



Economic Society of South Africa

2025 Centenary Conference Abstracts

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Parallel Session A1: DataFirst Special Session: In Pursuit of Precision: Honouring Martin Wittenberg's Legacy – Research on Survey Measurement and Plans for DataFirst

Professor Martin Wittenberg, 1962-2024

Taryn Dinkelman, Andrew Kerr, Jesse Naidoo

Martin Wittenberg made major contributions to empirical social science in South Africa. We discuss some of his academic contributions.

The Study of Household Dynamics Using Health and Demographic Surveillance System Data

Martin Wittenberg, Mark Collinson

It is important to understand the dynamics of households in South Africa because they are a fundamental social unit that provide a foundation for health and economic well-being, social support, and educational attainments. Several social, demographic and economic forces put pressure on households and influence their dynamics. Longitudinal data on household composition at population level are not easily found but these can be valuable in examining household dynamics. To address this challenge, Martin Wittenberg from UCT DataFirst and Mark Collinson from MRC/Wits Agincourt Research Unit led a project spanning over a decade to develop methods for analysing household dynamics using the Agincourt longitudinal Health and Demographic Surveillance System (HDSS) data. This resulted in the release of the Agincourt Household Panel dataset, currently available on the DataFirst website. Several papers were published using this dataset that describe a typology of households in rural northeast Mpumalanga, from 1992 – 2010, show how households change over time, make comparisons with national data, and show how service delivery, especially electricity access, is influenced by household dynamics. The populations studied include households in rural villages of a former “Bantustan” area, households in dwellings built by government housing programmes, and Mozambican former refugee households. These methods can be applied to other longitudinal HDSS datasets. This is timely due to the new availability of such HDSS datasets from rural and urban settings, developed by the South African Population Research Infrastructure Network (SAPRIN), funded by the Department of Science, Technology and Innovation, in partnership with several universities and other stakeholders. There is routine publication of such datasets on the SAPRIN website, and the methods described in this paper can be applied to examine household dynamics in a range of under-resourced settings.

Parallel Session A1: DataFirst Special Session: In Pursuit of Precision: Honouring Martin Wittenberg's Legacy – Research on Survey Measurement and Plans for DataFirst

Internal Inconsistencies in the 2022 South African Census: Household and Individual Mismatches

Joshua Budlender, Amy Thornton

South Africa's 2022 Census suffered from a 31% undercount and its published results required significant adjustment based on the post-enumeration survey. These published results have been subject to critical commentary. Building on this existing research, we provide new evidence of internal inconsistencies in the 10% census sample made available to researchers, which are seemingly related to different and separate treatment of individual and household-level outcomes. We identify three main data quality concerns. First, we identify a subset of households for which the weight calibration produces unusual or extreme person weights. Second, this subset of households appears highly anomalous in numerous ways, including implausible racial characteristics of individuals within these households, and implausible household-level characteristics. Third, this subset is treated very differently by the two different weighting schemes in the census data (person versus household weights), creating inconsistencies for any analysis which relates individual to household characteristics or vice versa. We suggest that these issues may have been caused by separate calibration and imputation procedures for individuals versus households, which create particularly dramatic inconsistencies in the 2022 Census because the underlying raw data is of particularly poor quality, linked to the substantial census undercount.

How Many People in South Africa Are Really Working?

Andrew Kerr, Amy Thornton, Peris Wachira

That so many people lack employment is one of South Africa's biggest problems. The main labour market survey in South Africa that is used by economists and policy makers is the Quarterly Labour Force Survey (QLFS), conducted by Statistics South Africa. But other surveys also measure employment, including the General Household Survey (GHS), also conducted by Statistics South Africa, and the National Income Dynamics Study (NIDS), conducted by SALDRU with funding from the South African presidency. In this paper we compare employment estimates across these three surveys. We show that despite very similar or even identical sample designs in some years, and identical questions about employment in many years, the GHS and QLFS produce very different estimates of total employment in South Africa. We investigate some possible explanations for this finding.

Parallel Session A2: UJ Special Session: Industrialisation and Structural Change in Africa: Emerging Issues

The Environmental Effect of Manufacturing: Evidence from Country Spatial Dependence in Africa

Santos Bila

Adoption of green technologies to foster green industrialization has become an imperative rather than a choice. While this requires mutual efforts due to spatial interactions and country dependence, the existing literature has focused on the non-spatial impact of industrialization on CO₂ emissions. The study employs a panel of about 47 African countries and time horizon covering the period between 1990-2018. Moreso, the novelty of the paper lies on the use of the Spatial Durbin Model (SDM) as well as Spatial Error Model (SEM) to investigate the spatial impact of manufacturing on environmental quality in Africa. Moreover, the study also adds to the existing body of the literature by splitting countries by the load capacity and compares the manufacturing spatial effect in countries that are biocapacity reserve and those that are biocapacity deficit. The findings reveal that: i) African countries are spatially correlated such that an increase in manufacturing in a certain country has a negative externality in countries that share borders or are spatially correlated; ii) the spatial impact depends on the biocapacity of the influenced countries. This implies that if influenced countries are biocapacity deficits, they have a greater negative impact than those with biocapacity reserves; iii) the study also found that an increase in ecological footprint in one country is linked to an increase in ecological footprint in another. From the results, we draw policy implication, which comprising the following: To maximize the impact of net zero ambition policies, neighbouring or spatially correlated countries should coordinate pro-environment policies, which should be country load capacity specific.

Structural Change in Sub-Saharan Africa: An Open Economy Perspective

Gaaitzen de Vries, Hagen Kruse, Emmanuel Buadi Mensah, Yabo Vidogbena, Kei-Mu Yi

We study the evolution of manufacturing value added shares in 11 sub-Saharan African (SSA) countries through the lens of an open economy model of structural change. Our analysis leverages recent developments in input-output tables in SSA countries. Our model allows for income effects via non-homothetic preferences, substitution and relative price effects, as well as comparative advantage and specialization effects. We calibrate our model to include each SSA country with nine other major economies for each year between 2000 and 2018. We also do a similar set of calibrations for 11 developing Asian (DA) countries. Our main results are that domestic and foreign sectoral TFP are important drivers of structural change. Trade integration over time plays only a small role. However, trade is important as a transmission mechanism of foreign productivity trends. Finally, the drivers and mechanisms of industrialization are broadly similar in low-income SSA and DA countries.

Parallel Session A2: UJ Special Session: Industrialisation and Structural Change in Africa: Emerging Issues

Gendering Structural Change and Green Transition in Africa: Implications of Transformative Policies

Gideon Ndubuisi, Elvis Koroku Avenyo, Shingie Chisoro

This paper investigates the gender-based employment implications of structural transformation in Africa, exploring how policies tailored to gender considerations can foster gender employment balance on the continent. We consider two distinct patterns of structural transformation. First, we consider structural transformation through the lens of economy-wide shifts in sectoral structures. Employing a panel econometrics method, we examine how gender-based employment gaps are affected by these broad shifts in sectoral structures and the role of policy options that could attenuate the observed effect. We found that these shifts have generally worsened gender-based employment gaps across African countries. However, countries implementing policies to enhance women's economic opportunities and social status have successfully mitigated this trend. Second, we explore structural transformation through the lens of green energy systems and transition technologies (GETT). Through a comprehensive literature review, we found that while GETT presents numerous opportunities for achieving gender-balanced employment, entrenched gendered social inequalities pose a significant challenge. As this calls for policies that subvert these social inequalities, we further examine the alignment of existing GETT-related policies in tackling this challenge, with Ghana and South Africa serving as case studies. We found that GETT-related policies in these countries simply follow the status quo, lacking the ability to generate the much-desired outcome. Accordingly, we propose a Gendered-Transformative (G-TRIP) framework to guide policy shifts necessary for achieving gender-inclusive structural transformation amid the evolving industrial landscape.

Parallel Session A3: Monetary and Forecasting

The Effects of SARB's Published Forecasts on the Market Consensus Forecasts

Pontsho Mathebula

Central banks in many countries have put more emphasis on improving their communications to the private sector agents to potentially influence their forecasts and market expectations. The purpose of this research is to analyse how the communication strategy employed by the South African Reserve Bank (SARB) affect market projections. Specifically, we investigate whether published forecasts for inflation and GDP growth by the SARB at Monetary Policy Committee (MPC) correlate with private sector updates to their forecasts for inflation and GDP growth after the MPC meeting. We construct historical monthly published forecasts from MPC meetings for the period 2001 to 2021 to correspond with monthly private sector forecasts from Reuters' market consensus. The main results indicates that SARB published forecasts have a positive and significant influences on both the inflation and GDP growth forecasts of the private sector.

Evaluating the Monetary Conditions Index with Time-Varying Weights: Insights for Policy Across Different Repo Rate Regimes in South Africa

Eugene Buthelezi

This study examines fixed versus time-varying weights in the Monetary Conditions Index (MCI) and their impact on interest rates. Using the rolling vector error correction model (RECM) and Markov-switching vector autoregression (MS-VAR) with data from Q1 2000 to Q3 2024, it was found that fixed weights offer stability but may overlook economic changes while time-varying weights enable a more responsive monetary policy. Ultimately, the time-varying MCI enhances interest rate effectiveness. In Regime 1, an increase of 1% in the constant MCI increases the repo rate by 0.10%, but this effect is insignificant in Regime 2. The time-varying MCI shows minimal impact in Regime 1, while in Regime 2, it decreases the repo rate by 0.003%, indicating potential easing by the reserve bank under restrictive conditions. Therefore, the reserve bank should consider implementing a time-varying MCI to enhance the responsiveness of monetary policy, allowing adjustments that reflect current economic conditions and improving the effectiveness of interest rate policies.

Parallel Session A3: Monetary and Forecasting

Monetary and Macro-Prudential Policy Dynamics in South Africa: Assessing Spillovers and Interactions

Kanayo Ogujiuba, Lethabo Maponya

The interaction between monetary and macroprudential policies in South Africa is crucial for financial stability, sustainable economic growth, and the welfare of its citizens. However, the interaction between monetary and macroprudential policies in South Africa presents several challenges, as these two policy frameworks often have different objectives and can sometimes conflict in terms of their implementation. Furthermore, the 2008 global financial crisis exposed the drawbacks of separating the two policies. It became evident that systemic vulnerabilities might build up even in situations where inflation was low and growth was steady, and that monetary policy alone could not guarantee financial stability. This study evaluates the effectiveness of this interaction in both the short and long term, aiming to improve policymakers' understanding and contribute to discussions on macroeconomic stability. Using the Autoregressive-Distributed Lag (ARDL) econometric model, the study examines the relationship between these policies. Model 1 shows that capital adequacy, household loans, GDP, and balance of payments significantly influence the repo rate, with rapid adjustments to deviations from equilibrium, ensuring stability. Model 2 indicates that exchange rate depreciation negatively affects capital adequacy, while GDP growth has a positive impact, with swift corrections to long-run equilibrium. The key findings emphasize the trade-offs in monetary and macroprudential policymaking. Policymakers must balance supporting credit supply with managing financial stability risks, given the significant spillovers between the two policies. Effective coordination between monetary and macroprudential policies can prevent systemic risks, reduce policy conflicts, and enhance resilience by integrating financial stability into monetary decisions. This coordination helps minimize vulnerabilities, creating a more stable economic environment conducive to long-term growth. Ultimately, the study offers valuable insights for policymakers, highlighting the importance of considering the interactions between these policy frameworks when formulating interventions to ensure a resilient and stable economy.

Prediction and Forecasting in Economics

Raymond Parsons, Waldo Krugell

Economists are wont to predict and forecast, but have struggles to maintain relevance in addressing complex, systemic economic crises. A gap has developed between data-driven insights and the larger societal narratives of for example inflation, or unemployment. We emphasise the difference between forecasting and prediction. Forecasting a technical sub-field of econometrics, but predicting is more of an "if this, then that" approach based on models of how the economy works. Understanding the difference matters for the credibility of the advice economists give (also to policymakers). This paper sets out to report the results of a survey that examines the models, or heuristics, of the economy in the minds of businesspeople.

Parallel Session A4: Topics in Macroeconomics

Effects of Monetary and R&D Policies on Inequality and Growth: The Case of South Africa

Yoseph Getachew, Richard Kima, Nyemwererai Matshaka

The paper investigates the effects of R&D and monetary policies on economic growth and income inequality using a two-agent heterogeneous household monetary Schumpeterian growth model. While fiscal policy is often employed to combat high levels of inequality by redistributing resources, it typically comes with unintended consequences. For instance, taxes and social grants aimed at promoting equity often lead to efficiency loss through distorting individual efforts and savings. Given these challenges, this research explores alternative channels that are not traditionally used to address inequality. The study, particularly, investigates the impact of monetary policy and research and development (R&D) policies on growth and inequality. We develop a monetary quality ladder growth model that accounts for household heterogeneity. By incorporating both monetary and R&D policy in two-agent heterogeneous household models, we can examine the redistributive effects of these policies in the presence of R&D-driven growth. The model is then calibrated to the South African economy, an upper-middle-income African country famous for its consistently high level of inequality. Among the findings, higher nominal interest rates reduce innovation and economic growth while exacerbating inequality. In contrast, stronger patent protection fosters innovation and growth but leads to a greater concentration of wealth among capitalists. These findings highlight the trade-offs policymakers face when designing interventions to promote growth and reduce inequality.

Estimating the Macroeconomic Costs of Power Outages in South Africa

Richard Kima, Kabelo Makhanya, Malope Mampholo, Abrams Tagem

We assess the full-scale macroeconomic costs of power outages in South Africa (commonly referred to as "load shedding") within a structural dynamic macroeconomic model with a detailed production sector along the lines of Fried and Lagakos (2023). In the model, power outages create idle resources that reduce the scale of existing firms and decrease the entry of new firms, leading to lower productivity. We calibrate the model to the South African economy and use it as a laboratory for various experiments, including the estimation of the short- and long-run effects of eliminating power outages, as well as an evaluation of their costs. Our preliminary findings suggest that the monetary costs of unadjusted load shedding for the South African economy were approximately R 911 billion in 2022, that is, R 632 billion in real terms, representing an output loss of 13.7%. When we control for weekends, holidays, and non-working hours, the nominal costs drop to R 162 billion (i.e., R 112 billion in real terms), corresponding to an output loss of 2.4% and an adverse impact on GDP growth of 2.5 percentage points.

Parallel Session A4: Topics in Macroeconomics

The Impact of Current Account Balance on Economic Growth in South Africa *Nkosinathi Monamodi*

This study investigates the impact of South Africa's current account balance on its economic growth from Q1 2015 to Q4 2022 using Auto Regressive Distributed Lags (ARDL) technique. This study incorporates qualitative variables like COVID-19 to understand its effect on the South African current account and economic growth rate. Generally, the results show that the South African current account deficit impacted economic growth in both the long and short run. COVID-19 also affected the current account significantly in both the long and short run, thus causing more deterioration on the South African current account and subsequently affecting the economic growth rate negatively. This study recommends more competitive export promotion and import substitution by investing in and developing domestic productivity. This study also recommends an acceleration of the tabled COVID-19 recovery initiatives through an alliance between the government and private sector.

Navigating The Impact of Technological Innovation on Unemployment in BRICS Countries

Sithelo Vincent Mngomezulu, KD Ilesanmi, N Nxumalo

This research investigates the impact of technological innovation on unemployment rates in the BRICS countries (Brazil, Russia, India, China, and South Africa) between 2011Q1 and 2023Q1. The study aims to answer the traditional question of whether technological advancement creates or destroys jobs, with a particular focus on the inclusion of South Africa in the BRICS group. Specifically, the study addresses three key research questions: 1) What are the determinants of unemployment in BRICS, now that South Africa is included? 2) What is the impact of technological advancement on unemployment in BRICS countries? 3) In what ways can these impacts be addressed? The study adopts a positivist research paradigm, utilizing quantitative methods to analyze the relationship between technological advancement and unemployment. Utilizing quarterly secondary data, the study employs unemployment rates as the dependent variable, with patent applications (PA) serving as the independent variable to represent technological innovation. Additional control variables, such as gross domestic product per capita and inflation, are included to account for other economic factors influencing unemployment. Panel data analysis is employed to evaluate the empirical relationship between endogenous and exogenous variables, incorporating both time-series and cross-sectional data. The panel Autoregressive Distributed Lag (ARDL) model is used to address endogeneity issues and differentiate between short- and long-term relationships among variables. This research contributes to the ongoing debate on the future of employment, particularly in emerging economies, by providing insights into how technological advancements affect unemployment in the BRICS countries. The study also offers critical perspectives on how to address these impacts, supporting policy decisions, workforce adaptation, and innovation promotion. Furthermore, the inclusion of South Africa enhances the analysis, offering a comprehensive view of the dynamics within the BRICS group. The findings contribute to achieving Sustainable Development Goals (SDGs) 1, 4, 8, 9, and 10 by addressing unemployment challenges in a technologically advancing world.

Parallel Session A5: Agriculture, Trade and Prices

Liquidation Bias in SAFEX-listed White and Yellow Maize Futures

Ayesha Sayed, Christo Auret

This study tests for the presence of liquidation bias on the South African Futures Exchange (SAFEX) for white and yellow maize, where delivery points are initiated exclusively by sellers. Liquidation bias, observed in commodity futures markets, compensates buyers for the heightened delivery-related risks they bear as contract expiration nears. To test for liquidation bias, we employ an event study methodology, capturing daily price spreads between the nearby and closest delivery contracts. The methodology includes regression analysis to investigate how changes in open interest impact spreads, hypothesising that a reduction in open interest may amplify price differences, indicating a premium. In South Africa, weather variability introduces additional uncertainty to maize futures prices, making the liquidation bias particularly pronounced. As delivery nears and open interest declines, buyers become increasingly reluctant to maintain long positions due to the compounded risks of physical delivery and potential supply shocks caused by adverse weather conditions. Furthermore, the study examines the influence of market conditions—contango and backwardation—on the magnitude of liquidation bias, providing a nuanced understanding of how delivery dynamics interact with environmental risks. Our findings underscore the economic value of timing flexibility in futures contracts, highlighting how delivery options influence market pricing and behaviour. The results provide significant insights for SAFEX participants navigating delivery risks and offer guidance for regulators aiming to enhance market liquidity and efficiency.

The Role of Rebates on Essential Foods in the Context of Supply Shocks

Andre Frauenknecht, Amy Wagner, Cassandra Pengelly, Paul-John Moses

Over the last decade, the International Trade Administration Commission of South Africa (“ITAC”) has implemented a variety of trade tools, including a range of duties in the South African poultry industry. This stems from a concern with respect to the impact of imports on the viability of local producers. Thus, these trade tools have sought to balance the needs of South African households (which rely on poultry as an important and affordable source of protein), while also protecting the domestic industry from the adverse effects of high levels of (often dumped) imports.

In 2023, there was an outbreak of Highly Pathogenic Avian Influenza (“HPAI”) that raised concerns with respect to potential domestic poultry shortages. A key question that emerged was whether rebates should be imposed on existing trade duties in order to (a) stimulate imports, and in turn reduce any potential shortages, and (b) ensure poultry remained available to South African households at prices that would leave consumers no worse off than in the absence of such a supply shock. Indeed, promoting security of supply remains a valid and important consideration in the face of such supply shocks. However, if not carefully structured and implemented, a rebate has the potential to disrupt the equilibrium that existing trade tools seek to achieve between balancing the needs of consumers and producers alike. Hence, a rebate in this setting presents important economic trade-offs that need to be understood and assessed. This paper unpacks the key factors that should be considered when assessing these trade-offs including: (i) the likely extent and timing of the shortage in question, (ii) the consideration of counter-strategies by local producers, (iii) the extent to which imports are likely to expand in the absence of a rebate, and (iv) the potential impact on local consumers and producers.

Parallel Session A5: Agriculture, Trade and Prices

How ENSO Events Shape Maize Price Transmission Between the US and South Africa

Anmar Pretorius, Mariëtte Geysler

Climate change manifests itself in rising temperatures across the continent and affects the El Niño-Southern Oscillation (ENSO) via changing sea surface temperatures and atmospheric circulation. This affects precipitation and temperature patterns, especially during El Niño and La Niña cycles, with South Africa normally experiencing drier conditions during El Niño events. These weather anomalies influence crop yields and food prices. Spatial price transmission indicates to what extent prices of agricultural goods are linked across different geographical areas and how quickly price signals from one area are passed on to another. While numerous studies explore spatial price transmission between various countries, there is a gap in the literature pertaining to price transmission between the US and South African maize markets during ENSO events.

We therefore investigate how ENSO related events impact maize price transmission between the Chicago Mercantile Exchange and the Johannesburg Stock Exchange from 2005 to 2024. Maize prices from these two sources are included in the analysis alongside ENSO data from the National Oceanic and Atmospheric Administration. Four empirical techniques are employed: correlation analysis, tests for cointegration, error correction models as well as the calculation of an Index of Market Connection (IMC). The IMC adds valuable information to the results from standard time series analysis and is widely used in similar studies. Results confirm the dominating impact of US maize prices on South African prices, but also how this relationship changes based on the nature of the ENSO event. There is some indication of lower levels of integration and higher levels of price diversion during El Niño periods. The findings underline the potential influence of ENSO events on food security, trading, and hedging strategies; providing market participants with actionable insights into mitigating the financial risks associated with climate-induced price risk.

