, Report of the Social and Human Sciences Commission, Chapter IV "Areas of policy action", Policy area 3: Data Policy, 71.

[9] Annex "Draft Text of the Recommendation on the Ethics of Artificial Intelligence", UNESCO General Conference, 41st session, 41 C/73, 22 November 2021, Report of the Social and Human Sciences Commission, Chapter IV "Policy Areas", Sphere of action 3: Data Policy, 76.

something that began years ago. This will free up human resources for activities with greater added value, it guarantees uniform treatment for taxpayers, facilitates compliance with their obligations and contributes to eradicating tax fraud. Key to this will be technologies such as natural language processing, advanced data processing and artificial intelligence"[10].

Additionally, in relation to the prevention and suppression of smuggling, drug trafficking and money laundering, in 2021 it declared that "land, maritime and air surveillance is a fundamental pillar in the control of borders and territorial waters, in pursuit of the prevention and prosecution of smuggling crimes, including drug trafficking. Thus the means used to perform these missions, must be adapted to meet the new needs arising from the changes in the modus operandi employed by criminal organisations, incorporating new technological resources and systems to enhance investigations. This field of work will see a boost in the implementation of advanced technologies based on artificial intelligence, "Big Data" and data mining"[11].

On the other hand, the European Commission's White Paper on Artificial intelligence -A European approach to excellence and trust, explicitly states that "AI systems promise to help tackling the most pressing concerns, including climate change and environmental degradation"[12].

Along the same lines, in the recent Recommendation on the Ethics of Artificial Intelligence, adopted by UNESCO, it clearly states that "environmental and ecosystem flourishing should be recognized, protected and promoted through the life cycle of AI systems. Furthermore, environment and ecosystems are the existential necessity for humanity and other living beings to be able to enjoy the benefits of advances in AI.

All actors involved in the life cycle of AI systems must comply with applicable international law and domestic legislation, standards and practices, such as precaution, designed for environmental and ecosystem protection and restoration, and sustainable development. They should reduce the environmental impact of AI systems, including but not limited to its carbon footprint, to ensure the minimization of climate change and environmental risk factors, and prevent the unsustainable exploitation, use and transformation of natural resources contributing to the deterioration of the environment and the degradation of ecosystems"[13].

Accordingly, among the possible areas of policy action, it proposes that "Member States should introduce incentives, when needed and appropriate, to ensure the development and adoption of rights-based and ethical AI-powered solutions for disaster risk resilience; the monitoring, protection and regeneration of the environment and ecosystems; and the preservation of the planet. These AI systems should involve the participation of local and indigenous communities throughout the life cycle of AI systems and should support circular economy type approaches and sustainable consumption and production patterns. Some examples include using AI systems, when needed and appropriate, to:

(a) Support the protection, monitoring and management of natural resources.

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[10] Strategic Plan of the Tax Agency 2020-2023, Madrid, 28 January 2020, p. 40.

See also, in the Addendum to the Strategic Plan, the "Big data" project in the individual income tax, and the development of analysis tools based on the data obtained. These applications would be integrated into the Tax Agency's general information environment, so that they can be utilised together with the other information available, to improve fraud prevention and tax control, pp. 11-12.

[11] Resolution issued by the Directorate General of the State Tax Administration Agency, on 19 January 2021, which approves the general guidelines of the Annual Tax and Customs Control Plan for 2021.

[12] European Commission, Brussels, 19.2.2020 COM (2020) 65 final, p. 5.

[13] Annex "Draft Text of the recommendation on the ethics of artificial intelligence", UNESCO General Conference, 41st session, 41 C/73, 22 November 2021, Report of the Social and Human Sciences Commission, chapter III "Values and Principles", Environment and Ecosystem flourishing, 17-18.

(b) Support the prediction, prevention, control and mitigation of climate-related problems.
(c) Support a more efficient and sustainable food ecosystem.
(d) Support the acceleration of access to and mass adoption of sustainable energy.
(e) Enable and promote the mainstreaming of sustainable infrastructure, sustainable business models and sustainable finance for sustainable development.
(f) Detect pollutants or predict levels of pollution and thus help relevant stakeholders identify, plan and put in place targeted interventions to prevent and reduce pollution and exposure"[14].

