

# Artificial Intelligence Usage in EU Tax Administrations

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**Katerina Ilieva** | IBFD European Knowledge Group

The author can be contacted at [k.ilieva@ibfd.org](mailto:k.ilieva@ibfd.org)

## 1. Introduction

Artificial Intelligence (AI) is a transforming force in various industries, including the public sector. In the taxation field, particularly, AI is widely used as a tool for supporting taxpayer compliance and reducing taxpayer burden. It also benefits tax administrations by streamlining internal processes, reviews, audits and decision-making, leading to a more efficient use of resources.

This paper aims to give a brief overview of how EU tax administrations are leveraging AI. It will explain what applications AI has in tax administration and give several examples of Member States that are successfully using AI – to enhance tax-related services, ensure tax compliance and more. Through these insights, the paper highlights the growing importance of AI in creating smarter, more responsive and more efficient tax systems across the European Union.

## 2. Current AI legislation in the European Union

Discussions about AI within the European Union started back in 2018, with the European Commission's release of the [Coordinated Plan on Artificial Intelligence](#), and these discussions have continued to evolve with the [Artificial Intelligence Act \(AI Act\)](#), which came into force on [1 August 2024](#). The [Coordinated Plan on Artificial Intelligence](#) aims to boost AI investment, implement national AI strategies and harmonize AI policies across Member States to prevent fragmentation. The [AI Act](#) serves as a framework for guiding administrations in the ethical and effective use of AI. Complementing those acts, the [Digital Decade Policy Programme 2030](#) enhances the coordination of digital transformation and investment, setting clear EU digital targets for Member States.

At the beginning of 2024, the European Commission [announced](#) the establishment of an [AI Office](#) to promote the development and adoption of trustworthy AI while mitigating associated risks. This initiative is part of a [broader package](#) that also includes the [GenAI4EU](#) initiative, designed to support startups and SMEs in creating trustworthy AI aligned with EU values. These applications are intended for use in both private and public sectors, aiming to foster innovation and ensure AI technologies serve societal needs effectively.

## 3. Current use of AI in tax administrations

There are various applications for AI by tax administrations, such as:

- > knowledge processing;
- > risk assessment and fraud detection;
- > taxpayer assistance (via chatbots or virtual assistants);
- > data analysis and processing; and
- > compliance and enforcement.

A tax administration employee can computerize the information received from a paper-filled tax return. Once digitized, AI can be leveraged to perform tasks such as risk assessment and fraud detection. As a practical example, when a handwritten tax return is received by the tax administration, it can be converted into a digital file that can be processed by a computer. This is achieved through optical character recognition (OCR), which transforms handwritten, printed or typed text into machine-encoded text. Once the file is computer-readable, it can be processed and worked with. Tax administration employees can search for specific words and numbers in a document (e.g. tax returns, receipts, financial statements, etc.) and then extract those specific words and numbers. The extracted information can be classified and categorized, with distinctions being made between different types of expenses or income. For example, when a tax return is digitized, an algorithm can be applied to identify compliance risks within the taxpayer population and determine how to mitigate and treat them. This involves flagging risky tax returns for tax audits, managing tax refund risks to prevent fraudulent or impermissible refunds, and detecting illicit activities. Additionally, pattern recognition algorithms can be applied to identify potential errors in a tax return or financial statement. Moreover, predictive analysis can be conducted to forecast future trends and behaviours, such as identifying individuals at high risk of tax fraud.

Lastly, tax administrations use chatbots and virtual assistants to help with the increasing number of queries from taxpayers.

#### 4. Case studies

The case studies that follow showcase diverse approaches to AI utilization in tax administrations. These countries display varying levels of AI usage maturity – from Spain's fraud detection tools to France's machine learning fraud detection. The range of countries included in the case studies aims to be representative of the geographic and economic diversity within the European Union.

##### a. [Spain](#)

The [Spanish Tax Agency](#) was among the first tax agencies to start using AI-driven virtual assistants (chatbots) which can answer frequently asked questions about tax filing deadlines, general understanding of taxes, VAT and e-invoicing, etc.

The Spanish Tax Agency also uses AI to facilitate the delivery of warning messages, including those regarding possible errors when modifying information on employment income and those to entrepreneurs filing during the voluntary filing period. Moreover, the tax administration uses AI for risk detection and predicting the likelihood of taxpayer non-compliance.

##### b. [The Netherlands](#)

The Dutch Tax and Customs Administration uses machine learning algorithms to perform web scraping, which is used to gather and match data with pre-existing tax authority data. Another use of web scraping is to identify interconnected websites and determine their ultimate owners. This way, unknown taxpayers are detected, and potential non-compliance is identified.

The Dutch tax authority also uses AI to allocate a risk score to taxpayers and then sort them into different categories based on the possibility of non-compliance. This information is then used to decide the audit and treatment strategies for the different groups.

### c. [Belgium](#)

In addition to the aforementioned usages, the Belgium Tax Agency also uses AI to monitor, flag and block suspicious VAT transactions.

### d. [France](#)

In addition to the aforementioned usages, the French Tax Administration has integrated AI into its property tax system, using aerial imagery and machine learning to detect undeclared swimming pools, property extensions and other taxable assets.

## 5. Challenges and considerations

With the high potential for AI usage, there also comes significant risk. One of the biggest concerns is related to privacy and security, since tax authorities handle large volumes of sensitive and personal data. Ensuring the correct handling of the data, as well as its security and lack of misuse is very important. Tax administrations need to invest in cyber security in order to be able to protect the data they are handling from breaches.

Other major concerns are the ethical implications and fairness of AI usage. AI biases can lead to unfair treatment of taxpayers. For instance, if the data used to train AI models is flawed or incomplete, it can result in biased outcomes. This means that certain taxpayer groups might be unfairly targeted or subjected to more frequent audits based on inaccurate or prejudiced data (such as the [Dutch childcare benefit scandal](#)).

Lastly, there are technological and infrastructural challenges. Implementing AI solutions requires good IT infrastructure, which must be continuously updated. Apart from the required infrastructure, administrations also need to train their human resources on using AI.

## 6. Conclusion

As seen from the case studies provided, AI is already used by tax administrations and its usage will only continue to grow. It is very important that tax administrations allocate funds and human resources to develop responsible and ethical AI practices, which can ensure the correct utilization of AI. Despite the risks associated with AI, such as data bias, overreliance on AI, IT security issues and the potential loss of public trust in a given administration, AI has great potential that continues to be discovered and developed.

As AI continues to advance, its role in tax administrations will expand, unlocking new opportunities to streamline processes, enhance compliance and deliver better services to taxpayers. EU regulations and policies will remain critical in guiding this transformation, ensuring that AI is used responsibly and harmonized across Member States. The path forward is clear: implementing ethical AI practices and ensuring that personnel are knowledgeable and well-trained is essential.

## IBFD references:

- > EU tax law developments are reported on the daily IBFD [Tax News Service](#) page.
- > A. Rizzo & G. Hassan, [Addressing the Use of AI by EU Tax Authorities: Towards a Common Framework of Taxpayer Protection](#), 65 Eur. Taxn. 1 (2025), Journal Articles & Opinion Pieces IBFD.