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Report

Chapter 6: Getting to grips with AI

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Abbreviations and acronyms

AI	Artificial intelligence
FMIS	Financial management information system
HMRCHis	Majesty's Revenue and Customs
IMF	International Monetary Fund
IT	Information technology
LLM	Large language models
OECD	Organisation for Economic Cooperation and Development
PFM	Public financial management
UNDP	United Nations Development Programme

1 Introduction

Over the past few years, researchers and practitioners will have noticed a significant uptick in the level of interest in the potential impact of AI on PFM. Similarly, those following developments in digital government more broadly have seen an increase, both in those advocating for governments to embrace AI across a range of sectors, and those warning about the associated risks.¹ Those focusing on the digital economy will have observed the number of governments making pronouncements on AI and its growing prominence on international agendas.²

Central to all three trends is the hope that AI can increase productivity, coupled with concerns about its impact on jobs and the fear of being left behind by the AI revolution. All these trends should be relevant for a finance ministry that is ambitious about growth, concerned about inequality, and serious about making public services more efficient. At the same time, in such a fast-moving space, it can be difficult to separate hype from reality.³ Finance leaders will need to focus on the things that will matter most in their own context and define their role vis-à-vis AI accordingly.

AI is generally defined as ‘the ability of the software systems to carry out tasks that usually require human intelligence: vision, speech, language, knowledge, and search’ (Farooq and Solowiej, 2021). While recognising that there are various classifications and sub-classifications of AI, for the purposes of this discussion we use the generic terms ‘AI tools’ or ‘AI models’ unless further explanation is warranted.

This chapter provides a broad overview of the AI discourse in PFM, as well as broader trends across government and the economy relevant for policymakers managing public finances. It concludes with some thoughts on how they and those who support them might engage with these trends going forward.

¹ By 2020 more than 50 governments, in addition to the European Union, had developed or were in the process of developing a national AI strategy (Farooq and Solowiej, 2021).

² Three multilateral AI summits have been hosted recently – the AI Safety Summit in UK in 2023, the AI Seoul Summit in 2024, and the AI Action Summit in Paris in 2025. In addition, the Global Partnership on AI was convened in July 2024 in India.

³ See, for example, Gartner’s Hype Cycle for Artificial Intelligence (Jaffri, 2024).

2 AI in PFM

PFM is a natural place to look for AI use cases. There are a lot of processes to complete, documents to read and data to analyse. These administrative burdens apply to government officials, as well as citizens and businesses. This is time-consuming and absorbs human resources that might be better utilised on higher value-added tasks. It is unsurprising then that a World Bank report, listing nine areas where AI opportunities and use cases are emerging, is dominated by PFM topics – corruption, customs, procurement, tax compliance, tax policy and audit (Farooq and Solowiej, 2021).

Pattern recognition and anomaly detection

In many of these use cases, the onus is on using AI to identify compliance ‘red flags’ by analysing patterns in large datasets.⁴ Public procurement is a case in point. As it has become more digitised, governments and international organisations have recognised the ‘enormous untapped potential for the application of data analytics tools’ to achieve different outcomes (Cocciolo, Aquino and Okiya, 2022), with AI being the latest analytical tool now at their disposal.

Governments broadly aspire to reduce corruption and waste in public procurement. Countries including Singapore,⁵ Italy,⁶ Brazil⁷ and Ukraine,⁸ and organisations such as the World Bank,⁹ have been using AI tools to identify ‘red flags’ in large datasets for some time. In many of these cases, AI is looking for suspicious patterns in the data, such as potential collusion between public individuals and private individuals and firms (Gerli, 2024). Initiatives such as BuySmarter in the US Department of Health and Human Services use AI to analyse contracts to identify where efficiencies can be gained.¹⁰

Similar use cases are emerging in tax administration to combat fraud and reduce errors. In the UK, HMRC’s Connect joins up tax data with third-party information to create large datasets, using data analytics to identify suspicious patterns.¹¹ HMRC is now scaling up its use of

⁴ How AI could support the government’s anti-corruption agenda – Oxford Insights

⁵ Exclusive: Singapore trialling AI to predict procurement fraud

⁶ Machine learning on public procurement open data – ANAC case study | PPT

⁷ Robot Alice – Bid, Contract and Notice Analyser – Observatory of Public Sector Innovation

⁸ DOZORRO Artificial Intelligence to Find Violations in ProZorro: How It Works – Transparency International Ukraine

⁹ Can artificial intelligence stop corruption in its tracks?