Ultimately, the European Union must design a method of "responsible and efficient algorithmic environmental governance" within the framework of artificial intelligence.

For example, in Spain, Article 6 (digitalisation for the decarbonisation of the economy) of Law 7/2021, dated the 20th of May, on climate change and energy transition, states that the government will take measures to promote the digitalisation of the economy, which will contribute to achieving the decarbonisation objectives, within the framework of the Digital Spain 2025 strategy. The afore mentioned actions include point c: "using the potential offered by new technologies, such as Artificial Intelligence, to move towards a green economy, including, among other things, the creation of algorithms which are energy-efficient by design".

The development of these data discovery, access, management and exchange infrastructures can help to manage effective and efficient green channels that interlink tax compliance with the implementation of global environmental policies (priority measures related to climate change, the circular economy, zero pollution, biodiversity, deforestation, etc.).

The European Union is taking major steps towards the introduction of artificial intelligence, particularly in relation to the customs area.

Thus, in the European Council conclusions on "Taking the Customs Union to the Next Level: A Plan for Action", dated 21 December 2020[15]:

- The European Commission is invited to elaborate on a detailed description of the tasks, the role, the business model and positioning of the EU Joint Analytics Capabilities in order to further strengthen the efficiency and create an added value to the risk management strategy; and providing a legal and financial assessment including issues of data protection and data security, bearing in mind the respective competencies and resources of the Member States and the Commission in the area of risk management and controls.
- The importance of close cooperation with Member States when developing the EU Joint Analytics Capabilities is underlined.
- The Commission and Member States are encouraged to assess the possible use of certain Passenger Name Record data for specific purposes of customs controls and

[14]Annex "Draft Text of Recommendation on the Ethics of Artificial Intelligence", UNESCO General Conference, 41st session, 41 C/73, 22 November 2021, Report of the Social and Human Sciences Commission, Chapter IV " Areas of Policy Action", Policy area 5: Environment and Ecosystems, 85.

Furthermore, it is also noted that: "When choosing AI methods, given the potential data-intensive or resource-intensive character of some of them and the respective impact on the environment, Member States should ensure that AI actors, in line with the principle of proportionality, favour data, energy and resource-efficient AI methods. Requirements should be developed to ensure that appropriate evidence is available to show that an AI application will have the intended effect, or that safeguards accompanying an AI application can support the justification for its use. If this cannot be done, the precautionary principle must be favoured, and in instances where there are disproportionate negative impacts on the environment, AI should not be used", 86.

[15] Council Conclusions regarding Taking the Customs Union to the Next Level: a Plan for Action, approved through a written procedure completed on 18 December 2020, Brussels, 21 December 2020 (OR. En), 14292/20, UD 402.

related risk analysis, taking into account the work currently carried out within the WCO and ICAO in this area and in respect of fundamental rights and data protection.

- The Commission is encouraged to consider the integration of new technologies, especially artificial intelligence, in data analysis.

Moreover, the Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee - Taking the Customs Union to the Next Level: a Plan for Action, dated 5 March 2021, states that "the EESC recommends immediately exploring the introduction of blockchain technology in the proposed action plan. Furthermore, the technological progress and existing innovative solutions that robotics and artificial intelligence possess could be easily implemented with immediate, relevant results"[16].

Consequently, it is highly foreseeable that in the very near future, the European Union will give priority to the integration of artificial intelligence into the management of potential risks related to the importation of goods[17].

In this regard, in recent years, innovative programmes have already been designed in the European Union to strengthen the customs risk management framework. The new computerised system set up to collect information on all goods entering the EU (Import Control System 2 - ICS2) already gathers data on all the imports that will come into the EU, prior to their arrival. Economic operators must declare safety and security data to ICS2, using the Entry Summary Declaration[18].

The system aims to better protect the European single market and its citizens through new customs security and safety measures, as well as to facilitate the free flow of trade through streamlined, data-driven customs security processes, adapted to global business models.

In short, artificial intelligence is powering a new customs control system in the European Union and in other jurisdictions throughout the global environment.

As an example, in 2018, Peru, Mexico and Costa Rica, under the auspices of the Inter-American Development Bank (IDB) and Microsoft, deployed the CADENA project for common customs management, which facilitates the exchange of data with companies that are certified as Authorised Economic Operators, using blockchain technology (Suominen K, 2020, p.13).