Parallel Session A5: Agriculture, Trade and Prices

Investigating the Long-term Sustainability of South Africa's Proposed Large Scale Sugarcane-based Bioethanol Industry

Lungani Mvelase, Stuart Ferrer

The production of biofuels can have positive socio-economic and environmental impacts. However, for the industry to be sustainable, its impact on food and water security are also important considerations in the evaluation of policies designed to promote biofuels. There is limited research globally, and especially in Africa assessing the sustainability of the biofuels industry. The objective of this study was to assess the impact of bioethanol production within Water-Energy-Food (WEF) nexus context and the implications on the real economy. The long-term economic forecasting methodology (LTEFM) was used to project long-term water demand by the South African bioethanol industry. The impact on food prices was examined using the Leontief price impact model based on the 2018 National Social Accounting Matrix (SAM). Overall production of bioethanol from sugarcane was projected not to demand significant water, the feedstock production stage had a large water demand relative to feedstock processing stage. The impact on most food commodities was negligible (ranging between 0.01% to 0.02%), except for sugarcane (an estimated impact of 5.91%) and processed products (0.03 to 0.18%). The increase in the price of sugarcane, sugar and processed products was estimated to increase the Consumer Price Index (CPI) with low-income consumers experiencing the larger increase, increase the producer price index (PPI) and reduce exports. To minimise the unintended socio-economic impacts this study recommends the production of sugarcane-based bioethanol to take place in areas with abundant land and water resources to then be exported to land scarce and relatively low rainfall areas.

Parallel Session A6: Recreation and Regional Development

Learning City of Richards Bay Local Economy: The Case of Umhlathuze Local Municipality

Lorrian Greyling, Kehinde D. Ilesanmi, Thobani Gwala

Smart cities can be defined as tech innovation and technological advancement harnessed by digital and data-driving solutions that seek to enhance the quality of life. Smart city initiatives drive optimization into smart infrastructure, interconnected tech systems such as climate grids, and energy grids. This study is motivated by major amplified smart city barriers and challenges faced by the city of Richards Bay and uMhlathuze local municipalities, such as growing urban density, rising crime, ineffective management systems, poor infrastructure, and rising unemployment.

This study analyses challenges faced by the city of uMhlathuze local municipality and assesses the stakeholder's readiness toward the adoption of the six smart city ambitions and pillars based on international best practices. The mixed methods where the structural equation model (SEM) analysis was adopted to estimate latent and manifested variables and the Ordinal logistics model to estimate categorical variables, and an inductive qualitative approach to gather diverse perspectives toward the adoption of smart city ambitions.

A sample size of 384 was determined using a 95% level of confidence, and stratified sampling was used to stratify 14 regions for surveys. Adopted the purposive sampling approach to gather key informants' insights using expert interviews to assess their readiness towards the adoption of smart city projects.

The finding implies that challenges such as rising urban density and unemployment motivate crime. However, the adoption of smart city ambition such as smart economic and smart governance pillars, may lead to sustainable local economic growth that could create more jobs in response to pressing and rising unemployment. Furthermore, the study findings further indicated that smart collaboration powered by ICT, IoT between public and private sectors could enhance efficiency and resilience.

Parallel Session A6: Recreation and Regional Development

Applying the HRV Framework to Local Economies: Case Study of Two Municipalities

Edward Blight

The Hausmann, Rodrick, Velasco Growth Diagnostic Framework (HRV framework) is a well-established method employed in development economics. The framework identifies the binding constraints of a national economy. Binding constraints are not relegated only to national economies. Binding constraints can be identified at the local economic level of analysis, specifically at the level of municipalities. This paper will adapt the HRV framework so that the units of analysis are municipalities and their respective economies. Two municipalities were selected for analysis, namely the Cape Agulhas Municipality in the Western Cape province and the Madibeng Municipality in the North West. Two of the categories of binding constraints found the HRV framework were selected for analysis, namely poor geography and bad infrastructure. Next, a systematic literature review, using both academic and grey literature, was completed to identify binding constraints from both municipalities from the category of poor geography and bad infrastructure. This study is part of a broader study towards doctoral research.

South Africa Gambling Industry Socio Economic Impact Study: Evidence from KwaZulu-Natal Province

Motlatjo Moholwa, Elton Chinyanga

The gambling industry can lead to both positive and negative impacts to the society. A well-founded understanding of the gambling industry operations and socio-economic implications is therefore an imperative as the industry continues to grow. The study adopted the Socio-Economic Impact of Gambling (SEIG) Framework to assess the gambling industry's socio-economic impact in South Africa. The data sets used in the study included primary data collected from the households through a household survey (November 2023) and secondary data (2018-2023 period) from key industry stakeholders. The results of the study indicated that Gambling Participation Rate, Gambling Propensity and Gambling Problem in the province were estimated at 80%, 1.01% and 33%, respectively. The incentive for earning an extra income was the driving force behind participation in gambling activities. Additionally, the results revealed that age, gender, education level, gambling mode and location are major determinants of gambling participation and gambling problem. Gambling participation also has the greatest expenditure displacement effect on household necessities and savings. The implication of the results is that high expenditure displacement effect from purchase of household necessities support the negative impact of gambling on poor households whose main expenditure is on food. Based on the results of the study, it is recommended that a targeted programme aimed at empowering school children about the pros and cons of gambling as well as the dangers of under-age gambling; amplification of responsible gambling programmes; and law enforcement and industry compliance enhancement to deal with illegal gambling in South Africa. These will go a long way in resolving problem gambling and associated challenges as well as improving the growth and performance of the gambling industry.

Parallel Session B1: PPS Special Session: Perspectives on Non-Communicable Disease and its Risk Factors, Economic Impact, and Economic Policy Responses

The (Un)conditional Distribution of Alcohol Consumption in South Africa: Accounting for Zeroes, Participation and Binging

Steve Koch, Naiefa Rashied

The un/conditional distribution of alcohol consumption is expected to include a mass of zeroes, as a large share of the population does not purchase or consume alcohol. Therefore, when examining its consumption, researchers tend to apply two-part models capturing the participation margin, and allowing for the separation of behaviours by type. Using the National Income Dynamics Study, which contains relevant information related to alcohol consumption behaviours as well as purchases, we aim to extend this analysis in numerous dimensions.

Initially, though, a number of issues need to be overcome to examine the distribution of alcohol consumption using these data. The first is that the consumption data is collected at the household level, preventing us from examining the distribution at the individual level. The second is that households, given our ability to individually define drinking status, will contain some combination of non-drinkers, drinkers and binge drinkers, such that household level drinking status “categories” are not obviously mutually exclusive. The third is that, even if household categories can be exclusively defined, categorical models are known to predict poorly. The fourth is that drinking status, and more importantly for this analysis, drinking status within a household unit, is likely to be endogenous.

Our analysis is underpinned by the goal to estimate either an average treatment effect of a drinker or binger or marginal treatment effect of an additional drinker and/or binger on total household alcohol consumption. Initially, we ignore any concerns related to endogeneity, estimating both parametric and nonparametric models of alcohol expenditure as a function of the number of drinkers, and bingers in the household. We compare these to recursive models of expenditure as a function of household drinking status, and, if possible, we attempt to capture ‘selection’ into drinking status and the household, to address endogeneity concerns.

Parallel Session B1: PPS Special Session: Perspectives on Non-Communicable Disease and its Risk Factors, Economic Impact, and Economic Policy Responses

Modelling the Potential Impact of a Tax on Fruit Juice in South Africa: Implications for the Primary Prevention of Type 2 Diabetes and Health Financing

Micheal Kofi Boachie, Karen Hofman, Susan Goldstein, Evelyn Thsehla

Background: South Africa is experiencing a persistent growth in non-communicable diseases. Diabetes is among the top ten causes of mortality, especially among women. To reduce obesity rates and the incidence of diabetes, South Africa introduced a tax on sugar sweetened beverages (also known as the Health Promotion Levy (HPL)) in 2018. This study models the potential health and economic impact of taxing fruit juices.

Methods: This study uses extended cost-effectiveness analysis technique. Data on price elasticities, healthcare cost, income, fruit juice consumption were sourced from the literature and representative national surveys. The potential impact of the tax on diabetes incidence, prevalence, mortality, and financial benefits were estimated for different income groups.

Findings: We estimate that a 20% tax on fruit juice would avert 156,640 incident cases of type 2 diabetes mellitus over 20 years. Averted deaths from diabetes would average 2000 deaths per quintile (for quintiles 1- 4) and about 2800 in quintile 5. The improved health resulting from averted incidence and deaths will reduce overall healthcare expenditure by R7.5 billion over 20 years. Government will also save about R300 million in subsidizing diabetes-related healthcare cost; and would raise R8.6 billion in tax revenues per annum. The upper two quintiles would bear the highest tax burden. Out-of-pocket expenditure savings will be R303 million and a financial risk protection (insurance value) of R4.6 billion over the 20 years.

Conclusion: We conclude that an HPL that significantly raises the retail price of fruit juices would reduce consumption and diabetes-related morbidity and mortality. The tax will also provide significant financial benefits in the form of reduced healthcare costs for both government and households as well as providing financial risk protection to individuals. Health taxes are win-win policies that improve population health and generate revenue for governments to fund public health services delivery.

Parallel Session B2: Special Session: Gender Inequality Over the Life Course

Fixing the Leaky Pipeline: Insights from a Randomised Trial on Gender Equity in Economics

Antoinette Van der Merwe, Carike Claassen, Debra Shepherd, Marlize Van Staden

This study investigates the persistent underrepresentation of women in Economics, a phenomenon described as the "leaky pipeline," which sees female participation decrease at each successive academic and professional level. While most research has focused on Global North contexts, this study addresses a critical gap by examining the issue in a Global South setting.

Using a mixed-methods approach, the study integrates insights from exploratory focus groups with experimental data from a large-scale randomised controlled trial (RCT) conducted across three South African universities. The RCT involves approximately 1,000 final-year students and tests an intervention aimed at encouraging postgraduate studies in Economics – namely providing information about diverse career opportunities. This information is provided via video interviews with female economists. Treatment videos highlight economists in development, behavioural, and environmental fields, while control videos feature health professionals.

Preliminary observations suggest that exposure to female role models may play a role in shaping students' career perceptions, but the nuances of these impacts are still being analysed. Early findings also highlight gendered differences in how students interpret and respond to interventions, with potential implications for designing more inclusive educational strategies.

This study contributes to the global discourse on gender equity by addressing the underexplored dynamics of Economics education in the Global South. By focusing on South African students' experiences, the findings offer insights into practical approaches for reducing gender disparities and fostering greater diversity in the Economics profession.

Gendered labour market outcomes among South African technical and vocational education and training (TVET) completers

Tamaryn Friderichs, Michael Rogan

South Africa's post-school education and training (PSET) system plays an important role in addressing historical inequalities and preparing youth for the labour market. In line with international trends, South African Technical and Vocational Education and Training (TVET) colleges have seen rising female enrolment, including in traditionally male-dominated fields like Engineering. This study examines whether women's increased participation in TVET programmes translates into equal labour market opportunities. Using administrative enrolment data and a nationally representative tracer study of TVET completers, the findings show that female completers face significantly higher unemployment rates than men, unrelated to their overrepresentation in Business Studies or Services programmes. Additionally, women earn 22% less than men, even after accounting for study choices and qualification levels. While challenges remain in ensuring gender parity, the increasing presence of women in male-dominated fields signals progress. Efforts must focus on translating these gains into equitable employment outcomes.

Parallel Session B2: Special Session: Gender Inequality Over the Life Course

Examining Intra-Couple Wealth Inequality in South Africa

Daniela Casale, Adeola Oyenubi

Despite widespread recognition that assets are important for economic wellbeing and women's empowerment, there is limited reliable information on gender wealth gaps. This is due to the lack of individual-level data on wealth (i.e. assets less debt). When surveys do collect information on wealth, they typically do so at the household level, even though most assets and debts are held by individuals. Only a handful of studies measure the gender wealth gap using individual-level data (e.g. Sierminska et al 2010; Doss et al 2011; 2014; Anglade et al 2017; Hillesland 2019), and even fewer examine the wealth gap between men and women within households (Grabka et al 2015; Malghan & Swaminathan 2017). In earlier work (Casale & Oyenubi 2024), we used unique individual-level data from the 2017 National Income Dynamics Survey (NIDS) to analyse the gender wealth gap in South Africa. NIDS included a detailed wealth module in which each adult in the household reported on the value of their own assets and debts, as well as their share in assets held jointly. We found a substantial gender wealth gap (35% at the mean), much greater than the gender earnings gap (24%), and much larger among married/cohabiting individuals than among those who had never married. In this paper, we extend this work using the matched data on spouses to examine wealth inequality within couples. Our findings suggest intra-couple wealth inequality is substantial in South Africa: women's net worth is lower than their partner's in 69% of couples, it is higher in 28% of couples, and it is equal in only 3% of couples. Women's mean share of total couple income is 39%. We also examine the demographic, labour market and household characteristics associated with larger intra-couple gaps, and we reflect on the implications of our findings for women's bargaining power and long-term wellbeing.

Parallel Session B3: Trade Integration and Competitiveness in Africa: Evidence from Policy and Practice

Evaluating South Africa's Role in African Pharmaceutical Trade: An Analysis of Comparative Advantage and Trade Complementarity

Nwabisa Malimba, Tsitsi Effie Mutambara, Juniors Marire

Many African countries lack adequate pharmaceutical manufacturing capabilities, with South Africa and a few other notable exceptions. Consequently, studies focusing on the trade dynamics and comparative advantage within the South African pharmaceutical industry are limited and often just highlight the challenge of import dependence. This study seeks to assess South Africa's comparative advantage in pharmaceutical production and its role in the African pharmaceutical trade. By determining the country's comparative advantage, the study can identify pharmaceutical products that are produced efficiently, leading to potential specialization in South Africa as well as in selected African countries. Additionally, the study evaluates South Africa's alignment in pharmaceutical trade with other African countries, aiming to identify the potential for increased pharmaceutical exports and intra-African trade.

Using the Normalized Revealed Comparative Advantage Index (NRCA), this study examined South Africa and six selected African countries from 2001 to 2022. The findings indicate that out of six product categories, South Africa experiences a comparative disadvantage in HS3004 while showing comparative advantage neutrality in the remaining product categories HS3001, HS3002, HS3003, HS3005, and HS3006. However, the across-commodity analysis (within NRCA) revealed that South Africa efficiently produces products in categories HS3005 and HS3001 than other products. Furthermore, the study employed the Trade Complementarity Index to identify trade synergies between South Africa and the selected African countries in the pharmaceutical sector. The results demonstrate a strong trade complementarity between South Africa and its African trading partners, providing a good basis for the AfCFTA to facilitate intra-African pharmaceutical trade.

Parallel Session B3: Trade Integration and Competitiveness in Africa: Evidence from Policy and Practice

Quantifying Tariff Revenue Losses from the African Continental Free Trade Area (AfCFTA)

*Lawrence Edwards, David Fadiran, **Godfrey Kamutando**, Matthew Stern*

This paper presents estimates of customs revenue losses for 45 African countries associated with the phase-down of tariffs under the African Continental Free Trade Area (AfCFTA). This paper contributes to the available research in several ways. It is the first study to estimate the potential revenue implications of the AfCFTA based on the actual Provisional Schedule of Tariff Concessions (PSTCs) submitted by African States or regional groupings to the AfCFTA Secretariat as of March 2023. The paper uses a consistent partial equilibrium model, namely the SMART model, to calculate the revenue implications of tariff reductions under the AfCFTA for all 45 countries. This enables a comparative analysis of the revenue effects across a much wider range of African countries than has been the case in the available literature. Further, the study tests the sensitivity of the customs revenue outcomes to the granting of duty rebates that are widespread across African countries, and incomplete preference utilisation rates that arise from challenges in complying with rules of origin requirements. The results show that the removal of tariff barriers under the AfCFTA will be effective in raising and diversifying intra-Africa imports. The customs revenue losses after the phase-down of tariffs are likely to be minor, making up less than 0.2 percent of total government revenue for most African countries. Not all countries are affected equally. Overall, the results indicate that for most African countries, revenue losses should not be a major obstacle towards the commencement of trade under the AfCFTA. These findings also serve as an important input into the design of the proposed AfCFTA Adjustment Fund, which is intended to support those countries that are most vulnerable to revenue shocks.

Parallel Session B3: Trade Integration and Competitiveness in Africa: Evidence from Policy and Practice

Quantile Gravity: Economic Integration Agreements, Less Developed Economies, and Least Traded Goods

Jeffrey Bergstrand, Matthew Clance

Gravity-equation estimates of the elasticity of trade with respect to bilateral trade costs - or of coefficient estimates of binary variables for the presence or absence of economic integration agreements (EIAs) -- are central to determining quantitatively economic welfare impacts of trade-policy liberalizations. Despite decades of study, trade economists have largely focused on conditional mean estimates of a (constant) trade elasticity or of an EIA dummy variable's (common) effect in a "gravity-equation" specification, recently using three-way fixed effects and using Poisson pseudo maximum likelihood (PPML) to avoid the heteroskedasticity bias from "Jensen's Inequality." Yet, several recent papers demonstrate that the (partial) effects of a trade liberalization likely vary across the distribution of trade flows. However, this newer literature still relies on using "global" features of the distribution. In this paper, we initially provide a novel panel-data quantile regression approach to estimating EIAs' partial effects across (conditional) quantiles that avoids Jensen's Inequality, avoids the incidental parameters problem associated with three-way fixed effects, and allows zeros. Importantly, since quantiles are inherently local measures, they are insensitive to outliers. To motivate the potential economic usefulness of our approach, we examine two distinct "cases." First, we show that the partial effects of EIAs on trade flows are considerably larger for developing countries' exporters across quantiles. Second, using quantile regressions across a broad swath of country-pairs at the disaggregated trade-flow level, we provide systematic evidence that supports the Arkolakis (2010) proposition; trade-flow growth effects of any type of EIA are larger for goods with lower initial sales.

Parallel Session B4: Public Expenditure

The Relationship Between Government Spending on Education and Economic Growth in South Africa

Tshepang Selebano, Realeboga Mmarakau Mahapa

Educational attainment is a key driver of a country's economic and social well-being, as it provides the skills and knowledge needed to produce goods and services. In South Africa, education receives a significant share of government spending. However, this substantial expenditure does not align with the country's GDP growth rate. This study examines the relationship between government spending on education and economic growth in South Africa from 1993 to 2023, employing the ARDL model to assess both long- and short-run relationships, alongside the Granger causality test to determine the direction of causality.

The findings reveal a statistically significant negative relationship between government education expenditure and economic growth in both the long and short run. Additionally, the results indicate that government spending on education does not cause economic growth. Instead, causality flows from economic growth to education expenditure, as well as to other variables considered in the study, including gross fixed capital formation and terms of trade.

The study concludes that government education spending has an unfavorable impact on economic growth in South Africa. It recommends a thorough review of how educational funds are allocated, ensuring they support programs that yield effective outcomes. Furthermore, increasing accountability and transparency is essential to reduce poor management and corruption in education funding.

Dynamic Interplay Between Government Expenditure and the Private Sector in South Africa's Economy: Crowding-In Versus Crowding-Out Effects

Bongumusa Prince Makhoba

This paper aims to empirically analyse dynamic interplay between government expenditure and private sector investment in South Africa's economy. The study adopted a Vector Autoregression (VAR) approach to examine the dynamic relationships between government expenditure and private sector activities using annual time series data over the period 1960-2021. Furthermore, the study estimates single equation methods which include the Dynamic Ordinary Least Squares (DOLS), Fully Modified Ordinary Least Squares (FMOLS), and Canonical Cointegrating Regression (CCR) model to analyse the long-run cointegrating relationship between government expenditure and private sector investment. The empirical findings provide evidence of a positive interplay between government expenditure and private sector investment, implying that an increase in government spending crowd-in-private investment in South Africa's economy. The DOLS, FMOLS, and CCR further suggested that GDP growth have a significant effect on private sector investment, thus implying that an increase in economic activities promote private sector investment in South Africa. The impulse response function I(RF) revealed that a private investment responds positively due to the innovative shocks of government expenditure and GDP growth in the economy. The findings of the study suggest that the policymakers ought to channel significant expenditure towards productive sectors that would enhance economic activities, crowd-in private investments with strong cooperation with the public sector and subsequently spur job opportunities and growth in the economy.