¹⁰ HHS wants to use AI to help it ‘Buy Smarter’

¹¹ HMRC’s Connect computer and investigations | Taxation

large language models (LLM) to detect VAT fraud.¹² In Australia, the use of AI tools has been instrumental in clawing back large sums in unpaid taxes.¹³ Asquith (2024) reports similar initiatives across many OECD countries, as well as Brazil¹⁴ and India, and ambitions for similar initiatives in Vietnam. Authorities often use AI to look for suspicious patterns in the data, such as mismatches between declared earnings or tax liabilities and spending or wealth.¹⁵

Virtual assistants and chatbots

While these use cases tend to attract a lot of attention due to their revelatory nature and the large sums sometimes involved, a more mundane use case for AI in both tax administration and public procurement is the provision of more transparent and responsive services. AI chatbots that answer taxpayers' questions and assist them in filing their taxes are proliferating, including in lower-income countries and emerging economies (Carbajo Vasco and Collosa, 2022; Kim, 2023; Asquith, 2024; Cantens and Tourpe, 2025).

Governments are also using chatbots for public procurement. Some are internal facing, such as San Francisco's virtual assistant to help city government workers navigate IT procurement processes.¹⁶

Others are external facing, such as the City of El Paso purchasing department's 'Ask Laura' virtual assistant.¹⁷ In 2023, the French finance ministry's 'Claudia' chatbot handled 77% of its clients' e-invoicing questions – from a total of approximately 1 million – allowing support to focus on cases requiring human assistance.¹⁸

Other emerging applications

Focusing more on core PFM tasks, a recent survey of OECD countries identifies potential and actual AI use cases around macroeconomic and fiscal forecasting (i.e. the forecasting of GDP and other economic indicators),¹⁹ spending decisions (subsidy costing and targeting), budget planning and monitoring (policy costing and fiscal risk analysis), financial management and reporting (automating repetitive tasks and optimising workflows)²⁰ and external

¹² UK HMRC adopts AI against VAT fraud – vatcalc.com

¹³ AI auditors let the ATO find millions in unpaid tax and super

¹⁴ ENAP Institutional Repository: High Performance Inspection – FAPE

¹⁵ Undeclared pools in France uncovered by AI technology – BBC News

¹⁶ Meet PAIGE, San Francisco's promising young IT procurement chatbot | StateScoop

¹⁷ Meet El Paso's Chatbot, Ask Laura. She's a Real 'Game Changer'

¹⁸ <https://aife.economie.gouv.fr/a-lecouste-de-nos-utilisateurs/le-support-et-les-assistants-virtuels>

¹⁹ Use cases in Latin America and Caribbean countries are also emerging in this area. See Oliveira (2023) for Brazil; Barrios et al., (2021) for Belize and El Salvador.

²⁰ Examples from the subnational level include New South Wales' Categorisation Artificial Intelligence Technology (CAITY), which is used to categorise procurement spend, and the Brazilian National Treasury's AI tool for reclassifying subnational government expenditure to international standards (which may be extended to classifying climate spending (AI is Enhancing Fiscal Transparency in Brazil)).

engagement (using chatbots to answer taxpayer questions and queries from the public on spending programmes) (Moretti, 2024).

Most of these emerging and potential use cases represent an evolution rather than a revolution, with AI replacing or augmenting what humans or other technologies already do, rather than fundamental changing how governments are managing their public finances (Moretti, 2024). This trend towards replacing staff time and/or older technologies is also observable in some emerging markets, where cash management has become an area of PFM ripe for the application of AI.