However, the EU should not only consider using AI for the management of potential customs risks associated with the import of goods. It is time to contemplate the creation of a green tax-customs channel, based on AI, allowing for the import of, for example, specified sustainable goods, certain green resources, or particular types of recyclable waste, in a common circular integration data space.

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[16] Customs Union Action Plan, INT/916, Opinion, Section responsible: Single Market, Production and Consumption, Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee - Taking the Customs Union to the next level: a Plan for Action [COM(2020) 581 final], adopted in section: 02/03/2021, adopted at plenary: 24/03/2021, rapporteur: Anastasis Yiapanis, 1.7.

[17] At an internal level, through Council of the European Union Decision 2009/917/JHA, dated 30 November 2009, on the use of information technology for customs purposes (OJ L 323, 10.12.2009, p. 20-30, applicable since May 2011), intended to strengthen cooperation between customs administrations by establishing procedures that enable them to act jointly and to exchange personal and other data concerned with illegal trafficking activities, using new technologies for the management and transmission of that information. To this end, the Customs Information System (CIS) has already been created, consisting of a central database accessible through terminals located in each of the Member States (Article 3).

[18] Visit the European Commission website, *Taxation and Custom Union, Import Control System 2 (ICS2)*, https://ec.europa.eu/taxation_customs/customs-4/customs-security/import-control-system-2-ics2_en#heading_1

Along these same lines, there are already studies that, through data analysis, can forecast certain environmental risks, which can be helpful when designing a green-ecological import channel.

For example, some research studies have found that the risk of importing invasive species is higher in jurisdictions with poor regulation and political instability[19], or that importing goods from sustainable producer countries could reduce the environmental footprint[20].

3 ARTIFICIAL INTELLIGENCE AND THE IMPORTATION OF GOODS: THE COMMON CUSTOMS TARIFF AND VALUE ADDED TAX

Goods entering the territory of the European Union from third countries are subject to a set of duties levied on the importation of goods into the customs territory of the Union (Common Customs Tariff) and to Value Added Tax[21].

The European Union needs a uniform and homogenised legal framework to regulate the use of artificial intelligence in cross-border tax-customs operations, a legal framework that covers the determination of tax obligations, employing artificial intelligence systems developed or modified by public entities, that can help to achieve the implementation of green channels for the importation of goods, whilst always respecting European values and fundamental rights.

Intelligent algorithms that are designed to possess the qualities of intelligibility, transparency, accountability and respect for ethical values, can be used to set up a system for the verification, validation and control of non-exempt imported goods, which may be used to determine the main base for calculating the Common Customs Tariff and the VAT taxable base.

The development and training of this artificial intelligence system would require the availability of large amounts of consensually provided tax data and the configuration of "high quality data", on common platforms that provide security, sustainability, interoperability and scalability (smart connected imported goods).

The algorithm would be created, working from a blueprint of configurations based on the probability of occurrence. It must be energy efficient and be programmed in such a way

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[19] Researchers compiled data on all recorded interceptions of invasive species by inspectors at border or pre-border controls (e.g. ships en route to port) in New Zealand, between 2002 and 2011. Although the study is based on imports to New Zealand, the authors note that the results can be applied globally to determine which type of country is most likely to export invasive species, depending on its socio-economic characteristics. "Science for Environment Policy": European Commission DG Environment News Alert Service, edited by SCU, The University of the West of England, Bristol. 30/9/2016, Issue 472. See at: https://ec.europa.eu/environment/integration/research/newsalert/pdf/invasive_species_import_risk_higher_countries_poor_regulation_472na5_en.pdf

[20] A study looks at how to reduce the environmental footprint of EU trade by preferentially importing products from countries that have greener production processes. The study concludes that this policy could considerably reduce the environmental impact of 200 different product groups imported into the EU. For example, the water consumption attributable to these imports could be reduced by 72% and land use by 65%. "Science for Environment Policy": European Commission DG Environment News Alert Service, Issue 553, 11/19/2019. Available at: https://ec.europa.eu/environment/integration/research/newsalert/pdf/invasive_species_import_risk_higher_countries_poor_regulation_472na5_en.pdf

[21] Article 4 of Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (OJEU 10.10.2013, L 269/1), defines the dimensions of the customs territory, while Article 56 regulates the Common Customs Tariff.