Parallel Session B4: Public Expenditure

Assessing the Efficiency of Public Health Resourcing in South Africa: A District-Level Analysis Using Data Envelopment Analysis

Fouche Venter, Anja Smith

The rise in debt over the past 15 years has placed debt consolidation at the forefront of fiscal policy. Despite efforts to protect the social wage budget, this has become increasingly challenging. Over the next three years, the health budget is projected to grow by only 4.7%, which falls short of inflation-adjusted per capita terms and typical health inflation levels. Therefore, it is urgent to prioritise healthcare expenditure efficiency, ensuring optimal outcomes within the available resources. This study evaluates the efficiency of South Africa's public health sector at the district level, an area less explored compared to provincial and facility-level assessments. Using Data Envelopment Analysis (DEA), district efficiency scores are generated from a dataset constructed from the District Health Barometer for 2016 and 2022. Inputs considered are healthcare expenditure, health personnel, and public hospital beds, while outcomes include infant, maternal, and neonatal mortality rates. The initial DEA results show a decline in average district efficiency scores from 0.6 in 2016 to 0.57 in 2022. This indicates that, in 2022, health resources could have been reduced by 43% without affecting outcomes if all districts achieved the efficiency level of the most efficient district. However, these findings do not account for external factors affecting efficiency, necessitating a second-stage analysis. In the second stage, a Truncated Panel Tobit regression examines how socioeconomic conditions, institutional characteristics, and district-level variables influence efficiency scores. Data from the 2016 Community Survey and 2022 National Census will be utilised. Adjusted scores, using the regression results, provide insights into resource inefficiencies while considering district specific circumstances. Identifying districts with significant inefficiencies can inform targeted interventions and promote best practices, contributing to policy reforms and discussions on achieving universal health coverage under South Africa's proposed National Health Insurance framework.

Parallel Session B5: Transport Economics

CGE Analysis of Road Infrastructure and Funding Model Reforms

Jessika Bohlmann, Heinrich Bohlmann, Margaret Chitiga-Mabugu, Getrude Njokwe, Mark Zuidgeest, Pine Pienaar, Wessel Pienaar

As climate change continues to unleash extreme weather events and long-term repercussions, the urgency for global action escalates. A concerted effort towards a green transition is underway worldwide, aiming to curtail our collective environmental impact. Among the sectors identified in the Paris Agreement for emission reduction, the transport sector stands out prominently. Yet, the transport sector remains indispensable for a nation's development and efficient logistics management. This dual role necessitates a balance in implementing policies aimed at curbing transport-related carbon emissions whilst keeping the transport sector efficient and sustainable. South Africa has made a significant commitment to mitigate carbon emissions by pledging to reduce carbon emissions from transportation by 5% by 2050, with a specific focus on road transport, the primary contributor to the country's transport sector emissions.

Understanding the implications of South Africa's commitment to reshaping its transport system in line with the 2015 Paris Agreement is paramount. This understanding extends to crucial aspects such as road taxes, alternative fuels and infrastructure, and road funding; the main focus of this research.

This study delves into several critical research questions, including exploring alternative road funding models based on road user charges, enhancing carbon taxes for road use, and optimising the uptake of alternative fuels and related infrastructure. Additionally, it examines the intricate interplay between road funding models, carbon taxes, and alternative fuels. To comprehensively address these questions, the study employs a Computable General Equilibrium (CGE) model. This model allows for a thorough examination of the economy-wide impacts of various road funding mechanisms, providing invaluable insights into the potential pathways towards a sustainable transport system.

Parallel Session B5: Transport Economics

Cycling Networks in Urban Areas: A Longitudinal Study of New Zealand's Major Cities

David Dyason, Clive Coetzee, Ewert Kleynhans

As cities grow, they increase in complexity, requiring the urban environment to adjust and respond in ways to effectively use land resources. In order to support city development, cycling is generally regarded as an alternative to motorised transportation that contributes to sustainable cities. In many cities worldwide, a common concern associated with investing in cycling infrastructure is the cost-use nexus. In other words, does the investment and economic cost associated with developing this infrastructure influence its use? This study considers the three largest cities within New Zealand namely Auckland, Christchurch and Wellington and use daily cycling counts that captures cycling volumes on designated cycling routes. New Zealand has historically had a high share of personal motor vehicle ownership and use, and the development of new cycling networks is often met with opposition from local businesses and property owners.

We use a Geographically Weighted Regression which includes a continuous longitudinal dataset stretching between January 2018 and June 2024 with daily cycling counts to assess bicycle volumes at a country and city level. In general, these results indicate that cycling volumes for utilitarian use (that is to get to work) have a lower sensitivity to changes in distance compared to variations in weather conditions. At a city level, there are notable intercity differences in weather sensitivity. The results suggest that, although distance and precipitation have general effects, local factors, such as infrastructure quality, topography, weather adaptation measures and cultural attitudes toward cycling, play a critical role in modulating these relationships. The findings highlight the importance of city size and localised factors when planning urban cycleways in cities which will influence the transition from motorised to non-motorised transport.

Parallel Session B5: Transport Economics

An Assessment of Port Authority Pricing in South Africa

Simóne Huskisson, Mihalis Chasomeris, Stephan Krygsman

Transnet National Ports Authority (TNPA) is the port landlord and provides infrastructure and marine services at the eight commercial ports in South Africa. The Ports Regulator of South Africa (PRSA) exercises price regulation over TNPA tariffs. In 2015, there was an agreement between the PRSA and the TNPA to implement a 10-year tariff strategy aiming to reduce cross-subsidisation amongst commodities and groups of port users. This study offers a critical examination of the tariff structure's evolution and evaluates progress towards achieving the goals set by the PRSA's 10-year tariff strategy. Examining the PRSA annual international benchmarking of port authority tariffs and the analyses of specific commodity tariffs compared to the calculated commodity base tariffs are two ways to measure and monitor the progress made towards achieving the tariff strategy goals. Nine years into the implementation of the tariff strategy the analyses of the benchmark studies show that tariffs for bulk commodities like coal and iron ore are still below the benchmark mean, container tariffs are above the mean, and vessel charges remain below the mean. This study uses descriptive statistics to analyse tariff books published from 2015/16 to 2023/24, focusing on cargo dues levied on all import and export commodities, and it compares individual tariffs across 254 commodities (break bulk, dry bulk, and liquid bulk) against the applicable base tariff for each year. The results show a reduction in the maximum deviation of commodities above the base tariff from 888% in 2015/16 to 153% in 2023/24. Of the 170 tariffs analysed for 2023/24, 81 commodities are below the proposed base tariff and 89 are above. The results show the ongoing cross-subsidisation between port user groups and between the various commodities. The study shows improvements to the TNPA tariff structure, but achieving the end-state tariff goals by 2025 becomes improbable.

Parallel Session B6: Economic History

Forty Years of the SAJE: A bibliometric analysis

Jen Snowball, Neil Kramm

Despite pressure to publish in international journals, regional academic journals play important roles, especially in developing country contexts. These include the production of context-specific knowledge creation, dissemination of locally relevant research, fostering academic communities of practice, and advancement of specialised knowledge.

The focus of any scientific discipline develops over time, as Kuhn's paradigm shift theory explains. Hodgson and Lamberg define schools of thought as consisting of: (i) inquiries or phenomena, (ii) theoretical approaches, (iii) analytical techniques and (iv) policies. Although necessarily shaped by local priorities, regional journals may also reflect such changes in topic, theory, methods, and policies over time. In addition to what is published in economics journals, there is also a growing interest in who is publishing, and the potential bias this may be introducing.

The South African Journal of Economics (SAJE) is the academic journal affiliated to the Economic Society of South Africa. First published in 1933, it is one of the oldest generalist journals in economics and covers a wide range of topics in both macroeconomics and microeconomics. Its focus, originally South African as the name indicates, has broadened to include all of Africa and developing economies in recent times. Using a purpose-built Artificial Intelligence GPT, checked by a vast cohort of Economics student research assistants, this paper reviews more than 40 years of SAJE publications (1980 to 2023) by conducting a quantitative bibliometric analysis. The analysis focuses attributes of both the articles themselves, and the characteristics of the authors. In terms of the articles, the sub-fields of study, analytical techniques or methods, and number of references cited are examined, and changes over time highlighted. In terms of the authors, the gender, geographic location and affiliation of the first author is analysed.

Parallel Session B6: Economic History

iSiNtu-Understood Social Norms and Networks: A Case Study of Amagqobhoka (School People) *Qaqambile Mathentamo*

The paper is a series of case studies which seek to take the understanding of economic development in South Africa into a new direction by incorporating economic history of a specific region of rural Eastern Cape. These case studies seek to answer the following core research question – how do iSiNtu-understood social norms and networks that bind African communities together affect a variety of economic activities, through cost minimisation, and thereby shaping economic outcomes in different rural contexts? Rural communities and households differ, indigenous formed social capital differ, thus affecting how this form of social capital shapes economic outcomes. The alignment of two social capital approaches with an indigenous way of life can enable one to investigate if iSiNtu-understood form of social capital can shape economic outcomes under different contexts. Using qualitative research approach the study employs a case study research design to investigate this novelty purpose.

The case study is about in-between households which can be described as amagqobhoka (School people) who were socialised and/or adopted certain characteristics. These characteristics are important to ascertain how they influence particular social norms and networks influencing economic activities, cost minimisation and ultimately, economic outcomes.

This case study sheds light on how the cultural evolution of households away from iSiNtu affects the costs of certain economic activities, which then sheds light on economic outcomes in these rural areas with respect to the business and employment opportunities they generate. iSiNtu has evolved to a point of depletion, leading to the depletion of iSiNtu-understood social norms and networks, disabling the economic activities of iSiNtu selected customs/traditions and agricultural production owing to increased costs, leading to economic outcomes in the form of business and employment.

Parallel Session B6: Economic History

An Investigation into South Africa's Impact on the International Monetary System During the Interwar Gold Standard

Christie Swanepoel

It is well established that small and open economies are usually considered highly sensitive to global economic fluctuations and business cycles. What is less clear is how a small open economy can create a financial and monetary system to protect their local economies and how they might benefit from links with trading partners and large economies. This paper proposes to study South Africa's impact and standing on international markets during the early twentieth century and how it played a role in the gold market under the interwar gold standard. It proposes to study how the monetary system evolved over the first three decades of the twentieth century and how key actors, like international experts, banks, and governments interacted with each other to impact the formation of a new financial system in the country. The paper revisits the debates on the establishment of a central bank and how the four colonies' financial systems were combined at Unification in 1910. The South African Reserve Bank during the tumultuous interwar period when changes occurred to the international monetary system and the collapse of the gold standard. It has shown its competency, even with pressure from political parties and changing international environments. This study proposes to investigate the historical roots of the strong monetary system in South Africa and how key stakeholders made decisions to establish this stable system. Proposed sources used will include letters to and from international visitors to South Africa like Johannes Postmus from the Netherlands who in earnest wrote to the South African government to adopt a central bank; the gold conference in 1919 which included differing views from the gold mining companies and the government; and finally, the Select Committee in 1920.

Parallel Session C1: ACEIR Special Session

Racial Divides in Housing in South Africa

Arindam Jana, Vimal Ranchhod

This paper investigates the racialised history of spatial development and exclusion, including forced removals, the Group Areas Act, and pass laws. The ANC government's housing policy is discussed, with a mixed record of success, particularly in the construction of low-cost housing. The study aims to examine the housing distribution by race, the associated quality of housing and access to amenities, while also estimating the financial wealth associated with housing, considering racial disparities. Additionally, we use NIDS data to investigate the extent to which internal migration between rural/traditional areas into urban informal areas, and then from urban informal areas into urban formal areas, correlates with improved wealth creation in the form of home equity.

An Application of the Uncentered Principal Components Analysis for Poverty Measurement in Kenya

Susan Kamundia, Murray Leibbrandt

Income and consumption expenditures have traditionally been used as indicators of the socioeconomic welfare of individuals and households. However, challenges in the collection of these data necessitate the use of other measures of poverty. Research has shown that there is a high correlation between asset poverty and monetary poverty. Therefore, asset-based measures provide a useful substitute as a measure of poverty. Using data from the Kenya demographic and health surveys, we assess the different methods of poverty measurement. Factor analysis (FA) and Principal Components Analysis (PCA) are often used in the creation of asset indices. However, they have a disadvantage as they assign negative scores to some indicators. The Uncentered Principal Component Analysis (UC PCA) deals with this weakness by always assigning positive weights. We compare the poverty statistics calculated from these three methods. The poverty headcount is similar across the methods of estimation. However, since the FA and PCA methods range between positive and negative, when the poverty line is close to zero, the poverty gap and poverty intensity are severely inflated. The UC PCA performs well across the three statistics with the poverty statistics increasing as the poverty line moves higher up the asset index distribution. We also investigate the importance of assessing the internal reliability of the indicators used in poverty measurement. We find that removing unreliable indicators from the estimation of the asset index shifts the distribution to the left. This implies that the poverty statistics calculated from the model with reliable indicators will be higher than the model which includes unreliable indicators. The asset wealth has also increased between 2003 and 2022. This is especially evident on the lower end of the asset index distribution thus

Parallel Session C1: ACEIR Special Session

Intergenerational Education Mobility in Ghana: Assessing Policy Reforms Over Time

Nicola Branson, Hagos Ressom, Emma Whitelaw

Educational attainment is widely regarded as a key driver of social mobility, yet its role in reducing inequality depends on the extent to which it is transmitted across generations. This study examines trends in intergenerational education mobility in Ghana, providing new insights into the evolving relationship between parental education and children's educational outcomes over time. Prior studies on educational mobility in Ghana have largely been cross-country analyses, limiting their ability to capture country-specific trends and policy nuances. Ghana has implemented a series of education policy reforms aimed at expanding access and improving quality, from the Accelerated Development Plan in 1951 to the introduction of free secondary education in 2017. These reforms have contributed to rising overall attainment levels, but disparities in access and outcomes persist, particularly along geographic, gender, and socioeconomic lines. Our study leverages multiple rounds of the Ghana Living Standards Survey (GLSS) to construct a high-frequency, harmonised dataset spanning individuals born between 1923 and 1994. We then exploit cohort and regional variations in Ghana's phased introduction of free junior high school (1996) and free senior high school (2017) to assess the impact of this education.

Parallel Session C2: Special Session Creative Economies in Africa: Cultures, Innovation and Sustainability

A Cultural Satellite Account: A Panoramic Perspective of South Africa's Culture and Creativity

Andre Gouws

The creative economy is increasingly being recognised for both its intrinsic, cultural values and its potential to contribute to economic growth, employment creation and poverty reduction. However, in order to manage the creative economy, its contribution to GDP and employment needs to be measured and tracked over time, particularly around crises, such as the COVID-19 pandemic. Currently South Africa does not have an official cultural satellite account, but the SA Cultural Observatory does produce a biennial Mapping Study. Using the UNESCO Framework for Cultural Statistics (2009) to define the cultural and creative industries, it was found that the cultural economy made up nearly 3% of economic activity in 2020, despite the devastating effect of the COVID-19 pandemic on the sector in that year (SACO Mapping Study, 2022). This paper discusses extending this work to analyse the performance of CCI sub-sectors (or domains) post 2020, also forecasting future performance (2025 – 2029). Partial equilibrium modelling, based on a Cultural and Creative Industries Satellite Account, embedded into a Social Accounting Matrix was used to construct a growth index for each domain showing changes in their economic output over time, relative to where they were in 2015. Results showed the growing potential of some sectors, such as the Audio-Visual and Interactive Media domain, which significantly accelerates post-2020 – a trend that is expected to continue in the future. This surge likely reflects the increased market share of digital media and streaming services, accelerated by technological advancements and the pandemic's digital shift. However, Visual Arts and Crafts, and Books and Press, have declined in terms of economic growth, a trend which is expected to continue in the future, despite some recovery from the pandemic in 2021/22 period. The implications of the findings for policy and industry investment are discussed.

Parallel Session C2: Special Session Creative Economies in Africa: Cultures, Innovation and Sustainability

Creative Fashion Entrepreneurship and Side-Hustles: A Mainstream Dual-Employment Strategy for Enhancing Income and Sustainable Growth in Ghana's Fashion Industry

Lilian Ama Afun

Increasing consumer demands and global trends have influenced diverse tastes and preferences, creating a growing market for authentic African fashion products (UNCTAD, 2023). However, the fashion industry faces challenges such as the economic impacts of COVID-19, competition from substitute goods, and the rise of second-hand clothing markets (Comunian et al., 2020). In Ghana, many fashion entrepreneurs diversify their earnings by engaging in side hustles such as running provision shops, offering cleaning services, or working in other fields like banking and healthcare. These activities highlight their ability to navigate opportunities within a liberalized but uncertain creative economy. While prior studies often link side hustles to burnout, reduced productivity, and role conflict (Webster et al., 2019; Campion et al., 2022), this paper examines how side ventures enhance income, sustain growth, and create employment opportunities for fashion entrepreneurs. The study focuses on side hustling as both a strategy for economic resilience and a response to instability in cultural and creative industries, where up to 10% of individuals engage in secondary jobs (Pouliakas & Conen, 2023). A qualitative approach was employed, interviewing 25 fashion entrepreneurs in Accra and Kumasi. The findings reveal that side hustling is crucial for economic well-being, enabling entrepreneurs to diversify income, reduce risk, and access new resources. For some, fashion entrepreneurship serves as a primary business supported by side ventures, while others balance formal jobs with creative pursuits to mitigate financial insecurity. This research challenges the notion that side hustling undermines decent work. Instead, it shows how juggling roles provides economic stability, empowerment, and flexibility, redefining "decent work" in emerging economies like Ghana. It underscores the potential of combining formal and informal work to achieve livelihood stability and satisfaction in the creative industries.

Parallel Session C2: Creative Economies in Africa: Cultures, Innovation and Sustainability

The Determinants of Lost Income During the COVID-19 Pandemic: The Case of South Africa's Precarious Freelance Creative Labour Market

Fiona Drummond

The cultural and creative industries (CCIs) encompass activities ranging from traditional arts (music, theatre, art) to commercial applications (architecture, graphic design). Work in the CCIs is well suited to the gig economy, where freelance workers take on short-term contract work. However, this work is precarious as it is unstable and insecure with a lack of social security benefits and protections that apply to standard employment. It is thus generally classified as being part of the 'secondary labour market' under the dual labour market theory. During economic shocks, like the COVID-19 pandemic (2020–2022), freelance workers may face heightened vulnerabilities like unemployment without a safety net to rely on. This research investigates how determinants such as socio-demographics, industry characteristics, adaptation strategies and location were likely to influence the vulnerability of South African freelance creative workers to pandemic-induced income losses. Using online survey data from South African freelance creative workers, three linear probability models (OLS) were run to cover the three pandemic years. Results show that significant variables varied over time, indicating that different factors were important at each stage of the pandemic. Mode of operation, an industry characteristic, negatively influenced income in 2020 and 2021. In 2020, location mattered, with metropolitan areas offering advantages. By 2021, socio-demographics (age) became influential. In 2022, the South African economy largely returned to normal conditions. Other variables identified in the literature as being important factors that influence income during economic shocks, such as gender, working informally or belonging to an industry association, were not found to be statistically significant. The severity of income loss for creative freelancers was, therefore, variable depending on individual and industry characteristics and time. The results offer a more nuanced understanding of the determinants of vulnerability. Precarity in the gig economy is thus not uniformly distributed but influenced by intersecting factors.

Parallel Session C2: Creative Economies in Africa: Cultures, Innovation and Sustainability

Adapting to the Digital Shift: A Case of Women Film Producers in Kumasi and the Evolving Creative Economy

Wilhemina Tetteh

The creative economy is often associated with large cities or dominant regions, forming enclaves of activity within broader economies (Boccella & Salerno, 2016). In Ghana, the creative economy is regionally structured, with the Greater Accra, Ashanti, and Northern regions as key hubs (Steedman, 2023). The Ashanti Region, particularly Kumasi, boasts a vibrant Akan-language film industry that dominates the local market, surpassing its English-language counterpart. By 2009, four out of five films released weekly in Ghana originated from the Akan-language sector (Garritano, 2013). Unlike the English-language industry, the Akan-language sector features significant participation of women in production roles.

Historically, film distribution relied on VCDs through informal and formal channels, often plagued by inefficiencies and revenue leaks. Digital platforms introduced efficiencies by enabling producers to manage revenues and reduce costs. However, concerns persist regarding the technical capacity of local industries to fully utilize these platforms. This study examines the transition of women producers in Kumasi to digital distribution and marketing, employing feminist political economy and economic production theory to analyse gendered market dynamics. Ethnographic methods, including interviews with 15 women producers, participant observation, and content analysis, reveal remarkable adaptability among women producers. Strategies include shortening films to align with audience preferences and reduce data costs, transitioning from traditional marketing to digital promotion, and leveraging platforms like YouTube, TikTok, and local television to democratize distribution.

While digital platforms reduced production costs, challenges remain. Monetization on platforms like YouTube yields limited returns, and contracts with local television offer minimal fees. These conditions often feel exploitative, despite expanded audience reach. The findings call for interventions that promote inclusive practices and institutional support fostering innovation, sustainable production and economic resilience within the creative economy.