For example, in Georgia, faced with the impracticality of scaling up its workforce to match a significant expansion in the coverage of its PFM system, the treasury is instead training AI models to perform payment risk management that would otherwise need to be done by new hires (Gamkrelidze, 2024; Gamkrelidze et al., 2024). Turkey's finance ministry is training AI models on revenue and spending datasets to improve the quality of its cash flow forecasting (Can, 2024). Both initiatives are showing positive results compared to traditional approaches, but are still in the testing phase.

What's the catch?

All of these AI use cases in PFM come with certain preconditions, potential drawbacks and larger questions. The biggest precondition is a certain level of digital maturity. Even among OECD countries, Moretti (2024) notes that many have 'outdated and fragmented IT systems that are ill-equipped to support advanced AI functionalities'. The IMF's *Digital Solutions Guidelines for PFM* place AI-enabled functionalities firmly in the 'advanced' column of its assessment framework, noting that, 'while ministry of finance officials may express interest in the adoption of new digital innovations—such as the new generative artificial intelligence (AI)—the lack of foundational elements may undermine the possibility of such adoption' (Rivero Del Paso et al., 2023). This also partly explains why lower-income countries feature less frequently amongst use cases.²¹

A related concern is around the availability and quality of training data. For instance, anti-corruption efforts face problems due to insufficient amounts of data on which to train AI models, and because of the inevitable bias in data related to the number of corrupt practices that go undetected (Sanchez-Graells, 2022). There can be significant political fallout from AI models that make wrong predictions about the behaviour of taxpayers and welfare claimants (Moretti, 2024).

²¹ Nevertheless, countries such as Rwanda are exploring applications of AI built on their FMIS.

The biggest potential drawback of using AI is around transparency and accountability. Predictive AI models have the potential to outperform traditional forecasting models, but their assumptions are harder to explain, which could represent a major step back on recent innovations in fiscal transparency. Prescriptive AI models that make fiscal policy recommendations could upend established fiscal institutions and accountability mechanisms unless appropriate oversight is in place (Moretti, 2024). While developers of AI models sometimes list 'explainability' as one of their goals, the level of explainability that would be needed to meet legislative or customary definitions of reasoned decision-making is not yet in place, even among current state-of-the-art generative AI models.

There are also concerns about the governance of AI models, and the ability of auditors to provide effective oversight. A recent performance audit of the Australian Tax Office's AI models found that its governance arrangements are only partly effective as it has yet to implement key parts of its 2022 AI strategy around roles and responsibilities across the organisation, risk management and data ethics (Australia National Audit Office, 2025). The same report also notes the need for 'investment in knowledge, methodology and skills' to develop the capability for 'more technical auditing of the AI tools and processes'.

Some of the biggest questions are around cost. Despite being premised on productivity gains, there is to date little evidence in terms of the costs and benefits of using AI for PFM (Moretti, 2024). This represents a significant knowledge gap for the PFM community given the costs of investing in the technology infrastructure that underlies the use of AI, particularly for governments looking to 'leapfrog' levels of digital maturity in PFM, for example by investing in cloud-based FMIS that feature AI-enabled functionalities. Better understanding is also needed of the potential for governments to become 'locked-in' to their FMIS providers.

Taken together, the picture is mixed. On the upside is the potential for AI to reduce staff costs while increasing the quality of their work. However, the downside risks suggest the need for additional skilled staff, particularly to provide human oversight for transparency and accountability, but also IT procurement and contract management specialisms to manage the potential risks of vendor lock-in.

3 AI Beyond PFM

Over the last several years various reports and articles have made the case for the use of AI across a range of sectors. For example, Chui et al (2018) identify 400 AI use cases across 19 industries. A background paper for the World Bank's 2024 World Development Report points to emerging use cases in lower-income countries in publicly-financed areas including agriculture, healthcare, education, finance, energy, infrastructure and data (Dixit and Gill, 2023). While promising use cases continue to emerge, so do concerns that government spending on AI could be premature and wasteful.