Articles 5 to 8 of Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax (OJEU 11.12.2006, L 347/1) define the territorial scope for the application of VAT and Article 30 defines the term Importation of goods, which the law considers a taxable transaction.

In Spain, Article 3 of Law 37/1992, dated 28 December 1992, on Value Added Tax, defines the territorial limits for the application of VAT and Articles 17 to 19 detail the concept of the importation of goods as a taxable transaction, and specify the operations related to the importation of goods.

that it cannot pose any problems in the following areas: legal uncertainty and lack of clarity on legal consequences, violation of data protection and privacy; excessive costs; incompatibility of hardware, software or computer systems in the data selection process; controllability, efficiency and reliability; ethical considerations; socio-economic consequences for the actors involved, etc.

Moreover, in the tax-customs field, the artificial intelligence system must strictly respect the principle of tax equality, and the rights and guarantees afforded to taxpayers (for more information see, Bilbao Estrada, I. 2019; García-Herrera Blanco, C. 2020; Ribes Ribes, A. 2021; Serrano Antón, F. 2021).

Clearly, the correct use of artificial intelligence, would require the tax-customs administration to further guarantee, extend and strengthen the rights of taxpayers.

3.1 USE OF BIG DATA AND DATA MINING IN THE CONFIGURATION OF THE TAX-CUSTOMS ARTIFICIAL INTELLIGENCE SYSTEM: DETERMINATION OF THE CUSTOMS VALUE USED TO CALCULATE THE COMMON CUSTOMS TARIFF AND THE TAXABLE BASE FOR VAT ON IMPORTED GOODS

In order to configure the artificial intelligence system, first of all, each of the pieces of data that are part of, or may be part of, the tax liability, must be identified. A standardised, digital automation process may be set up, based on the "common excellence data collected".

In this respect, the different elements that make up the base used to calculate the Common Customs Tariff and those used to calculate the taxable amount for VAT purposes must be clearly distinguished.

3.1.1 The common customs tariff

The Common Customs Tariff comprises, in accordance with Article 56(2) of Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code, "all of the following":

(a) the Combined Nomenclature of goods as laid down in Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff;
(b) any other nomenclature which is wholly or partly based on the Combined Nomenclature or which provides for further subdivisions to it, and which is established by Union provisions governing specific fields with a view to the application of tariff measures relating to trade in goods;
(c) the conventional or normal autonomous customs duty applicable to goods covered by the Combined Nomenclature;
(d) the preferential tariff measures contained in agreements which the Union has concluded with certain countries or territories outside the customs territory of the Union or groups of such countries or territories;
(e) preferential tariff measures adopted unilaterally by the Union in respect of certain countries or territories outside the customs territory of the Union or groups of such countries or territories;
(a) f) autonomous measures providing for a reduction in, or exemption from, customs duty on certain goods;
(f) favourable tariff treatment specified for certain goods, by reason of their nature or end-use, in the framework of measures referred to under points (c) to (f) or (h);

(g) other tariff measures provided for by agricultural or commercial or other Union legislation[22].

For the application of the Common Customs Tariff, in accordance with Article 57 of Regulation (EU) No 952/2013, tariff classification of goods shall consist in the determination of one of the subheadings or further subdivisions of the Combined Nomenclature under which those goods are to be classified. The subheading or further subdivision determined shall be used for the purpose of applying the measures linked to that subheading[23].

Moreover, for the purposes of applying the Common Customs Tariff, the customs value of goods shall be determined in accordance with Articles 70 and 74 of Regulation (EU) No 952/2013[24].

The primary basis for the customs value of goods shall be the transaction value, that is the price actually paid or payable for the goods when sold for export to the customs territory of the Union, adjusted, where necessary (paragraph 1 of Article 70)[25].

The price actually paid or payable shall be the total payment made or to be made by the buyer to the seller or by the buyer to a third party for the benefit of the seller for the imported goods and include all payments made or to be made as a condition of sale of the imported goods (paragraph 2 of Article 70)[26].

In determining the customs value, none of the elements listed in Article 72 shall be included[27].