Parallel Session C3: Topics in Macroeconomics and Finance

The Mediation and Moderation Effect of Risk Preferences on Time Preferences and Financial Literacy

Blessing Katuka

This paper investigates the mediation and moderation effect of risk preference on time preferences and financial literacy. Existing studies show that people with higher levels of financial literacy are more likely to achieve better life outcomes. Better life outcomes depend on an individual's knowledge and intertemporal choices executed in a context where inherent risk is prevalent. Regardless, existing studies directly evaluate the effects of financial literacy on intertemporal decisions. The current study brings in a different dimension by accounting for risk preferences' mediation and moderation role on financial literacy and time preferences. We collected data from 191 university students in South Africa using Multiple Price List (MPL) time preference and risk preference elicitation, a questionnaire, and a financial literacy test. A maximum likelihood estimation (MLE) of a pooled panel structural equation model (SEM) analysis was employed. The headline finding is that risk preferences fully mediate the impact of financial literacy on time preferences. The random effect panel regression on the moderation effect of risk preferences on financial literacy and time preferences confirms reverse causality between time preferences and financial literacy. The moderation effect of risk preferences on time preferences and financial literacy varies from one category of subjects to another. Risk aversion is significantly associated with high levels of financial literacy.

Investigating the Drivers of the South African Rand

Luyanda Matomane

This study uses quarterly data to examine the key drivers of the South African rand (USD/ZAR exchange rate) from 2000Q1 to 2023Q4. This study is relevant as it aims to provide a clearer understanding of the factors driving the South African rand, especially against the US dollar, which holds significant global economic influence. A Vector Error Correction Model (VECM) is used to examine the relationship between the rand and key drivers. The study includes impulse response functions and variance decomposition, offering insights into both short- and long-term effects on the rand. The findings indicate that the South African sovereign credit default risk premium, inflation differentials and the international gold price are key drivers of rand movements. The findings contribute to understanding the dynamics of the rand's performance and inform economic policy decisions.

Parallel Session C3: Topics in Macroeconomics and Finance

Dissecting the Role of Democracy on Fiscal Space Creation in Africa

Blessing Katuka, Calvin Mudzingiri, Regret Sunge

This paper analyzed the effect of democracy on fiscal space using PCSE and FGLS regression models on a panel of 15 African countries from 1998-2023. The findings reveal that improvements in electoral, liberal, deliberative, participatory, and egalitarian democracy promote fiscal space availability. The results also suggest that democracy moderates the effect of economic policies and governance quality on fiscal space. Interestingly, the transition from an undemocratic to a democratic regime promotes fiscal space creation in Africa, except for electoral democracy. The identified democracy thresholds sufficient to trigger fiscal space creation are 0.67, 0.39, 0.52, 0.26, and 0.23 for electoral, liberal, deliberative, participatory, and egalitarian democracy, respectively. We conclude that democracy is crucial for fiscal space creation in Africa. We recommend that African countries adopt comprehensive public policies and reforms that promote various forms of democracy, including electoral, liberal, deliberative, participatory, and egalitarian democracy. Specifically, governments should focus on strengthening electoral democracy, promoting liberal democracy, encouraging deliberative democracy, enhancing participatory democracy, and advancing egalitarian democracy. These measures will help create a more inclusive and accountable governance system, thereby improving fiscal space.

Aligning the Stars: Monetary-Fiscal Coordination When Debt Is Rising

Roy Havemann, Hylton Hollander

In light of South Africa's mooted shift to a lower inflation target, this paper examines the interaction between fiscal and monetary policy when public debt is rising and inflation is falling. We introduce the concept of the fiscal neutral rate (fiscal r -star)—the real interest rate consistent with a stable debt-to-GDP ratio—into a medium-scale, open-economy DSGE model, contrasting it with the monetary neutral rate (monetary r -star) associated with price stability. Empirical estimates reveal two persistent gaps: (i) market interest rates exceed fiscal r -star, implying that debt service costs are likely to crowd out other spending; and (ii) monetary r -star exceeds fiscal r -star, indicating a misalignment between monetary and fiscal stances. Bayesian estimation of augmented policy rules shows that the South African Reserve Bank implicitly responds to fiscal conditions, and that optimal simple rules incorporating the monetary-fiscal gap outperform standard Taylor rules. Policy simulations highlight that credible, expenditure-based fiscal consolidation—anchored to a debt or primary balance target—reduces welfare losses, narrows the monetary-fiscal gap, and allows monetary policy to operate more effectively. We conclude that transparency in measuring the gap and institutionalised policy coordination can enhance macroeconomic stability.

Parallel Session C4: Schooling in SA: Measurement and Infrastructure

Assessing the Relationship Between School-Based Assessment and Matric Performance in Mathematics: A Quantitative Analysis of Poor Schools in Limpopo

Janke Claassen, Servaas van der Berg

This study investigates whether the quality of school-based assessment (SBA) influences matriculation performance in Mathematics within quintile 1 to 3 schools in Limpopo, South Africa. It builds on previous literature that identified outlier schools in Limpopo excelling in Mathematics achievement at the matriculation level. Given the persistent underperformance in Mathematics among South African learners and its associated socio-economic consequences, the research aims to determine whether high-quality assessments contribute to improved outcomes in high-stakes examinations.

Using a panel dataset generated from the South African School Administration and Management System (SA-SAMS) data and National Senior Certificate (NSC) examination results for 2018 to 2022, the research evaluates assessment quality through two metrics: accuracy (correlation between SBA and NSC marks) and leniency (the gap between these marks). Additionally, basic regression models are employed to deepen the analysis.

Findings reveal that both leniency and accuracy in assessment improved significantly from earlier grades in the Further Education and Training (FET) phase to matric. Additionally, the sampled period overlaps with years affected by COVID-19, during which changes in assessment quality were observed due to assessment policies implemented to mitigate the effects of school disruptions. Significantly higher leniency in assessment was detected in grades 10 and 11 between 2020 and 2022.

Quintile 1 to 3 schools with consistently high assessment quality, even during COVID-19-affected years, were identified as "outlier" schools. These outlier schools achieved better matric Mathematics results than other bottom three quintile schools in the province, highlighting a positive relationship between high-quality SBA and matric Mathematics performance. The study underscores the importance of meaningful assessment practices and identifies outlier schools as potential models for educational improvement in resource-constrained settings.

Parallel Session C4: Schooling in SA: Measurement and Infrastructure

High-Level Mathematics Skills in South Africa: The Reliability of the Data, Quantifying the Under-Supply, and Opportunities for Projecting the Future

Martin Gustafsson

Skills shortfalls in South Africa's labour market limit opportunities for economic growth and employment. Among competing indicators of human capital, government's indicator of the number of youths leaving school with a mathematics mark permitting studies in a mathematically-oriented university programme seems important. International TIMSS data on lower secondary mathematics skills allow the comparability of reported values for this government indicator to be assessed. The paper begins by examining this. It then quantifies the under-supply of mathematics skills by comparing supply from schools to demand from universities, based on a dataset that draws from official university faculty entrance requirements. Future supply is then projected, in a manner that takes into account non-linearities arising from the current distribution of mathematics skills seen in the TIMSS lower secondary data. It is confirmed that a linear projection would be insufficient. Lastly, the paper examines the implications for the future supply of skills of a phenomenon that is counter-intuitive. Black learners, who constitute over 90% of all learners, are in many respects more likely to acquire a good school-leaving mathematics mark if from relatively disadvantaged areas of the country, with poor primary-level learning outcomes. The data suggest this arises due to a combination of two factors: unreliable assessment signals to learners before the final school grade, and greater survival to the last grade in more disadvantaged areas.

Parallel Session C4: Schooling in SA: Measurement and Infrastructure

Small Schools in South Africa: Infrastructure, Educational Outcomes, and the Impact on Learners When Schools Are Closed

Stephen Taylor, Lunga Swelindaw, Zamangwe Zwane, Kholosa Nonkenge

Education outcomes in South Africa are highly unequal with multiple overlapping disadvantages affecting children in deep rural areas. One particular factor is that schools in these areas are often small, leading to challenges like multigrade classrooms and dilapidated infrastructure. This has prompted a policy response from the government to close small and non-viable schools. This paper describes the prevalence and state of small schools in South Africa, focussing on their infrastructure and academic outcomes. Despite many schools being closed over the years, there are still many small schools and these schools do have worse infrastructure and academic outcomes, on average, compared to larger schools. Much of this gap is attributable to the geographic and socio-economic contexts in which small schools are located, but even after accounting for these factors, differences remain. An analysis of the impact of closing schools on the learners in those schools, suggests a potentially disruptive effect lowering the likelihood of reaching the National Senior Certificate examinations. However, for those children who do remain in the system, they gain access to a wider variety of subjects to choose from and do not appear to suffer any negative impacts on their NSC results.

Ultimately, therefore, the paper comes out broadly in favour of the current policy emphasis while urging caution to ensure that children in schools at the time of closure are assisted to be placed in an alternative school. Small schools with no nearby alternative, should not necessarily be closed. The official guidelines on the Rationalisation and Re-Alignment of Public Schools are comprehensive and sensitive to these issues, and therefore, deserve to be carefully implemented in the provinces.

Parallel Session C4: Schooling in SA: Measurement and Infrastructure

Discrepancies Between Population Estimates and Official Enrolment Data and the Implications of This for Across-Province Funding Equity

Martin Gustafsson

In South Africa, as in several other developing countries, there are noteworthy discrepancies between population estimates by age and data on learners enrolled in school. The discrepancies are of special interest for ages 7 to 14, ages at which virtually all South African children attend school. Discrepancies have remained large, even after improvements in recent years in the quality of enrolment data. The paper compares Stats SA population estimates to enrolment data for 2018 to 2022, and considers factors which could reduce the reliability of the enrolment data. Such factors appear negligible. The conclusion is that in the provincial equitable share system some provinces gain or lose as much as 13% of education financing, or 7% of the overall provincial grant, due to the use of existing population estimates. While provincial services would become accustomed to the resultant funding inequities over time, additional financial stress arises when changes over time in official estimates of the child population do not match trends in the enrolment data. The issue has received little attention in the wider public funding debates in part due to their complexity, and in part due to better enrolment data being a fairly new phenomenon. The fact that solutions would be legally and institutionally difficult, and not realisable in the short term, would further limit interest in the matter. Yet the matter is substantive as it has a bearing on indicators such as learner-educator ratios in provinces. The solution seems to lie within ongoing work, in South Africa and elsewhere, to improve population estimates through the use of a wider range of relevant data sources, such as enrolment data. There is a history of using enrolment statistics in population estimates, but approaches here have been rudimentary, largely due to the omission of the age variable.

Parallel Session C5: Experimental Economics and Risk

The Role of Risk and Temporal Preferences in Altruistic Behaviour: A South African Experimental Study

Celeste Campher, Sevias Guvuriro, Frikkie Booysen

This study empirically explores the theoretical argument that altruism is related to risk and temporal preferences by separately eliciting risk and temporal preferences amongst subjects from a South African university. Subjects completed a standard social discounting task (SDT), together with a series of multiple price lists (MPLs) tasks. The study finds that risk and temporal preferences are correlated with three measures of altruism. More specifically, giving to those closest to you increases with risk appetite, whereas the rate of social discounting declines with risk appetite and patient subjects give more to those closest to them, compared to more impatient subjects. There is also some evidence that altruism is higher among the most future-oriented subjects. Some of the evidence, however, contradicts the theoretical priors which postulate that individuals with higher discount rates of future rewards are less altruistic than more patient individuals and more risk-averse individuals are less likely to engage in altruism, with some evidence in the study indicating that risk-averse subjects and impatient subjects are more altruistic to those who are socially more distant. Based on the evidence from the study, the associations between altruism and risk attitudes and temporal preferences are complex and non-linear by nature.

Estimating Higher Order Risk Preferences with a Flexible Utility Function: The Bézier Curve

Andre Hofmeyr, Brian Albert Monroe

Higher order risk preferences have been used to explain a variety of economic phenomena using comparative static analyses. In cases where closed form solutions do not exist, there is a need for flexible utility functions to make specific predictions and draw inferences about economic behavior. We derive a cubic Bézier function, which is continuous, highly differentiable, and monotonically increasing. We demonstrate the function's flexibility by showing that it can accommodate all combinations of second order, third order, and fourth order risk preferences for a single agent. Using a novel risk preference experiment, we elicit subjects' higher order risk preferences and estimate them using a Bayesian econometric framework. Our results highlight the value of using a flexible utility function to characterize higher order risk preferences.

Parallel Session C5: Experimental Economics and Risk

Beyond Nash: Learning to Cooperate in a Regulated Social Dilemma – Theory and Experiment

Dambala Gelo

This paper investigates how cooperative and non-cooperative strategies emerge and evolve through boundedly rational learning processes in repeated social dilemmas, particularly where enforceable rules aim to sustain cooperation. Moving beyond traditional equilibrium-focused perspectives, we examine the dynamic adaptation of individual behavior within regulatory frameworks that govern shared resources. Employing the Experience-Weighted Attraction (EWA) model, we conduct econometric analyses of field experimental data to reveal how learning drives players to cooperate or defect over time. Our findings highlight the critical role of learning mechanisms in shaping long-term cooperative outcomes, offering valuable insights for designing interventions and institutional rules that promote sustainable resource management.

Corrupt Behaviour: Information Provision and Information Avoidance

Mpoifeng Molefinyane, Nicky Nicholls

The costs of corruption are widely acknowledged. Based on concerns about whether awareness of pervasive corruption might lead more people to embrace corrupt practices, our first experiment varies information on the pervasiveness of corruption to investigate how this impacts corrupt decision making. We note incomplete adjustment of beliefs and behaviour to (partially) align with the prevalence information provided. Suggestive of motivated reasoning in belief reporting, more corrupt decision makers show less complete adjustment of beliefs in the presence of information about low corruption. Building on this evidence, our second experiment investigates whether respondents engage strategically with an option to learn information about corruption levels, where learning the information might force less corrupt behaviour. Respondents who choose the corrupt option only in low corruption contexts show evidence of strategic information engagement. These respondents are less likely to pursue information about the corruption level of the group where learning the information would force honest behaviour and reduce their payoffs; and more likely to pursue information confirming group corruption levels associated with higher payoffs. Our research highlights potential upsides to communicating low (or decreasing) corruption realities, as well as the importance of making information supporting socially beneficial behaviour more difficult to avoid.

Parallel Session C6: Crises and Food Security

Impacts of Income Shocks and Social Protection on Rural Households' Food Insecurity Experiences During the COVID-19 Pandemic in Conflict-Affected States in Northern Nigeria

Abayomi Samuel Oyekale, Thonaeng Charity Molelekoa

Social protection is one of the major policy instruments for addressing households' vulnerability to income shocks and poverty across the globe. In Nigeria, the COVID-19 pandemic presented a double tragedy to rural households in northern Nigeria due to their pre-pandemic exposure to several income shocks and conflicts. This study analysed the impacts of income shocks and social protection on food insecurity experiences (FIE). The data were collected by the Food and Agriculture Organization (FAO) as Data in Emergency Monitoring (DIEM) from 4412 households in two Rounds in 2021 and 2022. The data were analysed by negative binomial regression and treatment effects model with regression estimator. The results showed that majority of the respondents were permanent residents (94.88%), while the highest reported income shocks were high food price (34.00%), violence (23.07%), high fuel price (20.24%), and loss of employment (11.65%). Social assistances in the form of food and cash vouchers were received by 5.92% and 2.61%, respectively. At the mild level of food insecurity, 67.84% worried about food, 71.48% ate less healthy food, and 71.62% ate few food, while at chronic level, 23.13% went the whole day without food. The negative binomial regression showed that education levels, male headship, income, and permanent residence significantly reduced ($p < 0.05$) the expected number of FIE. The average treatment effect (ATE) showed that loss of employment, other household shocks, high food prices, other economic shocks, animal diseases, violence and insecurity significantly increased ($p < 0.05$) FIE, while pest outbreaks reduced it. Also, those who received food had significantly higher FIE ($p < 0.05$). It was concluded that income shocks promoted FIE during the COVID-19 pandemic, while social assistances insignificantly addressed the problems. It was recommended that efforts to address food insecurity should be gender sensitive and ensure better security.

The Combined Effect of Pandemics and Economic Uncertainties on Household Consumption in Sub-Saharan Africa

Shelter Thelile Nene, Kehinde Damilola Ilesanmi

The study provides a comparative analysis of the impact of pandemics and the level of economic uncertainty in the consumption patterns of low- and middle-income countries in Sub-Saharan Africa. The System Generalized Method of Moments and secondary data for the twenty one SSA countries are employed in the analysis, which covers the sample period from 2005 to 2022. The Pandemics and World Economic Uncertainty indices are used to quantify the frequency of pandemics and the levels of economic uncertainty resulting from policy responses, respectively. Earlier studies relied on dummy variables and the number of infected/death to investigate pandemics; these indices allow for aggregate pandemics analysis. The predicted results suggest that, both in the short and long term, household consumption patterns in low-income SSA countries are severely affected by pandemics and uncertainty. While for middle-income SSA countries, the impact of pandemics is only evident in the short term. The findings of the research have important implications for policymakers in low-income nations, who ought to concentrate on constructing their own economic policies and exercise caution when evaluating their current financial state.

Parallel Session C6: Crises and Food Security

The Impact of climate Change on Food Security and Macroeconomic Uncertainty in South Africa

Sebenzile Hlatswayo, Devi Tewari

South Africa has experienced numerous climate change events in recent decades, affecting various economic sectors such as agriculture, fishing, transportation, and cattle. Extreme weather events such as high temperatures, precipitations, and rainfall threaten food production flows on both agricultural and livestock farms, resulting in food security. Thus, intensive climate change has a negative impact on food security. Climate change will subsequently result in an underperforming goods market. As a result, this will impact manufacturing costs such as transportation and input. It will also drive-up household food consumption and prices. Households avoid the risk of rising food prices, which promotes famine. Climate change impedes economic development and significantly impacts low- and middle-income countries like South Africa. According to the existing literature, empirical evidence indicates a short observation time, which is insufficient to quantify all climate change events. This will influence projecting future occurrences and render policymakers untrustworthy. The purpose of this study is to investigate the influence of climate change on food security and macroeconomic uncertainty from 1960 to 2023 using a smooth transition autoregression model and large-scale observations. This model is highly flexible and dependable for testing nonlinearity and determining shocks. The study will provide insights into how climate change affects food security. In addition, the study will also be beneficial by providing insight into how macroeconomic uncertainty that are caused by climate change risks how can be mitigated.

Parallel Session D3: Macroeconomic Impacts of Climate Change: Growth, Stability, and Inequality

The Non-Linear Impact of Financial Development and Climate Change on Inequality in Africa

Sheunesu Zhou

This paper seeks to investigate the role of financial development and climate change in reducing inequality across Africa. We use both the broad measure of financial development and its decomposed measures to test the impact of financial development on inequality in Africa. Furthermore, we use carbon emissions as a measure of climate change to examine the relationship between climate change and inequality. By adopting a non-linear model, on the one hand, we find a U-shape relationship between carbon emissions and income inequality, which points to the role of energy production and use in reducing income gaps in developing economies. However, there is a limit to which carbon fuels can benefit society, beyond which it starts to perpetuate inequalities. Additionally, we find robust evidence that renewable energy negatively influences inequality, which supports diversifying energy sources in favour of renewables. On the other hand, we find an inverted U-shape relationship between income inequality and financial development. Less developed financial markets and institutions tend to perpetuate inequality compared to more developed financial markets. These findings reflect the indispensable role of financial market development in addressing income inequalities.

Economic Growth in South Africa: Climate Change Implications

Harold Ngalawa, Neo Matsoso

This paper sets out to investigate the implications of climate change on economic growth in South Africa. Using a constant elasticity of substitution production function, the study specifies an endogenous growth model (with technological progress and human capital development) to analyse quarterly frequency data covering the period 2000Q4 to 2023Q4. In the baseline model, the study finds that, consistent with economic theory, growth of physical capital, human capital, and technological progress have significant positive effects on real output growth. An estimation of a growth model with climate change shows that temperature changes (relative to a baseline climate pattern for the period 1951-1980) have no significant impact on economic growth in South Africa. Therefore, we find no evidence of a significant direct impact of climate change on economic growth. However, the interaction term of temperature changes and labour has a statistically significant negative effect on economic growth. This suggests that the negative effect of climate change on economic growth may be transmitted through its effects on human physiology, corroborating the hypothesis that global warming severely limits labour's contribution to real output growth. Nevertheless, the coefficient of this term is very small, which calls its economic significance into question.

Parallel Session D3: Macroeconomic Impacts of Climate Change: Growth, Stability, and Inequality

The Impact of Climate Change on Financial Stability in South Africa (1991–2022)

Siyabonga Mbotho, Sheunesu Zhou

This study examines the dynamic relationships between climate change and financial stability in South Africa, contributing to the existing literature by providing empirical evidence on the significant impact of climate-related factors on financial stability. The research question guiding this study is: How do climate-related factors, such as carbon emissions and renewable energy consumption, affect financial stability in South Africa?. Using a Bayesian Vector Autoregression (BVAR) model and data from 1991 to 2022, this study investigates the impact of carbon emissions, adjusted savings, renewable energy consumption, lending interest rates, and unemployment on financial stability. The findings indicate that carbon emissions, adjusted savings damaged by carbon dioxide emissions, renewable energy consumption, and unemployment significantly erode financial stability. The impulse response functions and forecast error variance decomposition analysis reveal the lasting effects of shocks to carbon emissions, lending interest rates, and unemployment on financial stability. This study supports the Financial Instability Hypothesis and the Diamond-Dybvig model, emphasizing the importance of considering climate-related risks in financial stability analysis. The findings have significant implications for policymakers and financial regulators seeking to promote financial stability and mitigate climate-related risks in South Africa.