Here we consider some of the discussion around healthcare, education, and social protection (which tend to be areas where higher income countries spend a significant proportion of their budgets, and where lower income countries are encouraged to do the same.) As in the discussion above, we are constrained to look mostly at announcements of policies or new projects, and are not well-placed to evaluate the feasibility or the merits of these proposed interventions.

AI in the health sector

Expectations of efficiency gains from the use of AI tools are particularly high in healthcare. Perhaps the most visible manifestation of this is in the UK, where the government's ambitions to reform the National Health Service (NHS) have become synonymous with broader plans for the use of AI in government and the economy (UK Department for Science, Innovation and Technology, 2025). Advocates for these reforms suggest that the combination of digital health records and AI can guide policy at the national level, coordinate care at the regional level, improve operational efficiency in hospitals, support clinical decision-making in primary care, and deliver administrative functions (Refsum et al., 2024).

Nevertheless, there are voices urging caution. While acknowledging that there would be significant benefits, Flemming (2024) points to the complexity of the NHS (reflected in its myriad of software systems and digital strategies) as well as data privacy and security issues as significant challenges to establishing a single shareable patient record. Shah (2024) highlights that vulnerable groups are less likely to be represented in the datasets AI tools are trained on for policy purposes, and less able to interact through digital channels that

would feature AI tools. He also raises concerns about the motives of ‘Big Tech’ and the ‘considerable dangers of locking in to a provider that you cannot leave’.

Promising healthcare use cases are also emerging in lower-income contexts, particularly around diagnostics. For example, combining portable imaging technologies with AI screening has improved health workers’ ability to make timely diagnoses of tuberculosis in remote areas of South Sudan and Tajikistan (UNDP, 2024). Analysis by McKinsey suggests that African countries could realise efficiency gains of up to 15% of health spending by 2030 through accelerating their adoption of digital tools (McKinsey, 2023). These include AI tools for patients to self-triage, updating and managing patient records, and clinical decision-making.

Lower-income countries might also avoid the legacy and complexity challenges of establishing a single shareable patient record faced by countries like the UK. For example, in Rwanda and Senegal SMART Health Cards are bypassing systems that prevent patients from accessing and sharing their health records across healthcare providers, and allowing policy-makers a more comprehensive view of data for decision-making (Agnew and Gaye, 2022). In Zambia the government has leveraged its national digital ID to improve access to medical records and healthcare (Mwenda, Tsododo and Nhongo, 2025). Spurred by the possibilities of AI, India aims to establish ‘a unified health ID for every citizen, linking their health records and enabling seamless sharing of health data’ (Kashyap, 2025).

AI in education and social protection

AI use cases are also emerging in the education and social protection sectors. In education, automating routine tasks can help educators focus more time on students (Bryant et al., 2020), and AI tools can help personalise the learning experience for teachers and students (Dixit and Gill, 2023). The adoption challenge in education is often around underlying school management information systems (on which AI tools for automating routine tasks would operate), the quality of which varies significantly both within and across countries (Cresswell, Long and Fraser, 2023). Similarly, the ability to use AI tools for personalised learning rests on the availability of performance data on individual students from management information systems, which comes with privacy concerns, ethical concerns (such as algorithmic bias), and concerns about the effects on critical thinking (Tombazzi, Choukeir and Lai, 2023; Paugh, 2025).

There are also risks, as well as rewards, in the use of AI in the social protection sector. Togo’s use of AI tools to target beneficiaries of its Novizzi cash transfer programme during the COVID-19 pandemic has served as an inspiration for other lower-income countries (Aiken et al., 2021; World Bank, 2021; Dixit and Gill, 2023). In Canada, the

government used AI tools to identify people eligible but not claiming benefits by analysing large amounts of unstructured data (ISSA, 2020).