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[22] In accordance with paragraph 1 of Article 64 of Regulation (EU) No 952/2013, in order to benefit from the measures referred to in points (d) or (e) above, goods shall comply with the rules on preferential origin referred to in paragraphs 2 to 5 thereof.

[23] In addition, the provisions on the acquisition of origin and proof of origin (Articles 60 and 61 of Regulation (EU) No. 952/2013) are followed to determine the non-preferential origin of goods.

[24] For more information, see also, Title II (Factors on the basis of which import or export duty and other measures in respect of trade in goods are applied), Chapter 3 (value of goods for customs purposes), Articles 127 to 146, of European Commission Implementing Regulation (EU) 2015/2447 of 24 November 2015 laying down detailed rules for the implementation of certain provisions of Regulation (EU) No 952/2013 of the European Parliament and of the Council laying down the Union Customs Code.

[25] The transaction value shall apply provided that all conditions outlined in paragraph 3 of Article 70 are fulfilled.

[26] In determining the customs value, the price actually paid or payable for the imported goods shall be supplemented by (paragraph 1 of Article 71): (a) the following, to the extent that they are incurred by the buyer but are not included in the price actually paid or payable for the goods: (i) commissions and brokerage, except buying commissions; (ii) the cost of containers which are treated as being one, for customs purposes, with the goods in question; and (iii) the cost of packing, whether for labour or materials; (b) the value, apportioned as appropriate, of the following goods and services where supplied directly or indirectly by the buyer free of charge or at reduced cost for use in connection with the production and sale for export of the imported goods, to the extent that such value has not been included in the price actually paid or payable: (i) materials, components, parts and similar items incorporated into the imported goods; (ii) tools, dies, moulds and similar items used in the production of the imported goods; (iii) materials consumed in the production of the imported goods; and (iv) engineering, development, artwork, design work, and plans and sketches undertaken elsewhere than in the Union and necessary for the production of the imported goods; (c) royalties and licence fees related to the goods being valued that the buyer must pay, either directly or indirectly, as a condition of sale of the goods being valued, to the extent that such royalties and fees are not included in the price actually paid or payable; (d) the value of any part of the proceeds of any subsequent resale, disposal or use of the imported goods that accrues directly or indirectly to the seller; and (e) the following costs up to the place where goods are brought into the customs territory of the Union: (i) the cost of transport and insurance of the imported goods; and (ii) loading and handling charges associated with the transport of the imported goods.

Additions to the price actually paid or payable shall be only on the basis of objective and quantifiable data (paragraph 2 of Article 71).

In determining the customs value, only the costs provided for in Article 71 may be added to the price actually paid or payable (paragraph 3 of Article 71).

[27] Article 72 contains the following elements: (a) the cost of transport of the imported goods after their entry into the customs territory of the Union; (b) charges for construction, erection, assembly, maintenance or technical assistance, undertaken after the entry into the customs territory of the Union of the imported goods such as industrial plants, machinery or equipment; (c) charges for interest under a financing arrangement entered into by the buyer and relating to the purchase of the imported goods, irrespective of whether the finance is provided by the seller or another person, provided that the financing arrangement has been made in writing and, where required, the buyer can demonstrate that the following conditions are fulfilled: (i) such goods are actually sold at the price declared as the price actually paid or payable; (ii) the claimed rate of interest does not exceed the level for such transactions prevailing in the country where, and at the time when, the finance was provided; (d) charges for the right to reproduce the imported goods in the Union; (e) buying commissions; (f) import duties or other charges payable in the Union by reason of the import or sale of the goods; (g) notwithstanding point (c) of Article 71(1), payments made by the buyer for the right to distribute or resell the imported goods, if such payments are not a condition of the sale for export to the Union of the goods.

Finally, Article 74 sets out the secondary methods of customs valuation.

3.1.2 Value added tax

The taxable amount for calculating VAT on imported goods is regulated by the contents of Articles 85 to 92 of Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax.

Thus, the taxable amount applicable to imported goods, in accordance with Article 85 of Directive 2006/112/EC, shall be the value for customs purposes, determined in accordance with the Community provisions in force.