Parallel Session D4: Education and Labour Market Outcomes

Educational Attainment, Skills Mismatch, and Informality in Zimbabwe: An Empirical Analysis

Getrude Njokwe, Margaret Chitiga-Mabugu, Jessika A. Bohlmann

This study explores the relationship between educational attainment, skills mismatches, and labour market informality in Zimbabwe, a country where the economy has shrunk to near non-existence, leaving the labour market predominantly informal. Despite a historically well-educated population, a significant disconnect exists between the education system and labour market demands. Using a logistic regression model and data from the Quarterly Labour Force Survey (2021–2023), the research examines the determinants of informality, with a specific focus on education. The findings reveal that education alone is not the primary driver of labour market informality. Instead, factors such as area of residence, province, and age play a more significant role in determining an individual's likelihood of participating in the informal sector. Furthermore, the study identifies widespread skills mismatches, where individuals' education does not align with the types of jobs available in the market. The research underscores the urgency of implementing education reforms that emphasize practical, market-driven skills while increasing recognition of the informal sector's contributions to skills development and economic inclusion. By providing an empirical analysis of labour market outcomes linked to educational attainment, this study offers actionable insights for policymakers. It advocates for integrating technical and vocational training into national strategies, aligning education with labour market needs, and leveraging the informal sector to address skills mismatches. These interventions are critical for fostering inclusive economic growth, embracing labour market informality, and preparing Zimbabwe's workforce to meet the demands of a rapidly changing economy. This study contributes to broader discussions on labour market efficiency, the role of informality in economic resilience, and sustainable development.

Catalysing Social Mobility Through Higher Education

Nicola Branson, Emma Whitelaw

We examine the role of higher education in fostering social mobility by assessing how well public universities enable students from lower-income or under-resourced backgrounds to graduate. Focusing on field of study, institution type, and graduation outcomes (for example, time to graduation), this analysis will use linked administrative datasets (NSC and HEMIS) to trace trajectories to graduation. We aim to map institutions on an access-success plane—defined by the share of low-income students enrolled (access) versus the share who graduate on time or within N+1 years (success). By aligning these findings with differences in labour market and post-graduate study outcomes, this mapping will highlight areas where various institutions can improve students' socio-economic trajectories. Ultimately, this paper will provide empirical evidence on how different universities could adjust or enhance their role as catalysts of social mobility.

Parallel Session D4: Education and Labour Market Outcomes

A Paradox of Progress: Rising Education and Unequal Labour Market Returns in Post- Apartheid South Africa

Timothy Köhler

This paper analyses the evolution of the labour market returns to education and their drivers in post-Apartheid South Africa using over 20 years of harmonized household survey microdata from 2001 to 2023 including credible earnings data not available in the public domain. I document a significant increase in educational attainment, driven by the expansion of completed secondary and tertiary education, which resulted in a 40 percent reduction in educational attainment inequality. Despite this, the mean return to an additional year of education increased, suggesting that demand for higher-educated workers has outpaced supply. Increases in both educational attainment and returns drove wages upwards. While the former is dominant, the latter has grown in importance over time. Beyond the mean, the return to tertiary education has tripled, resulting in an increasingly convex returns structure. This return became particularly stronger for lower-wage workers and primarily explains the group's significant growth in real wages. The consequence was a reduction in overall wage inequality which, nevertheless, remains high. Finally, differential returns rather than differences in educational attainment have grown in importance in explaining inter-race wage inequality, which is suggestive of increasing discrimination but likely also reflects a growing importance of education quality differentials.

Trends in Education and Labour Market Dynamics in Ghana: Evidence from Harmonised Cross-Sections

Emma Whitelaw, Nicola Branson

The Ghanaian government rolled out free compulsory basic education in 1995 (primary and junior high) and free senior high school education provision in 2017. Three decades into this commitment, educational attainment in Ghana has increased rapidly, with almost universal primary education completion, growing enrolment in secondary education and gender parity in attainment at the pre-tertiary levels (Ghana Statistical Service, 2021). With those exposed to the free education policies reaching prime adulthood, our study aims to take stock of how educational attainment has changed over time, and to examine the gendered consequences of these education changes for labour market dynamics.

We harmonise independent but nationally representative cross-sectional household surveys (the Ghana Living Standards Surveys; GLSSs) and population and housing censuses (PHCs) between 1987 and 2021 into the "Ghana Education and Labour Series (GELS)". This synthesis exercise is important for identifying changes and inconsistencies in sampling and measurement over time. We subsequently analyse educational attainment, labour market participation and women's fertility outcomes over time. Our approach allows us to pinpoint aggregate shifts in outcomes as well as assess the comparability of survey data from different sources over time. We aim to answer questions such as, "What have been the gendered trends in educational attainment in Ghana for those born since independence (1957)?" and "Has economic activity (labour force participation, employment, unemployment) shifted over time? Does this differ by gender, location and education-level?"

Preliminary findings suggest a period of educational stagnation, followed by increased educational attainment, but gender inequalities persist. For both genders, educational expansion was accompanied by an increasing share of the employed working as employees - a more stable form of employment. This shift was more prominent for men, however, and overall, women working as employees remains below a third of all women in work.

Parallel Session D5: Wellbeing and Informal Work

The Effects of Income and Socio-economic Related factors on Health Outcomes of South African Individuals.

Thamsanqa Mtshengu

The study investigates the impact of income and other socioeconomic inequalities on health outcomes. Economic inequalities in South Africa worsen health inequalities resulting into poor individuals having poor health. It is evident that even in high-income countries, a number of key indicators have determined that low-income worsen health outcomes. Furthermore, medical care may be free for the poor, however, other socio-economic attributes such as inability to meet some of the basic needs may also affect health outcomes of individuals. Even though the health selection theory suggests a reverse causation between socioeconomic status and health outcome, where good health leads to a higher socioeconomic status. The study will use National Income Dynamics Study survey data and data from the world bank to investigate the effects of income and socioeconomic status on self-reported health. The results from this study will be able to advise policy on how to improve health outcomes of South Africans.

Analysis of Self-Rated Health Reporting in South Africa

Josue Mbonigaba

Self-reported health measures are widely used to compare population health and inform policies addressing health inequalities, particularly in low-income countries. However, two types of reporting bias can compromise the effectiveness of such policies when self-reported measures are based on categorical responses. The first type, cut-point shift bias, occurs when different subgroups with similar true health systematically report varying health status categories due to differing response thresholds. The second type, index shift bias, arises when certain subgroups consistently report higher or lower health status categories than other groups with similar true health. While evidence on these biases is critical for informed policymaking, it has not been documented for South Africa—a country marked by profound health inequalities. This study addresses this gap by using an illness index to approximate true health and applying an ordered probit model and log-likelihood tests to identify cut-point and index shifts. Subgroups were stratified by income, education, employment status, race, and gender, using data from the South African National Income Dynamics Survey (NIDS), a nationally representative panel survey. The analysis revealed strong evidence of cut-point shift bias across gender and race groups (p -value < 0.01) and index shift bias across educational levels and employment status (p -value < 0.01). These findings are essential for understanding the limitations of self-reported health measures and their implications for addressing health inequalities in South Africa

Parallel Session D5: Wellbeing and Informal Work

Informal Employment and Working Poverty in Three South African Mining Towns

J-P Geldenhuys

Household poverty is prevalent and persistent in South Africa, while very high levels of earnings inequality suggest that many South African workers work in low-wage jobs, and are poor, despite being in paid employment. Furthermore, informal employment – defined as the absence of certain job benefits or characteristics -- is also widespread in South Africa, as in many other emerging market economies. This study will try to address the extent of informal employment in three South African mining towns, while also establishing the extent to which informal employment is associated with working poverty. To achieve these objectives, this study uses household survey data from three South African mining towns – Postmasburg, Emalahleni, and Rustenburg. Data on job characteristics and job benefits are used to identify workers working in informal jobs, while data on household income and expenditure, as well as household asset ownership, are used as indicators of household welfare. To identify which workers work in informal jobs, this study uses the Alkire-Foster (2011) multiple deprivation index. This index also allows researchers to identify those job characteristics or benefits that make the greatest contribution to the index. To measure household poverty, this study uses the Foster-Greer-Thorbecke (FGT) poverty indices (for household income and expenditure), while using multiple correspondence analysis (MCA) to construct a household asset index. Multiple deprivation indices, such as those of Alkire and Foster, and Chakravarty and D'Ambrosio (2012), are used to identify people living in multidimensional poverty. Finally, the study uses probit regressions to determine if having an informal job meaningfully predicts working poverty.

The study uses data about labour market outcomes and household welfare for three mining towns, for which this information is not well-known, a novel method to identify workers with informal jobs, while also using multiple indicators and methods to identify the working poor.

Parallel Session D5: Wellbeing and Informal Work

Employment in the Informal Sector: Getting Beyond Measurement to Doing Something – The Good Money Habits Project

Frederick Fourie

Prior research on informal-sector employment highlighted the size and role of the sector in job creation and poverty alleviation, e.g. showing that 1 in 5 persons in SA that work, work in the informal sector; of the 2 million informal enterprises, about 400 000 have paid employees. These firms provide paid jobs to about 1.1 million workers – almost 3 three times the formal mining sector. Yet they get no meaningful policy support. The research identified the main constraints, including a lack of financial management skills, access to finance (loans), proper business premises, etc. Various government agencies are active in this area, e.g. DSBD, SEDA, SEFA and LED officials in provincial and local government – but have had limited impact on informal enterprise robustness and employment.

Rather than stopping at measurement and policy recommendations, the author decided to tackle the design and launch of targeted interventions to empower micro-enterprise owners: to enable them to manage the business better, grow their businesses, increase employment, improve their premises, etc. Central to this is the ability to “see” and manage the money (finances) of their businesses better.

Informed by interactions with township business owners, this intervention entailed the development of 15 short cellphone-based videos on basic financial management practices for micro-enterprises. The videos were carefully tailored for the target audience in terms of context, narrator, using plain language, avoiding jargon, being succinct and practical, and avoiding sounding like bookkeeping lectures. The videos are delivered in a free Android app with interactive learning and gamification elements.

Against the background of the challenges of engagement, designing and launching scalable interventions such as video training, the paper will report the expected first phase of user-response data from businesses using the App. These data can be used to assess the effectiveness of the intervention in terms of business performance.

Parallel Session D6: Political Economy and Development Outcomes: Governance, Risk, and Inequality

How do political dynamics influence the design, allocation, and implementation of financial mechanisms for managing climate-induced disasters?

Sarah Mokwebo

Climate-induced disasters pose significant challenges to governments, communities, and the global financial architecture, necessitating innovative and equitable financing mechanisms. This paper examines the political dimensions shaping the financing of climate-induced disaster management, focusing on the intersection of governance structures, international commitments, and domestic fiscal constraints. It explores the research question: How do political dynamics influence the design, allocation, and implementation of financial mechanisms for managing climate-induced disasters?

Using a mixed-methods approach, the study integrates qualitative analysis of policy documents, multilateral agreements, and national disaster management plans with quantitative assessments of funding flows and their socio-economic impacts. The research investigates case studies from emerging markets, particularly in Africa, to highlight the political economy challenges, including power imbalances, policy trade-offs, and accountability concerns.

This paper contributes to the field by identifying how political interests and institutional frameworks shape funding priorities, revealing gaps in financing for vulnerable communities most affected by climate change. It also provides policy recommendations for fostering more inclusive, transparent, and effective financing models to enhance resilience and equity in disaster management strategies.

Parallel Session D6: Political Economy and Development Outcomes: Governance, Risk, and Inequality

The Analysis of the Relationship Between Good Governance and Economic Development: A Panel Autoregressive Distributed Lags Approach

Amahle Madiba, Ferdinand Niyimbanira

The Southern African Development Community (SADC) emphasises the principle “sovereign equality of all member states”. The core objective of this principle is to promote development and economic growth across member states with the aim of alleviating poverty, improving the living standard and quality of life for all people in Southern Africa, and support the socially disadvantaged through regional integration. Governance can therefore be used as a tool to improve the well-being and longevity of citizens as it is considered a crucial aspect in the promotion of economic growth and poverty reduction. The objective of the study is to investigate the relationship between good governance and economic development in SADC countries. The study adopts a panel ARDL approach. This is due to its asymptotic property which makes it easier to estimate stationary and non-stationary series. The study uses annual data spanning from 2002-2021. Data is sourced from UNDP official website, Worldwide governance indicators, World Bank, Our World in Data and Federal Reserve Economic Data. The main research question for the study is to what extent does good governance lead to economic development among the Southern African Development Community? Findings indicate that good governance has a positive relationship with HDI. However, some of the good governance indicators show nonconformity with theory. Government should focus more on enhancing or strengthening government effectiveness, regulatory quality and rule of law since they have a high probability on improving human development. The study recommends that SADC countries prioritise the promotion of good governance as a fundamental pillar for achieving sustainable development. This is expected to contribute significantly to improved human development outcomes. Particular emphasis should be placed on strengthening rule of law, enhancing government effectiveness and improving regulatory quality to create an environment conducive to economic growth and development.

Parallel Session D6: Wellbeing and Informal Work

The Nexus of Political Regime and Income Inequality in South Africa: A Complex Interplay

Lindokuhle Talent Zungu, Shelter Nene, Bongumusa P Makhoba

The study examines the impact of political regimes on income inequality in South Africa from 1965 to 2022, focusing on the apartheid (1965–1993) and democratic regimes (1994–2022). The study adopted the Bayesian vector autoregression and Bayesian Generalized Method of Moments models to analyze variables, handle dense parameterization, and optimize formativeness and heterogeneous factors. The study reveals that political regimes in South Africa contribute to high income inequality. Democratic governance promotes social programs and redistributive measures, while authoritarian regimes consolidate economic power within a select elite, perpetuating income gaps. Monetary policy through house prices increases income inequality in democracies and apartheid but reduces it in high-income countries. Restrictions on domestic credit access during apartheid and democratic regimes increase inequality among the middle class. The study suggests that understanding the interplay between political systems and income distribution can help policymakers develop strategies for inclusive growth and equitable opportunities. Therefore, South Africa needs a comprehensive policy approach to reduce income inequality and foster inclusive development. This includes strengthening democratic institutions, which are going to be aligned with transparent, accountable leadership, which is essential to combat entrenched inequality and create a more just society; investing in education and skills development programs for disadvantaged communities; implementing progressive taxation policies that won't suffocate only the middle class; fostering economic diversification and entrepreneurship in marginalized regions; and addressing structural barriers to social mobility. These measures will ensure equitable resource distribution, mitigate disparities, and stimulate growth and job creation.

Parallel Session E1: EERU, UP Special Session: Household Dynamics in the Energy Transition: Understanding Demand, Migration, and Inequality in South Africa

Examining the Role of the Energy Transition as a Driver to Intra and Inter-Country Migration Patterns

Fritz Shongwe, Roula Inglesi-Lotz

This paper, using a system dynamics model simulation, analyzes how the renewable energy transition affects migration patterns from rural to urban areas in various countries. The renewable energy transition often occurs through legislated policies that accelerate the closure of brown energy power plants and related mining activities, replacing them with solar, wind, and other renewable energy sources, with the specific goal of achieving net-zero emissions by a target year, such as 2050. However, this study focuses specifically on the energy production aspect of the renewable energy transition, including the closure of brown energy power stations and related mines. Notably, most of these industries being phased out due to the energy transition are in remote, rural areas, far from densely populated urban or metropolitan regions. Therefore, this paper addresses the following research questions: Does the renewable energy transition lead to job losses when power plants and mines are shut down? How many of the unemployed are likely to be absorbed into the renewable energy sector? Does this process exacerbate rural unemployment and fuel rural-to-urban migration? The paper also explores the challenges of service delivery planning in urban and metropolitan areas that may arise due to increased urbanization rates. This work is novel because it examines rural-to-urban migration precipitated by the renewable energy transition.

South Africa's Energy Transition: Regional Economic Impacts

Jessika Bohlmann, Heinrich Bohlmann, Roula Inglesi-Lotz

The transition to a cleaner energy mix is critical for addressing global challenges such as climate change and inclusive socio-economic development, particularly in developing countries like South Africa. However, this shift is accompanied by complex economic and social trade-offs, including potential widening income inequalities, regional disparities, and labour market challenges. South Africa, heavily reliant on coal, faces unique pressures to balance its energy needs with environmental goals while addressing historical inequities and ensuring no one is left behind (LNOB) (Bohlmann et al., 2023). Existing research underscores the need for in-depth policy interventions that mitigate these challenges, particularly in regions like Mpumalanga, where coal decommissioning could have significant economic consequences (Bohlmann et al., 2019; 2023). This research study aims to investigate the national and regional economic implications of South Africa's energy transition from coal to cleaner energy sources, focusing on the impacts across regions and household groups. Using a regional Computable General Equilibrium (CGE) model, the study examines how changes in the energy supply mix influence household, sectoral and provincial economic inequalities.

Parallel Session E1: EERU, UP Special Session: Household Dynamics in the Energy Transition: Understanding Demand, Migration, and Inequality in South Africa

Estimating Residential Electricity Demand in South Africa

Yuxiang Ye

In this study we estimate price and income elasticities of residential electricity demand by merging household survey data with regulator approved tariff data. Previous studies in estimating demand elasticities mostly use time-series or aggregated data, while few focuses on micro-level household survey data, due to lack of electricity price information. In this study, we collect regulator approved municipality-level electricity tariff in South Africa, and merge with the most recently available household expenditure survey data. The combined dataset provides a unique opportunity to examine the price and income elasticities of electricity demand in the country. We employ a log-log functional form and use an instrument variables approach to address the endogenous price. We also examine the heterogeneity in price response of electricity consumption across different groups. Our preliminary results are comparable with previous studies (e.g. Ye et. al., 2018; Koch et. al., 2024). The research contributes to the literature by (1) providing new evidence in estimating elasticities of energy demand under nonlinear pricing from a developing country context; 2) using an instrument variables estimation to address endogenous price; 3) offering important policy implications for the utilities and regulators.

Measuring Required Energy in South Africa

Blessings Nkuna, Steve Koch, Yuxiang Ye

Measuring required energy is important for measuring development goals such as energy poverty or food poverty, which require us to estimate "need" as a precondition. Recent modelling applications for required energy leverage on the availability of expenditure data and equivalent scales to adjust to data limitations, especially in developing country contexts, where large-scale surveys of engineering-related variables that assist in establishing required energy on a cost basis are not readily available or feasible. The 2023 income and expenditure survey presents an opportunity to update the required energy estimates for South Africa at a nationally representative level using post-pandemic data. Moreover, equivalent scales allow us to account for household heterogeneity in income and expenditure for fairer comparison in the outcome variable. The income and expenditure survey is preferable to this objective as it allows for periodic re-estimations of important SDG goals every five years, such as energy poverty.

Parallel Session E2: Social Security and Labour Market Policies

Social Security Coverage among the Working-Age Population in South Africa

Haroon Bhorat, Timothy Köhler, Jabulile Monnakgotla

Comprehensive and well-designed social security systems are critical to ensure that populations are adequately covered against various sources of adverse risk and volatility. Using descriptive and micro-econometric techniques on household survey and administrative data, this report provides an analysis of social security coverage among the working-age population in South Africa from 2010 to 2022. We show that coverage of social assistance has improved, but it remains low and varies considerably across demographic groups. Social assistance coverage is particularly low among both the unemployed and a non-negligible share of the employed who are in working poverty. Social insurance coverage is also low, particularly among the unemployed and informally employed, and, conversely, has fallen in recent years. Additionally, we examine the performance of labour centres in the processing of unemployment insurance claims and highlight the limitations of, and potential for, existing datasets to better track social security coverage. These improvements could aid future research and evidence-based policymaking.

The Long-Run Effects of Cash Transfers on Labour Market Outcomes

Neryvia Pillay, Chloe Allison, Kathryn Bankart

South Africa's labour market is characterised by very high unemployment rates, particularly among the youth. It is thus vital to understand which policies can improve labour market outcomes. In this paper, we study whether grant eligibility in childhood leads to improved labour market outcomes for adults aged 24–26 years. Many studies have investigated the contemporaneous effects of cash transfers on labour market outcomes, but relatively few have examined the long-run effects of childhood cash transfer receipt. We contribute to this literature by studying the effect of South Africa's child support grant (CSG) on labour market outcomes in young adulthood. Among the poorest households, total CSG receipt accounts for an average of 40% of total household income (Delany et al. 2008). Since its introduction in 1998, the age-eligibility threshold for the child support grant was progressively extended from children under 7 to children under 18. Making use of household survey data, we use a difference-in-difference identification strategy that exploits the variation in grant eligibility across age groups generated by these age-eligibility changes to study how cash transfers in childhood can affect long-run labour market outcomes. We study three different measures of childhood grant eligibility. The first is an indicator variable that simply captures whether or not an individual was eligible for the CSG during their childhood. The other two variables are continuous measures that reflect varying treatment intensity: the total number of months of CSG eligibility during childhood and the total rand value of grant exposure during childhood (in log-constant 2021 rands). We find that none of the CSG measures has a significant effect on labour market outcomes in young adulthood, but we do find evidence of a negative effect on male labour market participation and wages.