However, attempts to use AI to weed out ineligible beneficiaries of social protection programmes can get it wrong, with detrimental political effects. An AI tool used by the UK government to identify potentially fraudulent welfare claimants was revealed to show bias based on age, disability, marital status and nationality.²² In the Netherlands the use of AI tools to detect fraudulent child benefit claims resulted in massive exclusion errors and demands to return payments, with disastrous consequences for those affected, often low-income families with dual citizenship, traits that were flagged as risk factors by the algorithm.²³

Constraints and caveats

These broader examples around the use of AI in government (and beyond) raise similar issues to the use cases within PFM.

First, AI use cases across different sectors are (for the most part) enabled through technologies and capabilities around data management and data governance, for instance, through open data standards. The capability to exchange data across different administrative systems and create large datasets is crucial for training and deploying AI tools: to borrow what has now become a cliché, ‘there is no AI without data’ (Snaith, 2023). This is important for ambitions to improve public services as well as stimulating innovation in the economy (e.g. in medical research) (Macon-Cooney et al., 2024).

Governments need to be more judicious about the arrangements they enter into with private sector vendors providing digital infrastructure, particularly with respect to their data assets, if they are to provide a competitive environment for the development of AI tools (Bracken, 2023; Pahlka, 2024).

Lower-income countries lag significantly in terms of connectivity, computing power and digital public infrastructure, which is a major impediment to both regulating and using AI (Diop, 2023). A potential benefit of politicians’ current interest in AI is that it could generate the political will for investments in data governance and infrastructure (Shah, 2024).

The second issue is around transparency and accountability. As discussed above, even the well-intentioned use of AI can nevertheless result in harm. AI systems involve ‘many hands’ (both public and private) along their value chain, making it difficult to assign

²² Revealed: bias found in AI system used to detect UK benefits fraud | Universal credit | The Guardian

²³ Dutch scandal serves as a warning for Europe over risks of using algorithms – POLITICO

responsibility or liability when things go wrong (Arcila, 2025). Ethical, privacy and legal concerns could prevent the development of useful tools unless governments can put in place appropriate human oversight (Sanchez-Graells, 2022).

The third issue is around costs and benefits. Efficiency gains from the use of AI and other digital tools may be premised on expectations of higher levels of spend over time. For example, in the case of healthcare in Africa, McKinsey's estimated efficiency gains discussed above, are based on the assumption that spending on healthcare will rise over the next 5 years despite the fiscal constraints many African countries currently face. For OECD countries Robinson (2020) argues that it is new technologies (rather than other explanations such as population aging) that are driving up the costs of healthcare worldwide as demand for precision medicine increases (something which AI would enable further).

More generally, to the extent that the digital public infrastructure on which AI operates leads to better public service provision, leading to more demand and inclusion, it inevitably leads to higher total costs, even if unit costs are reduced (Vasconcellos and Eaves, 2025). In other words, while there is the potential to do more with less, it may nevertheless require governments to do more and spend more to realise this potential. Frameworks for understanding these trade-offs will be imperative for getting to grips with the potential of AI in the public sector.

Combined, these issues point to the need for a more skilled workforce to equip governments for the AI era (OECD, 2024; Pahlka, 2024). That could mean hiring people with the skills to build digital public infrastructure and AI tools, as some governments have done, but it will almost certainly mean bringing in the skills needed to manage the procurement and contracting of private sector products and expertise.²⁴

While this need within government has been obvious for some time, it is more difficult to achieve in lower-income countries where resources are constrained and the labour market for these skills is not deep, often due to demand for the same set of skills in higher-income countries (Valencia and Camilo Diaz, 2024). This in turn points to a role for international organisations in addressing this market failure, including potentially facilitating the pooling of resources across countries (Diop, 2023).

²⁴ For example, the UK's procurement guidelines suggest 7 specialisms a procurement manager might consider when establishing a multidisciplinary AI procurement team.