Likewise, in accordance with Article 86 of the said Directive, the taxable amount shall include the following factors, in so far as they are not already included:

(a) taxes, duties, levies and other charges due outside the Member State of importation, and those due by reason of importation, excluding the VAT to be levied;
(b) incidental expenses, such as commission, packing, transport and insurance costs, incurred up to the first place of destination within the territory of the Member State of importation as well as those resulting from transport to another place of destination within the Union, if that other place is known when the chargeable event occurs[28].

Finally, as regards the costs of returnable packing material, Member States may take one of the following measures, in accordance with Article 92 of the above-mentioned Directive:

(a) exclude them from the taxable amount and take the measures necessary to ensure that this amount is adjusted if the packing material is not returned;
(b) include them in the taxable amount and take the measures necessary to ensure that this amount is adjusted if the packing material is in fact returned[29].

3.2 USE OF BIG DATA AND DATA MINING IN THE CONFIGURATION OF THE TAX-CUSTOMS ARTIFICIAL INTELLIGENCE SYSTEM: MOVING TOWARDS A GREEN TAX-CUSTOMS IMPORT CHANNEL

Once the different costs that are factored into the base used for Common Customs Tariff and the taxable base for VAT purposes, have been clearly defined, an AI tool can be developed to expediate the processing of tax obligations arising from the importation of goods and to respond to environmental problems, through the mass analysis of the data obtained and the identification of certain parameters that condition the positive response of the tax administration.

The predictive model that will use algorithms to create green channels for the taxation of goods imported into the European Union, must be based on the essential characteristics that make up a commercial transaction, the tax liability, the factors that determine the tax liability and its purpose as a mode of protection (measures related to environmental protection, sanitary and phytosanitary measures, trade or investment protection, control, competition, financial measures, etc.).

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[28] For the purposes of point (b), 'first place of destination' shall mean the place mentioned on the consignment note or on any other document under which the goods are imported into the Member State of importation. If no such mention is made, the first place of destination shall be deemed to be the place of the first transfer of cargo in the Member State of importation.

In Spain, the taxable amount for VAT purposes, is regulated in Article 83 of the Law 37/1992 on Value Added Tax.

[29] Particularly, in Spain, Article 80(1) of the Law 37/1992 on Value Added Tax allows the taxable amount to be reduced by the following amounts:

1º. The cost of the containers and packaging that can be reused and which have been returned.

2º. Discounts and rebates granted after the transaction has taken place, provided that they are duly documented.

Thus, the consensus algorithms used for creating green channels for tax obligations (Common Customs Tariff and VAT) payable on imported goods, can be modulated on the basis of the identification and collection of characteristic parameters, gathered from the following minimum data (identification of available data, pooling, and subsequent application of the acquired knowledge to new data):

- Origin of the goods: jurisdiction where the good is obtained, produced, processed or transformed; certification and proof of origin; preferential or non-preferential origin of the goods.
- Specifications and registration of the good: concept; substance; material; composition; quantity; certification; origin of materials and parts used in the final product; process of obtaining, producing and post-producing, processing or transformation of the good (a precise record of the well-defined stages in the process: location, methods, and equipment or materials used); quality and treatment; performance (probability of deterioration, durability, hardness, etc.); generic or specific use; source and process control; recognition of good hygiene and good manufacturing practices; intellectual property rights; restricted uses; recognised methods of analysis and sampling; traceability and administrative verification at source of the production, processing and distribution stages; etc.
- Tariff classification of the imported merchandise (subheading or subdivision of the Combined Nomenclature under which it is classified).
- Registration and processing of the import operation: basic steps and documentation; place of export; relevant authorisations, permits and licences; quotas and duration; location of goods; storage; warehousing; permits; packing and packaging; labelling and marking; dispatch, transport and form of distribution; inspections carried out in the exporting jurisdiction; quarantines and restrictions; supervision and monitoring; etc.
- Risks associated with the importation of goods: compliance with EU regulations on the import of plant products, provision of phytosanitary certificates, exemptions from certificates, trade in plants and plant products from non-member countries; the provision of paperwork and information relating to the importing of live animals and animal products into the EU; the rules relating to transit into the EU; health and safety standards; conditions governing the import of foodstuffs; mandatory EU procedures relating to the performance of border inspections on imports of live animals, foodstuffs and animal feed; import controls for food and animal feed products from non-EU countries; approved waste management plans; list of establishments in third country countries; dates of production and certification; use of approved cold stores; approved species; codes identifying the production site; special import conditions; possible public health risks (veterinary drug waste, pesticide residues, food additives, contaminants and genetically modified organisms); etc.
- Goods and/or trading partners, that are the subject of an ongoing investigation relating to possible dumping violations, are involved in the import transaction.
- Reference prices and control over identical or similar goods.
- Exchange rates applicable to the import transaction.
- Existence of related transactions.
- Value of imported goods (customs value of imported goods): transaction value.
    (1) Price actually paid or payable: total payment already made or pending, by the buyer to the seller.
    (2) Commissions and brokerage fees (except for purchase commissions); cost of packaging that is an integral part of the goods; cost of exterior packing, both in terms of labour and materials, insofar as these costs are borne by the buyer and are not included in the price actually paid or payable for the goods.