Parallel Session E2: Social Security and Labour Market Policies

Six Years On: Evaluating the Labor Market Effects of South Africa's National Minimum Wage

Haroon Bhorat, Benjamin Stanwix, Timothy Köhler

The National Minimum Wage (NMW) serves as a key progressive policy in South Africa, aiming to generate income gains for low-wage workers while simultaneously avoiding any adverse associated outcomes. Since its introduction in 2019, the NMW has undergone five increases ranging between 0 - 3.2% in real terms, each within a challenging and varying economic context. It is plausible that the size and direction of effects have varied over time due to, for instance, the duration that the new NMW level has been in place; differences in the size of the NMW increase; the new NMW level compared to the wages of sub-minimum workers; and, of course, differences in the macroeconomic environment. Empirical evidence on labour market effects, however, remains scarce. Moreover, previous evaluations of year-specific adjustments are not directly comparable to one another due to different methods and data, and due to data and time constraints, have only been able to estimate short-term effects. This paper is the first to conduct a comprehensive micro-econometric analysis of the labour market effects of all NMW adjustments from 2019 - 2024, with the exception of 2020 and 2021. By applying a consistent set of difference-in-differences designs on reliable wage microdata not available in the public domain, this approach holds at least four advantages. First, our consistent research design and data allow for comparability across each adjustment, validation of the credibility of our research design, and the provision of a comprehensive review of what we know so far. Second, it allows for the estimation of longer-term effects, which can inform future evaluations which may only be able to estimate short-term effects due to time and data constraints. Third, it allows for the examination of the relationship between the size and sign of effects versus the size of the NMW adjustment. Fourth, it allows for the examination of the roles of broader economic phenomena in influencing the policy's effects.

Parallel Session E3: Currencies and Investment

Central Bank Digital Currency: The Relevance and the Challenges of Achieving the Value Propositions in Africa

Meshach Aziakpono, Wendy McCallum

Globally, there is a growing interest in Central Bank Digital Currencies (CBDCs). In Africa, they are heralded as a panacea, promising increased payment diversity, enhanced financial inclusion through affordable digital transactions, streamlined cross-border payments, safeguarding monetary sovereignty, improved monetary policy, supporting fiscal transfer, and mitigating currency risks, among other benefits. Encouraged by these prospects, Nigeria introduced the eNaira in October 2021, becoming the world's second CBDC after the Bahamian Sand Dollar. Ghana and Tunisia are in pilot phases, with numerous other African nations in the research stage. Against this backdrop, this paper explores the potential and relevance of CBDCs in Africa. It conducts a diagnostic analysis juxtaposing potential challenges with the value propositions of CBDC vis-à-vis other private digital money. The results paint a bleak picture of CBDC's success in Africa. The paper urges African Central Banks to exercise utmost caution in CBDC launches.

The Application of Machine Learning to Sovereign Credit Ratings Prediction: A Comparative Analysis

Christian Timmerman, Krige Siebrits

This paper explores the application of machine learning to predict sovereign credit ratings, focusing on the efficacy of a multilayer perceptron (MLP) model compared to traditional econometric methods like ordered logit regression. Sovereign credit ratings, provided by agencies such as Moody's, SP, and Fitch, significantly influence a nation's access to international capital and borrowing costs. Yet, these ratings often lack transparency and have faced criticism for procyclicality and issuer-pay biases. Leveraging data from 50 countries between 2013 and 2023, this study incorporates a diverse set of economic, political, and financial indicators to address the nonlinear relationships present in sovereign risk assessments.

The results demonstrate the MLP model's superior predictive accuracy, achieving 60% exact match and 94% accuracy within two rating levels in random cross-validation, compared to 30% and 75% for the ordered logit model. Additionally, Shapley Additive Explanations (SHAP) values are utilized to rank the importance of key determinants, revealing that regulatory quality, GDP per capita, and debt metrics are critical in predicting sovereign credit ratings. The study underscores the potential of artificial intelligence to enhance the transparency and robustness of sovereign risk assessments, while also highlighting the challenges of interpreting complex machine learning models.

This research contributes to the growing literature on applying AI to economic problems, providing policymakers and financial analysts with tools to better understand and predict sovereign credit ratings amidst evolving global financial dynamics

Parallel Session E3: Currencies and Investment

Investment Portfolio Optimization: A Comparative Analysis of Traditional and Machine Learning methods

Takudzwa Makuwa, Meshach Aziakpono, Delon Tarentaal

Globally, there has been a rapid increase in machine learning (ML) integration within the financial field due to its ability to analyse big data and learn complex patterns to make informed decisions quickly compared to traditional practices. Recently, there has been growing evidence among investment professionals suggesting that 86% of investors use ML to optimize portfolio allocation and risk management since it performs better than traditional methods in one survey. However, another survey indicated that 66% of investors do not agree. While South Africa has surged in research regarding the use-case of machine learning since 2016, it has yet to explore ML's impact within the investment context fully. This study investigates which traditional or ML approaches yield the best-performing portfolio, focusing on sectoral diversification. The study uses daily observations from 30 September 2019 to 30 September 2024 to construct 20 portfolios from randomly selected 27 stocks. There are four traditional and machine learning methods, respectively, that are considered. The study performs predictive analysis and portfolio performance using six different portfolio units of measurement. The study finds that the machine learning component, which consists of a linear regression model with an equal-weighted portfolio, outperformed traditional methods and their portfolios based on aggregated composite scores. The study's outcome recommends that South African investment professionals integrate ML into their investment strategies as it would be a rewarding opportunity.

Delistings from the JSE: Determinants and Drivers

Leigh Neethling, Ayesha Sayed

Stock markets play a vital intermediary role in modern economies, channeling capital from financial markets to productive enterprises. The efficiency of this intermediation affects economic growth, job creation, innovation, and wealth generation. While delisting trends have been extensively studied in developed markets, there is limited understanding of this phenomenon in emerging economies. This study investigates the determinants and drivers of delistings from the Johannesburg Stock Exchange (JSE) - Africa's largest stock exchange and the 19th largest globally by market capitalization covering the period 2002-2022.

We find that net delistings contrast sharply against developed market experiences. We employ an empirical framework incorporating both cross-sectional and fixed effects models to examine three broad blocks of determinants: firm-specific factors, capital market indicators, and macroeconomic variables. This research contributes to our understanding of stock market dynamics in emerging economies, where institutional contexts and market structures differ markedly from developed markets. Our findings have important implications for policymakers and market participants concerned with maintaining robust public markets that effectively support economic development.

Parallel Session E4: Topics in Macroeconomics and Development

The Fiscal Theory of Income Distribution in Action: South African Low-income vs. High-Income Earners Response to Fiscal Policy Shocks

Talent Zungu

This study seeks to test the fiscal theory of income distribution in action in South Africa using low- and high-income earners, covering the period 1979–2022, using the Bayesian Vector Autoregression (BVAR) model with hierarchical priors. This study examines the impact of fiscal policy on income distribution among low-income and high-income earners. The results are interesting as they show that the impact of the Fiscal Theory of Income Distribution depends on the level of income, as the finding shows that for low-income earners, an unexpected increase in government expenditure decreased income inequality, while for the high-income, it exacerbated income inequality. While on the side, taxation is found to play a significant role in reducing income inequality for the high-income earners model, while for the low-income earners it was found to contribute to income inequality. The lagged response suggests that expectations and market dynamics play a crucial role in reducing income inequality regardless of income level. This study suggests that South Africa should adopt a balanced tax policy by combining progressive income taxes with targeted regressive taxes, while offsetting the burden on low-income groups through rebates, credits, and social programs. This would ensure an equitable distribution of burdens across income levels, with revenue from progressive taxes used to fund social welfare programs, such as education, healthcare, and affordable housing. This approach could reduce the wealth gap, promote social mobility, and create a more just society, making it an effective solution for income inequality in the country.

Parallel Session E4: Topics in Macroeconomics and Development

Income Poverty Decomposition and Pro-Poor Growth in South Africa Using the General Household Survey (2010–2022)

Thonaeng Charity Molelekoa, Abayomi Samuel Oyekale

Despite being highly developed and industrialized, South Africa is one of the most unequal countries in the world. The interplay of poverty and inequality has mandated conscientious efforts towards a clearer understanding of the pro-poorness of economic policy interventions over the past few years. This study adds to current literature by decomposing poverty changes into their growth and redistribution components and computing pro-poor growth indices. The data were the General Households Survey (GHS) for 2010–2022. The income data were adjusted to the 2022 base year using annual inflation rates. Poverty incidences were examined based on three poverty lines - R663 (April 2022 poverty line), R945 (lower bound poverty line) and R1417 (upper bound poverty line). The Shapley and Datt and Ravallion approaches were used for poverty decomposition, and Pro-Poor Growth Indices (PPGI) were computed. The results showed that per capita Gini inequality indices were generally high (>0.6). Also, per capita income and total income showed the highest inequality in 2020 with Gini coefficients of 0.808 and 0.953, respectively. Using the R663 poverty line, poverty incidence was highest in 2021/2022 at 45.37% and lowest in 2014 at 21.56%. Using the Shapley decomposition, growth generally increased poverty in all periods except in 2016/2017, 2020/2021 and 2021/2022, while redistribution increased poverty in 2011/2012, 2012/2013, 2017/2018, 2020/2021 and 2021/2022. Also, the Kakwani and Pernia (2000) PPGI showed that across all the poverty lines, poverty incidence was pro-poor ($PPGI > 1$) in 2011/2012, 2014/2015, 2016/2017 and 2017/2018. However, in 2018/2019, growth was pro-poor under the poverty of R945 and R1417. It was concluded that growth has not been largely pro-poor in South Africa, and emphases should be placed on economic reorientation that ensures optimum realization of the dividend of economic growth by the poorest segments of the population.

Parallel Session E4: Topics in Macroeconomics and Development

Duration of Unemployment and Economic Growth in South Africa: An ARDL Analysis

*Reotshepile Lofedi, **Kebitsamang Sere***

Unemployment and low economic growth are one of the major macroeconomic challenges of developing countries, and the South African economy is no exception. Since the dawn of democracy, the unemployment rate has been on the rise while economic growth has been declining. Although numerous studies have determined the relationship between unemployment and economic growth, it is crucial to determine the relationship between the duration of unemployment and economic growth in the economy. Unemployment duration can be divided into short term unemployment and long-term unemployment. According to Statistics South Africa (2024:18) "Persons in long-term unemployment are those individuals among the unemployed who were without work and trying to find a job or start a business for one year or more". The study seeks to contribute to the literature by examining the relationship between unemployment duration and economic growth in South Africa, utilizing quarterly data from Statistics South Africa for the period 2008Q2 to 2024Q2. The study employed the Autoregressive Distributive Lag (ARDL) approach to examine both the long-term and short-term unemployment duration and economic growth in South Africa. The results found from the bound cointegration test indicate that there is a long run relationship between unemployment duration and economic growth. The results also revealed that there is a negative and insignificant relationship between unemployment duration and economic growth. The study therefore recommends that to address the issues of unemployment and low growth in South Africa, there should be policies in place to foster economic growth while reducing unemployment duration in the economy. These policies should create jobs that are labour intensive to support economic growth.

Parallel Session E4: Topics in Macroeconomics and Development

Institutions, Infrastructure Investment and Economic Growth in the Southern African Development Community

Gabila Nubong, Lerato Ntuli

This study therefore set out to establish whether there is a long-term relationship between infrastructure investment proxied by gross fixed capital formation and the economic growth of the Southern African Development Community. The study employed the panel autoregressive distributed lag (ADRL) model and the error correction model (ECM) model to examine the long-run and short-run relationships between gross fixed capital formation and economic growth alongside other explanatory variables. The role of institutions on infrastructure investment and economic growth revealed that inflation, the unemployment rate, imports, and control of corruption have a negative relationship with economic growth in the long run, whereas gross fixed capital formation, exports, rule of law and government effectiveness have a positive relationship with economic growth in the long run. The error correction model reveals that gross fixed capital formation, imports, exports, control of corruption, rule of law, and government effectiveness have a positive and significant impact on economic growth in the short run. The growth of the economy is also negatively impacted by inflation and unemployment in the short run. Therefore, one can conclude that the variables of the study do not revert to equilibrium, and in this regard, institutions do not have an impact on infrastructure investment and economic growth in the short run. However, examining the determinants of infrastructure investment, found that inflation, unemployment, and exports have a negative relationship with infrastructure investment in the long run, whereas economic growth, imports, control of corruption, rule of law and government effectiveness have a positive relationship on infrastructure investment in the long run. The results of the study suggest that institutions are important for both infrastructure investment and economic growth in the long run for the Southern African Development Community.

Parallel Session E5: Mental Health

Formal Housing and Mental Health in South Africa

Tsepang Khumalo, Marisa Von Fintel, Ronelle Burger

Housing programmes aimed at improving the living standards of the inhabitants of informal settlements continue to grow. Yet, the evidence of the impact of these programmes on mental health outcomes remains limited, despite the potential pathways between housing and mental health and the strong evidence of the long-term impact of mental health on human capital. This study addresses this gap in the literature by investigating the impact of a large-scale government housing programme on mental health in a low-and-middle income country. We exploit the quasi-random allocation of the subsidised houses using staggered Difference-in-Differences to estimate the immediate and long-run impact of the programme on depressive symptoms. Our results indicate that the receipt of a formal, brick-and-mortar house, reduces depressive symptoms by 0.785 points (on a scale of 0 to 30), with stronger effects observed among individuals who moved from an informal house compared to those who moved from a formal house. The mediation analysis suggests that these effects are primarily driven by access to basic sanitation and improved housing quality. These findings underscore the importance of evaluating housing programmes using well-being indicators such as depressive symptoms as these outcomes can affect human capital in the long run.

An Investigation of the Debt-Depression Relationship Using South African Panel Data

Tsholofelo Setati

This paper examines the relationship between debt (debt-to-asset ratio) and mental health (CES-D-10 and subscales) in South Africa using longitudinal data from the National Income Dynamics Study. While existing research has documented associations between financial strain and psychological well-being, most evidence comes from high-income countries, leaving critical gaps in understanding these dynamics in developing economies. Using First Differences estimation and Instrumental Variables approaches with inheritance and government grants as instruments, both social drift (debt affecting mental health) and social selection (mental health affecting debt) hypotheses are investigated.

The analysis reveals significant bidirectional relationships between debt-to-asset ratios and depressive symptoms. An increase in the debt-to-asset ratio is associated with a 1.212 unit increase in CES-D-10 scores ($p < 0.05$), while higher CES-D-10 scores predict small but significant increases in debt-to-asset ratios (coefficient=0.002, $p < 0.05$). The relationships vary across different subscales, with particularly strong associations observed for positive affect. Instrumental variables analysis using government grants yields more precise estimates than inheritance, suggesting significant negative effects of debt-to-asset ratios on CES-D-10 scores (-8.517, $p < 0.10$) and depressed affect (-2.964, $p < 0.05$) among grant-eligible populations.

These findings contribute to the understanding of how social drift, selection, and broader social causation mechanisms operate in the debt-mental health relationship in developing economies. The heterogeneous effects across different mental health dimensions indicate that these mechanisms may operate differently across psychological domains. These results have important implications for integrated policy approaches that address both financial and psychological well-being, particularly in contexts of high inequality and limited mental health resources.

Parallel Session E5: Mental Health

Gendered Effects of Household Income Loss on Mental Health: Exploring Heterogeneity and Mechanisms in a Developing Country Context

Uma Kollamparambil, Adeola Oyenubi

While there is increasing acceptance of a bidirectional relationship between income/income loss and mental health (Ridley et al., 2020), evidence on the role of gender in the causal relationship between income and mental health is mixed (Thomson et al 2022). The mixed results are indicative of significant heterogeneity within the gendered effects between income and mental health which this study aims to explore.

Using five waves of National Income Dynamic Study (NIDS) data over 2008-2017, this study first analysed the effect of household income loss on mental health and then explored gender-wise variation in this, using a staggered difference-in-differences (De Chaisemartin & d'Haultfoeuille, 2021) estimation. The analysis accounted for possible reverse causality through the sample design as well as robustness check through heteroscedasticity based internal instrument approach (Lewbel 2012). Following this, the study undertook an in-depth analysis into the heterogeneity beyond the averages in the gender gap in mental health using sorted effects analysis (Chernozhukov et al 2018) with a view to explore the mechanisms that explain the variation in gender gap in the mental health impact of household income loss. Two main, albeit interlinked, channels are explored viz., labour market and household composition factors to explain why men and women experience the mental health impact of household income loss differently. The findings of the study suggest that while household income loss leads to mental distress, this effect is driven primarily by the female population. Moreover, household income volatility and household composition factors were identified as significant contributors to gender gap in the mental health impact of household income loss. Additionally, urban location, marital status, informal settlement dwelling were contributors to the gender bias. The results point to the need for policy to integrate women into employment with better income stability.

Parallel Session E5: Mental Health

Divergence in the size and composition of the race gap in mental health: Evidence from South Africa

Dorrit Posel, Adeola Oyenubi

Numerous studies of mental health in South Africa have found that Africans report significantly more depressive symptoms or more psychological distress than other adults (e.g. Williams et al. 2007; Williams et al. 2009; Ardington & Case 2010; Burger et al. 2017; Mungai & Bayat 2019; Harriman et al. 2021). However, as a recent study by Harriman et al. (2021) notes, insufficient attention has been paid to differences among Africans, and to the distribution of depression among Africans compared to the distribution among other groups. Rather, studies both in South Africa and abroad, typically investigate average differences in the symptomology of depression or distress. In this paper we use data on mental health collected in the National Income Dynamics Study to further explore the association between race and mental health in South Africa. We estimate recentred influence function (RIF) decompositions (Firpo et al. 2009; Firpo et al. 2018), which allow us to decompose the race gap at each unconditional quantile of the distribution in depression scores. As the decompositions distinguish between the contribution of characteristics and the ‘influence’ of characteristics, they can be used to test two key hypotheses that have been put forward to explain race differences in depressive symptomology (George & Lynch 2003). The first is the “differential stress” or the “stress exposure” hypothesis, viz. that race gaps in depressive symptoms arise because Africans are confronted with greater levels of stress or adversity than other adults. The second is the “differential vulnerability” hypothesis, viz. that for any given level of stress, Africans exhibit stronger responses. Given persistent overall race differences in socio-economic status and spatial geography, key potential stressors we consider capture access to income and assets, location, and indicators of adverse events.

Parallel Session E6: Behavioural Economics: Preferences and Choice

Interdependence of Social Preference Types: Insights from Economic Experiments

Celeste Campher, Sevias Guvuriro, Frikkie Booysen

With the aid of three economic experimental tools, we model a range of social preferences to provide a more nuanced argument challenging the logic of self-interested and rational behaviour. We use the subjects' responses in Ultimatum and Trust Games to categorise the subjects according to six different social preferences, namely: fair, greedy, trustful, egalitarian, reciprocity and trustworthy. Further, we use the Social Discounting Task to measure altruism, another type of social preference. Consequently, the paper determines the prevalence of the identified social preferences and investigates the extent to which altruism is associated with the other six social preferences. As far as it could be ascertained, to date no studies have employed these three canonical experimental tools alongside each other with the aim of investigating the association between different social preferences categories. For this purpose, both descriptive analysis and regression analysis are employed. In line with expectations, altruism is found to be associated with egalitarianism and reciprocity and not with greedy

Investigating Behavioural Predictors of Healthcare Decisions

Sizakele Muyedzwa

Health-related decisions are made under stress, with complex information; and often involve immediate costs, delayed benefits and uncertainty. These factors make the decisions susceptible to behavioural biases and preferences. There is limited research on how behavioural factors relate to preventative healthcare decisions, especially in developing countries. This study helps address this gap by assessing the correlation between risk aversion, present bias, impatience and choice overload, and preventative healthcare uptake in South Africa. Using a sample of 1007 respondents, which aligned to national demographics for gender and race, we conducted an online survey employing experimental measures evaluating participants' levels of risk aversion, present bias, impatience, and choice overload. Additionally, we collected self-reported data on participants disease testing and COVID-19 vaccination uptake. Our regression results indicated that choice overload was negatively associated with the likelihood of undergoing more disease tests than the sample average within 12 months, and the likelihood of receiving the COVID-19 booster. Contrary to the longstanding idea that present bias impedes long-term health investments, we found present bias to be positively correlated with the probability of receiving the COVID-19 vaccination. Consistent with recent literature on COVID-19 vaccination uptake, we attributed this unexpected finding to individuals perceiving the immediate benefits of receiving the vaccination, such as increased social and economic activities, to outweigh the immediate costs, including side effects or mistrust about the vaccination's rapid roll-out. We found no significant links between impatience or risk aversion and preventative care uptake. This exploratory research illustrates the role of behavioural factors in healthcare decisions. It offers a foundation for future research to unveil practical insights for enhancing preventative care utilisation.

