Data Analyst

LSE – Lusaka, Zambia

# Key qualifications and experience required:

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| Criteria | Evidence | Essential/  Desired |
| Knowledge and Experience | BSc or MSc degree in computer science, data science, economics, financial engineering, statistics or a related quantitative subject where working with large data sets to achieve causal inference formed a key part.  Proven experience in data analysis, data management, and/or database development.  Proficiency in at least one data analysis tools and software, such as STATA, SQL, R, Python, and at least one data visualisation tools like Tableau or Power BI.  Strong analytical and problem-solving skills, with the ability to translate complex data into actionable insights.  Knowledge of administrative data systems. Knowledge of data protection laws such as the EU GDPR.  Experience of working in one or more developing countries, preferably in a policy setting. | E  E  E  E  D  D |
| Commun-ication | Evidence of excellent written and oral communication skills, in particular evidence of explaining technical information to non-specialist audiences.  Experience of producing documents such as presentations, internal memos, papers or blogs targeted to a specific audience | E  E |
| Teamwork and motivation | Ability to work with a range of teams across a large and complex organisation. | E |
| Planning and organisation | Ability to work independently and to take initiative with minimal supervision in challenging environments.  Excellent organisational skills, including the ability to plan and prioritise a varied workload to meet deadlines in an efficient and effective manner.  Demonstration of attention to detail whilst being able to produce outputs within set deadlines.  Highly flexible and agile to meet changing demands and priorities | E  E  E  E |

# Supporting Statement (no word limit):

**Knowledge and Experience**

Throughout my academic career, I have developed a strong foundation in quantitative analysis, research methods, and economic theory. Combined with the experience I gained working with the Horizon Scanning and Insights team and the Department for Work and Pensions (DWP), I have garnered expertise in quantitative and qualitative research, and policy solutions.

I have completed a BA in Philosophy, Politics and Economics, with a significant quantitative component, attaining high grades on my Mathematics for Business and Economics, Statistics & Econometrics, and Applied Econometrics modules with 93%, 85%, and 76% respectively. Working with large economic datasets for analysis was important, especially in Applied Econometrics – the assessed coursework focused on assessing the macroeconomic drivers of inflation in the UK, Denmark, Norway, Sweden and Denmark.

I was tasked with investigating the impact of the M3 money supply, exchange rate, and global energy prices on inflation. The aim was to identify statistically significant relationships to learn how to inform policy prescriptions and forecasts.

I conducted a thorough literature review which included evidence from Thailand, Ukraine, and China, and a panel-data analysis of EU members. I compiled macroeconomic data from the OECD, World Bank, and BIS. To ensure robust results, I utilised timeseries techniques to address autocorrelation, multicollinearity, and stationarity. ARIMA, ARDL, and Fixed Effects (FE) models were estimated to investigate the relationship individually and cross-sectionally. When diagnostics tests gave ambiguous results, I discussed with my professor and made evidence-based decisions, utilising economic theory, to refine model specifications.

My final results found that autoregressive components, and global energy prices were statistically significant in estimating inflation, highlighting the importance of global price shocks in fiscal and monetary forecasting. M3 money supply and exchange rates were insignificant. The project was graded First Class with 75% and was praised for its extensive literature review and technical rigour, demonstrating my ability to apply econometric methods to analyse relevant economic questions under uncertainty. All analysis was conducted in STATA, with model selection guided by diagnostics and economic theory.

I have also expanded my knowledge of data analysis and presentation by upskilling myself beyond what was taught at degree level. First, because of my interest in econometrics and a desire to prepare myself for a master’s degree in Economics, I have taken and completed the IMF’s Macroeconomic Forecasting Course. This course extended my knowledge by more extensively covering forecast model evaluation, and adding SVARs, VECMs, and Johansen Cointegration tests to my repertoire. I wanted to apply these new skills to investigate recent fiscal problems facing the UK, such as the decreased fiscal headroom and the Bank of England’s QT regime, so examined an SVAR model borrowing closely from Blanchard and Perotti (2002) to solve endogeneity problems between yields and debt-to-GDP ratio. The model was estimated across 3-30yr bond maturities and, using Blanchard’s r < g condition as a dummy variable, I found that yields were negatively correlated with debt-to-GDP under low interest rates.