(3) The duly allocated value of materials, components, parts and similar items that are part of the imported goods; tools, dies, moulds and similar articles used in the production of the imported goods; materials consumed in the production of the imported goods; and engineering, development, artistic and design work, plans and sketches, undertaken outside the Union and that are deemed necessary for the production of the imported goods; when supplied directly or indirectly by the buyer, free of charge or at reduced prices, and used in the production and sale for export of the imported goods, insofar as the said value is not already included in the price actually paid or payable.

(4) Royalties and licence fees relating to the goods being valued which the buyer is obliged to pay, directly or indirectly, as a condition of the sale of said goods, insofar as such royalties and fees are not already included in the price actually paid or payable.

(5) The value of any part of the proceeds obtained from a subsequent resale, transfer or use of the imported goods, which revert directly or indirectly back to the seller.

(6) Transport and insurance costs the imported goods, as well as the loading and handling costs associated with the transport of the imported goods to the first place of destination, where the goods are brought into the customs territory of the Union.

(7) Any cost factor that can be added to the price actually paid or payable.

- Containers and packaging which can be reused and which may be returned.
- Taxes, rights, levies and other charges payable outside the European Union, as well as the charges arising from the importation, with the exception of VAT, provided they are not already factored into the customs value.
- Ancillary costs (such as commissions and packing, transport and insurance costs) incurred up to the time the goods arrive at their first place of destination of the goods within the European Union, if they are not already factored into the customs value.

In short, using this "excellence data" and other data that will have to be added during the process of finetuning the algorithmic models, a green channel will be set up, a fast-track, tax-customs channel for the import of goods.

4 CONCLUSIONS

In the European Union, in an initial phase, a green tax-customs channel can be set up on the basis of the mass analysis of data and the identification of certain parameters that condition the positive response of the tax administration, within a common environmental protection area.

The adoption of an intra-EU consensus algorithm, in a blockchain network, would become the standard mechanism that determines the correct status of the different operations that are carried out in relation to the importation of merchandise into the European Union.

Artificial intelligence enables the detection and prevention of tax and customs fraud, reducing administrative costs, increasing collection efficiency, and contributing to the protection of the environment and the proper use of natural resources worldwide.

The correct validation of each block at the different stages of the import operation (through blockchain technology) facilitates the entry of goods into the European Union and allows for the direct determination of the customs value for the purposes of the Common Customs Tariff and the quantification of the VAT taxable base.

Tracking the origin, provenance, characteristics and value of the imported merchandise, by means of smart verification, allows us to control environmental risk, ensures that the goods are produced in accordance with green practices and employing environmentally friendly procedures, thus enabling the EU to recognise an eco-label used by these goods.

The AI-based green tax-customs channel will open the EU's doors to the importation of selected sustainable goods, certain green resources, or defined types of recyclable waste, in a common circular integration data space.

In a second phase, the aim would be to create "digital twins" of imported goods, so that tax and customs administrations can easily access detailed information about the goods and about the transactions that involved these goods, and anticipate the different customs and tax obligations, inside a circular integration area.

The digital version of the imported good shall mimic, simulate and contrast each step of the import process, undertaken by the physical version of the imported merchandise, in real time.

Ultimately, the creation of a new tax-customs legal framework for the importation of goods can give the European Union a competitive advantage in the global market, by means of a solid, realistic and sustainable strategy that supports a responsible system of control, monitoring and certification of imported goods, through the use of artificial intelligence.

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