Parallel Session E6: Behavioural Economics: Preferences and Choice

An Evolutionary Perspective on Good and Bad Reputations in the Ultimatum Game

Melt van Schoor

In the ultimatum game (UG), one player, the proposer, makes a take-it-or-leave-it offer to a second player, the responder, who gives a simple accept/reject response. The payoffs are the proposed division, if the responder chose to accept, or zero for both players, if the second player refused. It is well known that data for experimental studies of the UG generally fail to provide support for the dual hypothesis that behaviour is rational and preferences are fully characterized by present monetary payoffs: real-world proposed splits are relatively egalitarian and very low positive offers are often rejected. It is possible that subjects may have an ingrained concern with their reputations that are often triggered even in settings where the framing suggests a once-off anonymous interaction. In this paper I use evolutionary models to investigate whether allowing responders to build reputations can create the necessary incentives for higher offers and higher acceptance thresholds. However, a reputation for rejecting low offers can only be established if there is a sufficient frequency of low offers to reject, thus information must be treated as endogenous. A general theoretical endogenous-information framework is developed to calculate endogenous information equilibria in two-player population games, where the available information is consistent with the pattern of action profiles induced by it for any given strategy profile. The framework is used to explore the evolution of different types of reputation-building behaviours for responders in the UG, including negative reputations that harm responders when observed and positive reputations that benefit them when observed. It is shown that the different reputation mechanisms are complementary and can lead to a stable pattern of relatively equal divisions and rejections of low offers, consistent with observed behaviour in experimental studies in the ultimatum game.

Social Discounting Dynamics and Subject-Recipient Characteristics: A Comparative Study of Staff and Students

Celeste Campher, Sevias Guvuriro, Frikkie Booysen

The social discounting task is an experimental tool widely used by researchers to measure social discounting, a summary measure of human altruism. Comparative social discounting studies employing the SDT amongst different subject groups and collecting information on subject-recipient relationship characteristics are limited. This study compares social discounting amongst students and staff at some university in a Non-WEIRD country, and examines the extent to which the characteristics of subject-recipient relationships differ between these subject groups at different social distances. While no difference is reported in social discounting, the two subject groups selected very different recipients, which imply that although the two sets of subjects exhibit similar levels of altruism, the consequences of this altruism may be quite different insofar as those who benefit from the prosocial behaviour are distinctly different in nature. This finding illustrates that similarities in aggregate experimental pro-sociality outcomes between subject groups may obscure nuances in altruistic propensities.

Parallel Session F1: RESEP Special Session: New Insights into Educational Outcomes in South Africa Using Routinely Collected Data

Can Quality Early Learning Programmes Attenuate Socioeconomic Effects on Child Cognitive Outcomes in South Africa?

Jesal Kika-Mistry

Socioeconomic disparities in cognitive outcomes emerge in South Africa before formal schooling, underscoring the critical role of quality Early Childhood Care and Education (ECCE) in addressing learning inequalities. Using the 2021 Thrive by Five Index and Baseline Assessment data, this is the first study in South Africa to explore how structural and process quality factors influence early learning outcomes, with a focus on the role of teacher-child interactions in mitigating socioeconomic disparities. Results from multiple regression analyses and Conditional Inference Trees show that teaching strategies—a key aspect of process quality—significantly predict cognitive outcomes but only partially mitigate disadvantages associated with lower socioeconomic status (SES). Dominance Analysis reveals that child age, SES, and height-for-age growth status are stronger predictors of learning outcomes than teaching strategies. Moreover, the effectiveness of teaching strategies is enhanced when the structural quality of an ECCE program is higher, where structural quality serves as an important precondition for better process quality. Finally, having a qualification relevant to ECCE matters for better teaching strategies. While not causal, these findings highlight the importance of improving both structural and process quality in ECCE to reduce early inequalities in cognitive outcomes and emphasises the need for more robust empirical research not currently possible with existing data.

An Inefficient Intervention or a Necessary Catch-Up Opportunity? Estimating the Causal Impact of Early Grade Repetition in South Africa

Ros Clayton

In South Africa, early grade repetition is often used as a remediation strategy, and repetition rates are higher than in other sub-Saharan countries. This study estimates the causal impact of repetition in Grade 1 and Grade 4 on learners' Home Language outcomes by applying a regression discontinuity design to school-based assessment data for six provinces. Two longitudinal datasets are created (one for Grades 1-4 and one for Grades 4-7) which track learners as they progress through the grades. The official pass mark of 50% in the Home Language subject is used to create a local randomisation point for learners scoring Home Language marks around this point. Early results suggest that grade repetition improves next-grade outcomes substantially amongst these learners, and repetition in the first year of the phase is more effective than later repetition. Females benefit more from repetition than males. The positive impact of repetition attenuates over the years, although it remains significant by the start of the next schooling phase. These tentative results support an examination of the commonly applied practice of "pushing learners through" to the next grade, either through artificial grade inflation or by awarding a condoned pass despite official failure of a subject. However, it remains to be shown whether repetition is the most efficient remediation strategy for these learners.

Parallel Session F1: RESEP Special Session: New Insights into Educational Outcomes in South Africa Using Routinely Collected Data

Greater Than, Less Than, or Equal To? Investigating Gender Achievement Gaps in Secondary School Mathematics Before, During, and After the COVID-19 Pandemic

Angela-Euston Brown

The COVID-19 pandemic disrupted education systems worldwide and exacerbated existing inequalities. This study examines gender achievement gaps in Mathematics performance before, during, and after the pandemic in one of South Africa's richest provinces - Gauteng. The use of a large administrative dataset, spanning six years (2018 to 2023) and four grades (Grades 9 to 12), provides a unique opportunity to follow learners longitudinally. A triple difference-in-differences estimation strategy is employed on three balanced panels of Grade 11 to 12 learners, representing the 2019, 2021, and 2023 matric cohorts. The cross-sectional analysis shows that the gender gap shifts in favour of boys as learners progress from Grade 9 to Grade 12, consistent with prior findings. However, during the COVID-19 and post-COVID-19 years, the pro-girl gender gaps in Grades 9 and 10 and the pro-boy gender gap in Grade 11 shift in favour of girls relative to pre-pandemic years. In contrast, the pro-boy gender gap in Grade 12 remains largely unchanged from 2018 to 2023. The longitudinal analysis finds that the pro-boy gender gap in Grade 11 increases further in favour of boys in Grade 12, especially for the COVID-19 and post-COVID-19 cohorts. With a focus on Gauteng, these findings contribute new evidence to the understanding of gender gaps in Mathematics in South Africa, while tentatively suggesting that COVID-19-related educational disruptions and assessment policy changes had a gendered impact on academic performance.

Parallel Session F1: RESEP Special Session: New Insights into Educational Outcomes in South Africa Using Routinely Collected Data

Matric Achievement in South Africa: What Determines It, and Can We Explain Its Changes Over Time?

Rebecca Selkirk

Despite the importance of the National Senior Certificate (NSC) Examination in South Africa, the determinants of NSC achievement and its changes over time remain largely unexplored. This paper aims to investigate the factors associated with NSC achievement and to determine how associations may have varied over time, especially during the pandemic years where repetition rates underwent large changes. It also investigates how much of the change in NSC achievement over time can be explained by observable changes in cohort characteristics. National learner-level NSC data is used, with a focus on key years and separate analysis for Quintile 1 to 3 and Quintile 5 schools. NSC achievement is defined to be candidates' average mark across their written subjects (excluding Life Orientation), and a number of learner and school characteristics are investigated as possible determinants of achievement. Ordinary Least Squares (OLS), school Fixed Effects (FE) estimation, and Oaxaca-Blinder decompositions are the methodologies employed in the analysis. Approximately 50% of NSC achievement in individual years can be "explained" by the study's OLS models, driven by academic ability and—to a lesser extent—overage status and school quintile. A number of factors are shown to be associated with achievement, but associations vary too much to infer reliable relationships. Changes in age profiles and subject choice only partially account for changes in achievement over time, with a far larger share of changes being unexplained, potentially reflecting factors such as educational quality improvements. Surprisingly, factors outside of the model improved for poorer schools during the pandemic, but deteriorated for Quintile 5 schools. Such inconclusive or counterintuitive findings highlight the need for improved data and contextual information surrounding the NSC, and the paper offers guidance for further research and policy development

Parallel Session F2: Energy and Water

Exploring the Nexus Between Financial Development and Renewable Energy Consumption in South Africa

Hlalefang Khobai, Anton Van Wyk

Global warming and the poverty of many nations continue to pique interest in studying the global causes of economic growth in order to formulate appropriate policies for long-term development. There is mounting evidence that poorer countries are more adversely affected by climate change due to a lack of resources for climate protection, resulting in lower production and worsening health (McMichael et.al. 2003). When it comes to variables that increase the standard and quality of life while also boosting economic growth, energy is the most important aspect. Energy is considered as an essential resource for human survival, economic development, social progress, and long-term development (Kaygusuz, 2012). Despite being the dominant source of energy in the global energy balance, traditional energy is the primary source of carbon dioxide (CO₂) greenhouse gas emissions into the environment. One of the most important measures used to reduce CO₂ emissions was found to be promote renewable energy sources (RES). The renewable energy system is becoming more popularly viewed as an investment that can offer economic benefits by reducing reliance on fossil fuels imported, improving health safety and air quality, expanding access to energy security, and enhancing economic growth and cutting unemployment. However, financial concerns are invariably a concern in this sector. therefore, this study examines the nexus between renewable energy and financial development in South Africa for the period between 1990 and 2023. The Autoregressive Distributed Lag (ARDL) bounds test approach will be employed to assess the long-term linkage among the variables while the Vector Error Correction Model (VECM) Granger causality test will be employed to explore the causality between the variables.

Parallel Session F2: Energy and Water

Access to Electricity and Household Air Pollution: Evidence from the Western Cape Province, South Africa

Marisa von Fintel, Ronelle Burger, Jack Grimston

Access to clean energy for cooking and heating has increasingly been recognized as an important contributor to the overall well-being and health of individuals in low-income settings. However, large numbers of households remain without access to clean energy and are necessitated to make use of unsafe energy. This practice leads to increased air pollution in and outside the home, which has been associated with a range of adverse health outcomes, including respiratory infections. Causal evidence of the impact of unsafe energy use and the health of individuals in low-income communities is scarce. We contribute to this literature by making use of a natural experiment in South Africa where electricity supply was routinely switched off during planned blackouts, or loadshedding. We use data from a larger study in which Purple Air air quality monitors were installed in 10 households in urban settings in the Western Cape province of South Africa. The monitors continuously measured and transmitted PM_{2.5}, indicative of air pollution, in 2-minute intervals for a period of 12 to 18 months. We exploit the planned loadshedding blackouts as exogenous shocks and make use of a differences-in-discontinuities approach to estimate the causal impact of the lack of access to clean energy on indoor air quality. Quantitative evidence from the corresponding survey used in the broader study indicates that individuals substitute to unsafe energy such as paraffin and wood, during times of planned blackouts, specifically if it occurs just before or during traditional meal times or at night. Using the difference-in-discontinuities approach and the high-frequency air quality data, we are able to treat the 2-minute intervals before and after the commencement of loadshedding as a discontinuity in time, and days in which no loadshedding took place as the counterfactual.

Parallel Session F2: Energy and Water

Spatial Disparity in Water Service Preferences: Evidence from Townships and Suburbs in Durban, South Africa

Genius Murwirapachena, Johane Dikgang

Water utilities in developing nations encounter substantial obstacles in revenue collection, impeding sustainable service provision and advancement towards Sustainable Development Goals. This study analyzes families' expressed preferences and willingness to pay for enhanced water services in Durban, South Africa, utilizing data from 498 households categorized by suburbs and townships. Mixed logit models demonstrate both consistencies and discrepancies across spatial layers. Suburban families have pronounced preferences for enhanced tap placement, water pressure, and quality, yet their willingness to pay estimates lacks statistical significance. Conversely, township residents exhibit a notable readiness to pay for service enhancements, averaging an additional \$23.78 monthly. The research indicates that tap position, water pressure, and water quality substantially affect household utility in urban and suburban areas, with more pronounced coefficients in suburban regions. Cost sensitivity is evident solely in township households, although water supply reliability is negligible in both groups. Age consistently influences utility across strata, although the effects of other biographical factors differ with region. The findings indicate the possibility for enhanced income generation through service enhancements in townships, where numerous households presently get subsidized services. This work is a foundation for further research advocating for evidence-based water policymaking in underdeveloped nations, where utilities frequently encounter difficulties in revenue collection that impede sustainable service delivery.

Parallel Session F3: Banking

Estimating Bank Substitutability in the Personal Transactional Account Market in SA

Dumakude Nxumalo, Steve Koch

Research into South African retail banking has sought to assess the level of competition in banking markets without accounting for the degree of substitutability between banks in well-defined markets. We combine consumer survey data with a constructed dataset of bank prices to estimate South African customer demand for personal transactional accounts using a flexible discrete choice model. We find evidence of bank substitutability between the personal transactional accounts offered by a relatively recent entrant and incumbent banks. We also find evidence of consumer responsiveness to price increases that differ across banks. These results are particularly interesting when contrasted with findings from a 2006-2008 banking market inquiry that was initiated by the Competition Commission of South Africa. They found limited evidence of competitive outcomes in the personal transactional account market. Our results suggest that there has been an improvement in competitive outcomes in this market over time.

Trends in Bank Selection Criteria

Johan Coetzee

This study investigates the selection criteria that different generations of customers use when selecting a bank for the first time. The study considers different cohorts since 2011 and explores how the criteria have changed over time given developments in technology, away from traditional brick-and-mortar channel criteria. Structural Equation Modelling was used to identify behaviours driving bank selection and comparisons are made between different cohorts. The major findings of the study illustrate the explicit move of bank customers to more technology-driven reasons to select a bank. Furthermore, convenience was found to be a major driver and also illustrates the changing definition of convenience by customers over the past two decades. The study makes a contribution to the understanding of how customers initially engage with banks, which in turn are important considerations for the distribution network strategy banks use with increasingly more tech-savvy clientele.

Parallel Session F3: Banking

The Impact of Economic Policy Uncertainty and Bank Competition on the South African Banking Sector and Financial Stability

Sibusiso Mthembu, Ilesanmi Kehinde Damilola

The banking sector plays a crucial role in the stability of the financial system and banks, so its stability is important. This study examines the impact of economic policy uncertainty (EPU) and bank competition on the stability of the South African banking sector and overall financial stability. The study aims to understand how policy fluctuations due to uncertainty and competition in the banking sector affect financial stability in South Africa. The study followed a panel data approach for 2006-2022, and the System Generalized Method of Moments (System GMM) is used to address endogeneity issues and provide robust estimates of the relationships examined. Furthermore, the Granger causality test is applied to explore the causal link between EPU and bank competition, this test offers insights into the directional influence between these variables. The anticipated results suggest that EPU has a negative impact on financial stability, while higher competition has a positive effect on stability. The findings of this study provide crucial implications for policymakers and financial regulators in designing strategies to mitigate risks and enhance the banking sector's stability.

Parallel Session F4: Topics in Macroeconomics

Donations And Tax Incentives. Evidence From South Africa

Fadzayi Chingwere, Nicky Nicholls, Eleni Yitbarek

This study examines the impact of tax incentives on charitable donations within South Africa, with a focus on donations declared on individuals' tax returns. Leveraging the universe of South African tax administrative data spanning over a decade (2011-2021), we apply the bunching approach to assess how individual taxpayers respond to donation tax incentives. South Africa's tax policy allows individuals to deduct up to 10% of their taxable income for contributions made to approved Public Benefit Organizations, with the option to carry forward any excess donations for potential deductions in future years. Our findings indicate significant bunching at the cap, demonstrating a considerable tax price elasticity of giving at the intensive margin, which suggests a high responsiveness of charitable donors to tax incentives. Variation in bunching patterns has been observed across different demographics, such as gender, age, and income percentiles. We also estimate the heterogeneous implied tax price elasticity of donations. The findings show that the implied tax price elasticity of donations was higher for females than for males. The study also finds that the working age individuals and the less wealthy showed higher responsiveness to the tax incentive. Although only a small proportion of taxpayers report donations and we are not able to determine whether additional donations are made but not reported, our results suggest that tax deduction incentives could increase charitable donations.

Public Debt Valuation Puzzle in the Context of an Emerging Market: South Africa

Mzuvukile Skwatsha

Economic theory through the budget constraint (with some simplifying assumptions) constrains the market value of the sovereign debt to the expected present discounted value of the current and future primary surpluses. Zhengyang et al. (2024) in their examination of the US public debt valuation found evidence that the US bond market investors either fail to enforce the no-arbitrage restriction imposed by the government intertemporal budget constraint or possibly underscore the value of convenience yields (which also captures the nonpecuniary benefit characteristic of the US government bonds). The existing literature underscores or ignores the importance of including discount rates (as a proxy for risk) and forecasts associated with fiscal surpluses that are primarily determined by risky variables (with cyclical and long-term dynamics): tax revenue and government spending. Similarly to Zhengyang et al. (2024), we use the asset pricing model to examine the existence of this discrepancy or privilege for the South African sovereign bond markets from 1993 to 2023.

Parallel Session F4: Topics in Macroeconomics

The Effect of Interest Rates on the Demand for Mortgage Credit in South Africa

Allan Davids, Gemma Earl

This paper uses novel and detailed mortgage origination data to estimate the interest rate elasticity of mortgage demand in South Africa. We find that homebuyers increase the size of the mortgage they take out by 2.8 percent in response to a 1 percentage point decrease in the prime interest rate. Additionally, we explore the effect on housing demand since homebuyers may adjust their housing preferences when interest rates change. We find that homebuyers purchase 2.3 percent more expensive properties. The resultant impact on the degree of mortgage leverage is economically small. These findings have implications for monetary policy transmission in the housing market and financial stability more generally.

Parallel Session F5: Competition and Industry

How Institutional Quality Affects Informal Competition's effect on Input-Output Innovation of Manufacturing Firms in Sub-Saharan Africa?

Ariel Herbert Fambeu

While existing research examined the relationship between informal competition and formal firm innovation, there is a lack of understanding of how institutional quality affects this competition's effect on input-output innovation. Using firm-level survey responses from 2011 to 2022, we primarily investigate the non-linear effect of competition from the informal sector on the innovation of 6,979 formal manufacturing firms in 19 sub-Saharan African countries. Unique aspects include comparing the effects on input innovation (via product and process innovation) with those on output innovation (via R&D). Furthermore, we examine how the quality of the institutional environment either intensifies or mitigates this effect. Based on the multivariate probit model, the results show that there is an inverted-U shape between informal competition and formal firm output innovation. However, the effect of informal competition on input innovation is negative. Moreover, we find that the adverse impact of informal competition on innovation manifests only in countries with poor tax systems, weak rule of law, high degrees of corruption, and political instability. The policy implications of this study are threefold. Preserve the informal sector at a moderate level, subsidize research and development activities, and enhance institutional quality while simultaneously diminishing the informal sector.

Parallel Session F5: Competition and Industry

Sustainability, Competition, and Decision-Making Under Uncertainty: A Bayesian Approach to Green Merger Analysis in South Africa

Katherine Stainton, Willem Boshoff

The integration of environmental considerations into competition law represents a pressing challenge for competition authorities globally, particularly in evaluating green efficiencies in merger control. This paper develops and demonstrates a Bayesian decision-theoretic framework to assist South African competition authorities in evaluating anti-competitive mergers that generate environmental efficiencies, addressing the critical methodological gap in the systematic evaluation of such claims. Building on Boshoff's (2014) application of Bayesian techniques to market definition, this paper extends the probabilistic treatment of classification errors to merger review decisions. Through theoretical development and empirical application to the Pioneer/Pannar Seeds merger case, we demonstrate how Bayesian decision theory can provide a structured approach to evaluating environmental efficiencies under uncertainty. The framework incorporates prior probabilities based on historical patterns, case-specific evidence evaluation, and loss functions capturing relative error costs. The empirical application reveals several key findings. While traditional methods rely on holistic assessments, the Bayesian approach decomposes merger analysis into clear, quantifiable components. The Pioneer/Pannar case study demonstrates that this decomposition enhances transparency in merger evaluation, with the framework's treatment of Type I and Type II errors providing competition authorities with a systematic basis for weighing inherently uncertain, long-term environmental benefits against more readily quantifiable, immediate competitive harms. The framework's probabilistic approach proves particularly effective in addressing these temporal and quantification challenges that characterise environmental efficiency claims. This research advances both academic literature and regulatory practice by providing a robust, economics-grounded approach to evaluating environmental efficiencies in merger control. Its integration of Bayesian techniques offers competition authorities a powerful tool for addressing merger assessments in an era of growing environmental concerns while establishing a foundation for future research at the intersection of competition policy and environmental protection.