4 An emerging research agenda

AI has captured the popular imagination in ways that previous waves of innovation have not. This presents an opportunity for governments to invest in areas (such as data governance) that can have broader benefits, whether or not they in fact end up enabling AI. Research that facilitates learning and informs the trade-offs facing policy-makers could help leverage this opportunity and define the role of fiscal institutions and international organisations around AI, particularly in lower-income countries. Facilitating such learning would likely require researchers more closely embedded in the actual work.

Learning in the open

As with all software, there is substantial potential for learning within and across countries, around what is working, what is not working, and why.

While ‘working in the open’ is a good recommendation to facilitate such learning (Flemming, 2024), how different governments are thinking about and using AI is often opaque, or arrives through research and surveys with a significant lag. Some of the use cases cited in this chapter have disappeared from public view with little trace following early pronouncements, allowing little indication of whether they failed, why they failed, what was learned, and if that learning is being incorporated into future initiatives. This is a problem given that failing is a key part of learning in software development, and agile or problem-driven approaches to public administration reforms more generally.

Broader and deeper research on the costs and benefits of AI initiatives, including whether the assumptions that might underpin these frameworks (such as levels of digital maturity, and levels of government spending on public services) are applicable to other contexts, could be useful for policy-makers weighing up the trade-offs of different investments, particularly in lower-income countries.

Thinking about trade-offs and scale

From the perspective of finance leaders, there are multiple trade-offs.

Should a finance ministry invest in AI for PFM, or should it invest in the people and skills that can challenge the AI investment plans of other government departments, to help them avoid duplicative spending, getting locked-in to contracts with vendors who overpromise and underdeliver, or inadvertently giving away access to data assets for poor returns?

Let's take a few specific examples to illustrate the trade-off: which investments for AI for PFM offer the best value for money given the country context? Will investments in AI tools that save money in the short term, require new spending on skills to provide oversight and accountability over those tools in the medium term? And what might be the cost of not having those oversight and accountability skills in the short term (given the precedent of large amounts of compensation / damages being awarded to persons found to have faced unfair discrimination from AI tools)²⁵?

Another, narrower example would be: should a procurement agency invest in AI for detecting fraud and corruption in procurement? Or should it invest in AI that might make it easier for SMEs to engage with government procurement procedures to foster a more competitive market? Should a tax authority invest in AI for detecting tax evasion, or AI that makes it easier for SMEs to enter the formal economy? In both cases, there are likely to be alternative and potentially more suitable technology investments.

There are also broader questions over whether a finance ministry might even want to take AI talent out of the broader economy where it could potentially add more value in terms of future revenue streams.

Similar trade-offs exist for international organisations supporting governments in lower-income countries. A background paper for the World Bank's 2024 World Development Report 'suggests that the World Bank should promote and finance projects and organizations that use AI to tackle some of the most challenging development problems' (Dixit and Gill, 2023). The World Bank and other international organisations will face a similar set of trade-offs over where they can best add value. For example, deciding whether to support sector specific projects which may not scale or be sustained, versus supporting the development of digital-era skills and ways of working in key government institutions and teams.

²⁵ In Netherlands, the tax authorities used AI systems to try to identify cases of fraud in claims of childcare allowances. Audits found that the system was biased against families with children of dual nationality, especially those of Turkish or Moroccan origin. Prime Minister Mark Rutte's government resigned in apology. (See <https://www.bbc.com/news/world-europe-55674146>). The privacy regulator imposed a 2.75 million euro fine on the tax administration in 2021, for improper and discriminatory use of data, followed by a 3.7 million euro fine in 2022.

Embedding researchers in digital teams

Getting such a research agenda off the ground, particularly in lower-income contexts, will likely require researchers with relevant skills embedded in digital teams. The example of the researchers who supported Togo's Novissi programme might be instructive in this regard (Aiken et al., 2021; World Bank, 2021), though it will be important to facilitate more domestic and regional support for the purposes of sustainability. Such a learning model could be a useful conditionality to build into the investments of international organisations, particularly when compared to some of the conditionalities currently used.

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