Second, my data visualisation skills were developed independently in my work for the Leeds Policy Institute, a student-run think tank that I cofounded. I developed the website using NextJS, and this gave me a wider scope when it came to collecting and analysing data. Using Tableau, I created and presented a report to the committee detailing weekly new users, our average user retention, and indicating why we experienced user spikes, and how we might recreate those in the future. The result was that the social media team implemented a new process for advertising articles and reports, and we experienced a roughly 12% growth in monthly users when controlling for seasonality.

Moving on from my academic experience, my time at the DWP also gave me a strong foundation for delivering actionable insights as well as a deep understanding of data protection laws. I researched how the evolving Data Regulation, Privacy and Ethics (DRPE) environment might impact Fraud, Error and Debt (FED) over a 5-10 year time horizon. The purpose of this research was to add to the team’s final product, the ‘Trend Deck’, which was to then be distributed amongst the FED division. I created insights from my research through the Horizon Scanning methodology – first, I detected signals in the public and private sector, such as the performance of the FinTech sector or new data legislation, and synthesised them to reveal patterns. I connected these patterns with trends and the wider context, or “big picture” – often this wider context came from economic or legal literature reviews and data analysis with my colleagues – to create a narrative of the future. My insights were added to the Trend Deck by the end of my internship and I received strong praise for picking up a complicated topic quickly, and for my deep understanding of the different moving parts of DRPE.

**Communication**

During my internship with the DWP, my research was segmented into a PESTLE framework (political, economic, social, legal, technological, and ethical). I needed to communicate complex, technical findings, for example around emerging markets like Open Finance and the general FinTech sector, to colleagues and senior managers during my workshops. Once understood, they could contribute their own knowledge and expertise to my forecasts and recommendations.

I designed and delivered two workshops – one was tailored to technical audiences, such as the in-house legal team and my colleagues who were familiar with recent Smart Data innovations, while the other was tailored to my colleagues, such as my senior manager, who were unfamiliar with the jargon and practical implications. For the second workshop, I made sure to reach out to audience members if I felt they seemed to be struggling to understand and utilised relevant real-world examples.

Feedback was very positive – my manager and Grade 7 specifically noted they found the material clear and accessible due to my use of real-world examples and analogies, despite their initial doubts. My technical workshops were also well-received for their understanding of the intricacies of relevant legal precedent.

**Teamwork and Motivation**

During my internship with the Department for Work and Pensions’ Horizon Scanning team in summer 2024, I was tasked with assessing the long-term impact of developments in DRPE on the FED division.

To produce accurate horizon scans, I needed to engage with a range of internal and external stakeholders, including our in-house legal team, data analysts, colleagues, and cross-departmental teams working on related topics, such as the Smart Data team in the Department for Business and Trade (DBT).

At first, I held internal informal meetings with colleagues on my team, to understand the existing state of research and their technical knowledge on related topics, such as Web3 and stablecoin innovations. I then expanded outward, communicating with departmental economists to understand the cost benefits associated with Third Party Data Gathering legislation. Finally, I held meetings with teams helping to rollout Smart Data in the Department for Business and Trade. I incorporated their insights into my own policy recommendations, maintained an open line of communication and invited groups to my final research workshops to ensure their findings were reflected accurately.

By combining expertise across teams and departments, my research had broad relevance and accuracy. My manager and Grade 7 praised the clarity of my delivery in my non-technical workshops, particularly how I translated technical topics into policy recommendations for the whole FED division. I also learned how to engage a range of cross-department stakeholders and interpret their specific data streams.

**Planning and Organisation**

When I started my internship at the Department for Work and Pensions (DWP), the general election was just three days away. As a result, the policy landscape was quickly changing and there was a need to keep the Fraud, Error and Debt (FED) division informed on key developments.

Alongside work on my main research project, which was forecasting how Data Regulation, Privacy, and Ethics (DRPE) would impact FED, I was tasked with writing short explainers on new policy developments, such as the King’s Speech, the Chancellor’s maiden speech, and several think tank papers.

I discussed with my manager how to handle these new priorities – we added flexibility into my project and workshop deadlines so that I could dynamically respond to new requests as they arose. When different FED teams requested a specific paper analysis, I communicated closely with them to deliver concise and relevant summaries. I often drew on my economic expertise to highlight particular issues or inaccuracies in papers, but where necessary, I liaised with subject-matter experts to clarify technical terms and my interpretations. I made sure to proactively update these teams on my progress throughout the day and when multiple explainers were needed at the same time, I triaged based on time-sensitivity.

The FED division found the explainers very helpful, particularly during a high-volume policy week. Several of the teams who had requested analyses responded positively, and my manager commended my ability to balance long-term research with short-term deliverables.