Parallel Session F5: Competition and Industry

Issues of Gender Within the Public Interest Sphere in South African Merger Reviews

Anton van Wyk, Anmar Pretorius, Derick Blaauw

This study explores the inclusion of gender considerations in South African merger evaluations, highlighting an underexamined area in merger and acquisition (M&A) policy research and contributes by providing empirical evidence on gender representation on company boards and executive management pre- and post-merger. While South African competition law mandates public interest considerations (PICs) such as employment considerations and regional impact, gender concerns remain unaddressed, despite significant underrepresentation of women in top corporate roles. The main objective and overarching research question is to assess whether mergers affect gender distribution on company boards and in executive management roles. Data for this analysis consists of secondary, pooled cross-sectional information on 80 South African mergers approved from 2010 to 2019 collected from various company financial statements and integrated annual reports, focusing on pre- and post-merger gender composition in management and board positions. Descriptive statistics, various tests for equality of means and quantitative ordinary least square regressions are conducted. Key explanatory variables include industry type, local or international merger status, financial metrics such as acquiring firm assets and target firm profits, and gender distribution metrics pre- and post-merger. The findings indicate a modest but statistically significant increase in female board representation post-merger, with local acquiring firms more likely to enhance female board presence compared to international ones. However, changes in female representation in management roles post-merger were generally not statistically significant. The study suggests that integrating gender diversity as a PIC in South African merger and acquisition policy could enhance female representation in corporate leadership, potentially setting a precedent for broader diversity-focused policies in the Global South.

Parallel Session F6: Determinants of Export Success: Firms, Institutions, and Global Shocks

Export Market Selection and Challenges: A Study of South African Firms *Ingrid Jenserud, Ernie Steenkamp, Sonja Grater*

South Africa faces significant economic challenges, including low growth, poverty, and high unemployment. The country relies on international trade to drive production and employment. Despite initiatives to boost export levels, the country's export performance remains below expectations, with a large portion of its export potential untapped, particularly in new markets. This study investigates the inadequate utilisation of available export opportunities by South African firms.

Existing literature on South Africa's export behaviour primarily uses cross-sectional survey data and focuses on firm characteristics, with limited research on international market selection (IMS) strategies. To address this gap, this study employs primary data to explore the export challenges and decisions of South African firms. A case study approach was used, incorporating a literature review, desktop analysis of secondary data, and semi-structured interviews with key personnel at export firms. Triangulation of these data sources enhances the credibility and validity of the findings.

Findings show that firms often use a non-systematic IMS approach, relying on existing relationships and networks for market selection. Significant effort is invested in maintaining these relationships, and some firms employ representatives in import markets to navigate export barriers. Despite awareness of new market opportunities, firms are hesitant to explore them due to supply-side obstacles such as electricity issues, high capital costs, low product quality, and price competitiveness. Additional barriers include high transport costs, logistical inefficiencies, varying standards and protocols, and insufficient government support.

This study provides insights into exporter's challenges and offer recommendations such as enhanced cooperation between exporters and government, investing in infrastructure, improving trade finance conditions, and fostering new trade relationships.

Parallel Session F6: Determinants of Export Success: Firms, Institutions, and Global Shocks

Determinants of Export Survival: Analysing the Effect of Trade Potential in South Africa

Mariska Aucamp, Ermie Steenkamp, Carli Bezuidenhout

The South African government acknowledged that export-led growth is crucial for the country to improve its growth performance, yet it has been troubled with slow export growth. It is, therefore, important to determine ways to encourage sustainable export growth. A key contributor to export growth is the survival of export relationships. While numerous studies have examined determinants of export survival, none have explored the relationship between trade potential and export survival. Governments often implement export promotion strategies to select the “correct” export markets. If the wrong markets are selected, resulting in short-lived export relationships, countries can suffer significant losses. Consequently, systematic international market selection (IMS) methods are often used to evaluate the trade potential of export relationships. It would thus make sense that product-country combinations with larger trade potential result in longer export relationships. This study therefore set out to determine whether trade potential is a predictor of longer-term export relationships. To investigate this, all new South African export relationships established after 2009 were considered over a ten-year sample period. Interestingly, the descriptive analysis showed that 58% of export relationships only survived for up to three years.

The Kaplan-Meier survival estimate indicated that South African export relationships with trade potential had a 11.90% higher likelihood of survival after year ten, compared to those without trade potential. Furthermore, using the Probit model with random effects, the empirical analysis proved that trade potential has a significant positive effect on export survival. Therefore, if South African export relationships were identified as having trade potential (using systematic international market selection (IMS)), they were more likely to survive.

It can thus be concluded that it is worthwhile for the South African government to conduct systematic IMS and support export opportunities that demonstrate trade potential, since it can encourage much-needed export-led growth.

Parallel Session F6: Determinants of Export Success: Firms, Institutions, and Global Shocks

Institutional Dynamics and Trade: Examining the Role of Governance Quality in Lesotho's Export Performance within a Globalized Framework

Adelakun Ojo Johnson, Ntsoakie Suzan Kholumo

This study examines the role of institutional quality in influencing Lesotho's export performance, focusing on the governance structures underpinning trade dynamics in a small, landlocked, and resource-constrained economy. Employing a mixed-methods approach, the research integrates quantitative analysis of trade data with qualitative assessments of institutional determinants, including government effectiveness, regulatory quality, control of corruption, and public trust in governance. Despite Lesotho's active engagement in regional and international trade agreements such as the Southern African Customs Union (SACU), the Southern African Development Community (SADC), and the African Growth and Opportunity Act (AGOA); its export performance remains constrained by structural vulnerabilities, limited diversification, and governance-related inefficiencies. This study draws on the World Bank's Global Governance Indicators and applies a weighted gravity model to evaluate the extent to which institutional quality affects trade outcomes, with particular attention to the novel inclusion of public trust in governance as a variable shaping trade facilitation. The findings demonstrate that robust institutional frameworks, characterized by regulatory coherence, effective policy implementation, and enhanced public trust, are significant predictors of improved export performance and economic resilience. Weak governance structures, political instability, and inconsistent policy enforcement are identified as critical barriers limiting Lesotho's export competitiveness and its capacity to attract foreign investment. The research contributes to the existing literature on institutional quality and trade by addressing the underexplored context of a small, fully landlocked nation. Furthermore, it highlights the importance of aligning governance reforms with trade strategies to leverage comparative advantages, foster export diversification, and advance sustainable economic growth. The study underscores the alignment of these efforts with Sustainable Development Goals (SDGs) 8, 16, and 17, offering actionable insights for policymakers and scholars in developing economies.

Parallel Session G2: DPRU Special Session: Growth, Employment and Welfare Challenges in South Africa: A Selected Economic Policy Overview

Low Value Cash Transfers in a High Unemployment Environment

Tim Köhler, Benjamin Stanwix

In this paper we examine the effects of a small monthly cash transfer in South Africa that targets all unemployed individuals in an economy where jobs are scarce. Taking advantage of changes in grant eligibility criteria over time we use data from 2022/23 to estimate the impact of grant receipt and grant loss on individual labour market outcomes, including search behaviour and employment likelihood. Our interest is on whether this grant, which was initially designed as a pandemic-era lifeline, impacts the labour market engagement of recipients.

Low Informality Amidst High Unemployment: The Case of South Africa

Haroon Borat, Ravi Kanbur, Tim Köhler, Benjamin Stanwix

An assumption in most of the applied and theoretical economics literature is that the informal economy operates as a free entry and exit sector. An enduring puzzle then, is how it is possible that many developing countries have such stubbornly high unemployment rates alongside low informality. We explore this empirical paradox with a specific application to South Africa - a country with one of the highest unemployment rates in the world

Parallel Session G2: DPRU Special Session: Growth, Employment and Welfare Challenges in South Africa: A Selected Economic Policy Overview

The Economic Complexity of Regional Economies in South Africa *Francois Steenkamp*

This paper calculates economic complexity for district economies in South Africa over the 2014-2023 period, using employment data. We examine the economic structures of these district economies using industry relatedness calculations. Consistent with the broader literature, the analysis shows that at a district economic level, higher levels of economic complexity are associated with higher levels of economic development and economic growth. We show that more complex industries are located within financial services, communication services, and manufacturing, while the least complex industries fall within Agriculture. The most complex district economies are metropolitan municipalities, with industrial structures orientated toward these more complex industries.

From Coal to Chlorophyll: Identifying Green Job Opportunities for Youth during South Africa's Just Transition

Robert Hill, Leigh Neethling, Morné Oosthuizen

Making use of occupational relatedness metrics, in this paper we investigate the feasibility of green job opportunities to capture displaced youth in Mpumalanga, depending on their employment history. Results of this desktop study – which forms part of a larger cross-country study funded and led by the University of Cambridge – suggest that green jobs are relatively different to the existing experience and task competences of young people, and thus some form of reskilling programme is likely to be necessary for young people to take full advantage of the employment opportunities offered by green jobs.

Parallel Session G3: Topics in Monetary and Macroeconomics

Macroeconomic Effects of Lowering South Africa's Inflation Target: an SVAR Analysis

Richard Kima, Keagile Lesame

This study estimates the macroeconomic effects of shifting to a lower inflation target for South Africa. The paper uses the BER inflation expectations survey data and the Max Share identification strategy within a Bayesian structural vector autoregressive framework to identify inflation target shocks. The study contributes to the empirical literature by being the first, to the best of our knowledge, to formally estimate and test inflation target shocks effects on the macroeconomy in emerging markets. Secondly, we find that innovations to the inflation target affect the real economy through other monetary policy transmission channels. We also provide some evidence of short-term Neo-Fisherian effects, i.e., a positive co-movement in inflation and nominal interest rates in the short run in response to an inflation target shock. Furthermore, our evidence shows that a lower inflation target has transient positive effect on economic growth despite an increase in the real interest rate, and the transmission channels through which a lower target boosts growth is via higher asset prices and a lower sovereign credit risk premium. The significance of our findings is that unlike existing studies which focus on developed markets, inflation target shocks do not have persistent effects in our case and other monetary policy transmission channels are also operative; these findings may be relevant for broader emerging market economies.

Distributional Impact of Monetary Policy in South Africa

Dawie van Lill

In recent years, a new generation of macroeconomic models has placed significant emphasis on understanding the distributional consequences of monetary and fiscal policies. Specifically, heterogeneous agent New-Keynesian (HANK) models have gained popularity due to advancements in computational power and the development of more efficient algorithms capable of solving complex models that involve heterogeneous households and firms. These models are especially valuable for analyzing how different segments of the population are affected by changes in economic policy, as they allow for a more nuanced understanding of policy outcomes across various income and wealth groups.

This paper aims to explore the distributional impact of monetary policy in South Africa by developing and estimating a HANK model tailored to the country's unique economic characteristics. South Africa is known for its high levels of income and wealth inequality, which makes understanding the differential effects of policy particularly important. By applying a HANK model to the South African context, we are able to assess how changes in the policy rate influence various households differently, based on their economic position.

While international research on the distributional impacts of monetary policy using HANK models is well-established, there is a notable gap in studies focusing on South Africa. This paper fills this gap by applying state-of-the-art algorithms to solve and estimate a HANK model for the South African economy. The primary contribution of this research is to provide insights into how monetary policy can affect wealth and income distribution within South Africa, helping to inform more targeted and effective policy decisions in the future.

Parallel Session G3: Topics in Monetary and Macroeconomics

State Dependence of the Phillips Curve: What Does This Mean for Monetary Policy?

Anis Foresto, Monique Reid, Jeffrey Rakgalakane

The post-pandemic inflationary surge has challenged our views of the Phillips curve. International evidence suggests the slope of the curve behaves differently under high versus low inflation regimes, implying a non-linear relationship. This shift is linked to micro-evidence that agents become attentive to inflation once it passes a threshold. Beyond this threshold, inflation expectations become sticky downwards resulting in a challenging disinflation path. Under these conditions the Phillips curve steepens, and monetary policy is likely to have a greater cost on the economy.

Using a self-exciting threshold autoregressive (SETAR) model for South Africa (2000-2024), we find evidence of a state-dependent/regime driven Phillips curve. We find the degree of attentiveness, measured by a threshold, varies over time. We also note that the threshold is best described by a range, between 4.2% and 9.2% with a mean or baseline of 5.55%. While we do not formally test for the influence of the South African Reserve Bank's (SARB) communication on the level and dispersion of the threshold. Intuitively, our findings suggest that it may influence what the public views as 'high' inflation. Lastly, we find that low inflation regimes are self-stabilising as there is a higher probability of remaining in this regime compared to a high regime.

Our findings contribute to discussions on the appropriate level for South Africa's inflation target. Firstly, we recommend that the level policymakers target should fall outside of the threshold range (red-zone) to mitigate the effect of routine shocks. Secondly, there should be a buffer between the inflation target and the red-zone, which allows the economy to accommodate routine shocks without pushing inflation into the red-zone. If this were the case, a target of 4.5% would mean that routine shocks would put the economy more at risk of high inflationary pressures.

Parallel Session G3: Topics in Monetary and Macroeconomics

Inflation Targeting and Macroeconomic Policy Coordination Under Information Frictions

Hylton Hollander, Clinton Joel

This paper investigates how a positive trend inflation target affects policy coordination between monetary and fiscal authorities in a New Keynesian DSGE framework calibrated to South Africa. Unlike a zero-inflation steady state, a positive trend inflation objective influences price-setting, expectation formation, and debt sustainability. The analysis centers on how price dispersion and a high sovereign debt burden, amplified by imperfect information, shape inflation, economic growth, and interest rates. By allowing agents to form expectations adaptively, the study captures how non-uniform information processing and fiscal imbalances challenge effective stabilisation efforts and policy alignment.

The medium-scale DSGE model features habit formation in consumption, Calvo wage and price rigidities, and Ricardian and non-Ricardian households. Fiscal policy takes an extensive role, with tax and spending rules linked to debt and output, while a risk premium on domestic government bonds affects borrowing costs. The model also includes an average debt maturity structure, influencing and being influenced by monetary policy decisions, under trend inflation targets. Partial information is introduced, enabling agents to form expectations adaptively and capture the complexities of real-world information processing. Calibrated with South African macroeconomic data, the model's outcomes are evaluated through Ramsey welfare analysis to determine the optimal inflation target.

This paper advances understanding of policy coordination by integrating positive trend inflation targets, imperfect information, sovereign risk premia, and debt maturity structures into a single model. It highlights how price dispersion and fiscal pressures reshape inflation dynamics, policy effectiveness, and welfare outcomes. The findings provide guidance on designing more robust, stabilisation strategies that improve macroeconomic resilience, maintain price stability, and ensure fiscal sustainability.

Parallel Session G4: Sustainable Finance, Corporate Responsibility, and Investment

Towards Sustainable Finance: Exploring the Impact of Investor Sentiment on Volatility Dynamics in ESG Markets

Damilola Aboluwodi, Bomi Nomlala, Paul-Francois Muzindutsi

Stock returns volatility is a crucial facet within the realm of financial markets, embodying the degree of variation or dispersion of an asset's price over a specific time period. Like stock returns, volatility represents an integral aspect in the understanding of asset performance. The research examined the nature of volatility and the influence of investor sentiments on volatility of ESG returns in emerging and developed markets. Objectives: The study sought to: (1) determine the nature of ESG volatility in emerging and developed markets considering for volatility stylized facts such as asymmetry, mean reversion, persistence, (2) compare the nature of ESG markets volatility within emerging ESG markets, within developed ESG markets, and between the emerging and developed ESG markets blocs. (3) determine and compare the impact of investor sentiments on ESG volatility in emerging and developed ESG markets blocs. The research study adopted Generalized Autoregressive Conditional Heteroscedasticity (GARCH) models such as the EGARCH, GJR-GARCH and GARCH-X models. Within this context, the research findings established that except for China, the EGARCH model is best suitable for understanding the nature of volatility dynamics in ESG markets within the emerging and developed market blocs. Also, the study empirically established that based on the leverage effect, negative shocks (bad news) are more likely to increase the volatility of ESG returns than positive shocks (good news) in both emerging and developed market blocs. Additionally, the study established that although investor sentiments impacts the volatility of ESG returns regardless of market characterizations, emerging ESG markets are extensively more susceptible to investor sentiments than developed ESG markets. The findings suggest that market efficiency is influenced by investor sentiment, particularly in the context of ESG returns where volatility dynamics are impacted.

Parallel Session G4: Sustainable Finance, Corporate Responsibility, and Investment

An Investigation into the Role of ESG on Firm Financial Performance in South Africa

James Jere, Meshach Aziakpono, Nwabisa Malimba

Environmental, Social, and Governance (ESG) investing has grown in relevance and importance globally, reflecting a shift in how companies and investors consider long-term sustainability with financial performance. South Africa's evolving socio-economic landscape has focused on sustainable development amidst global pressures to promote ethical business practices. Consequently, South Africa was among the first nations globally to have its Stock Exchange (JSE) introduce mandatory integrated reporting for listed companies, requiring them to disclose non-financial information, including ESG metrics. However, the nature of the effect of ESG rating on firm financial performance remains unclear. What is the relationship between ESG practices and firm performance among JSE-listed companies? Are firms with high ESG ratings underperforming firms with low ratings? To what extent does the influence of ESG on firm performance vary across different levels of firm performance among the JSE-listed firms? This study explores the impact of ESG disclosures on the financial performance of JSE-listed firms from 2012 to 2023. Using random – and fixed-effect models and panel quantile regression, it assesses ESG's influence on firm financial performance metrics like Market Capitalization, Tobin's Q, and Returns-on-Equity. The findings suggest that while environmental and governance disclosures may negatively affect market-based measures, social factors often enhance performance, especially for firms with lower valuations. The study highlights the heterogeneous effects of ESG pillars across the conditional distribution of firms over different performance measures, emphasizing the varying importance of each ESG pillar. Overall, the study highlights the strategic benefits of ESG initiatives, suggesting their potential long-term rewards amidst the country's current and historical landscape.

Parallel Session G4: Sustainable Finance, Corporate Responsibility, and Investment

Examining the Impact of Environmental, Social, and Governance (ESG) Practices on Corporate Financial Performance: Evidence from Selected JSE-Listed Firms

Justin Bendeman, Sibanisezwe Khumalo

The increasing integration of Environmental, Social, and Governance (ESG) factors into investment decisions has sparked debate about their impact on Corporate Financial Performance (CFP). This paper examines the ESG-CFP relationship in the South African equity market, a relatively underexplored context compared to global studies. Using data from the Thomson Reuters Refinitiv Eikon database, this study employs robust econometric techniques to analyse the ESG-CFP dynamics for Johannesburg Stock Exchange (JSE)-listed firms. The research addresses three key questions: (1) Does ESG adoption improve CFP? (2) How does the CFP of ESG leader firms compare to laggard firms? (3) Is the ESG-CFP relationship consistent across sectors? To answer these, a Difference-in-Differences (DiD) estimation measures the CFP of ESG-adopting vs. non-adopting firms. A Fully Modified Ordinary Least Squares (FMOLS) method evaluates the performance gap between ESG leaders and laggards. Lastly, Quintile Regression assesses sectoral variations in ESG impacts. The findings reveal that ESG adoption enhances CFP, as evidenced by superior Return on Assets (ROA), Tobin's Q, and share returns in the DiD analysis. However, FMOLS results indicate an overall negative effect of ESG on CFP, except for ESG leaders, who outperform laggards in ROA, Return on Equity (ROE), and share returns. Quintile Regression confirms these disparities, showing sector-specific variations in ESG's impact. This study contributes to the ESG literature by providing nuanced insights into the South African market. It highlights that while ESG adoption may initially pose challenges, firms that achieve ESG leadership gain significant financial advantages. Investors are encouraged to prioritize ESG leaders, and firms should aim to become ESG leaders to maximize CFP. Future research should further explore these dynamics among JSE-listed companies to deepen understanding.

Parallel Session G4: Sustainable Finance, Corporate Responsibility, and Investment

Circular Economy Disclosures and Social Media Communications by South African Listed Companies

Manuela Ender

In recent years, the need for a transition from linear business models to closed-loop models emphasizing reuse, reduction, and recycling has become increasingly urgent (Esposito et al. 2023; Heras-Saizarbitoria et al. 2023). The circular economy (CE) concept has emerged as a global framework for sustainable development. South Africa, with its unique socio-economic and environmental challenges, provides a distinct context for investigating how businesses integrate CE principles into their operations and disclosures (Hoosain et al., 2023). This research aims to analyze the extent and quality of CE disclosures in the reports and social media communications of South African listed companies. A qualitative content analysis will be employed, utilizing a coding system to evaluate CE-related disclosures based on their depth, scope, and alignment with CE principles. The coding framework will draw on established CE literature and international reporting guidelines (Heras-Saizarbitoria et al. 2023; L'Abate et al. 2024b). Additionally, findings from econometric analyses of the collected data demonstrate whether highly profitable and indebted companies might disclose more CE information through their reports and platforms like X (formerly Twitter) than other companies (L'Abate et al. 2024b). The study seeks to fill a critical gap in empirical research by providing an updated review of CE adoption and disclosure practices in South Africa. It contributes to understanding how companies address stakeholder demands for transparency and sustainability. The findings will inform policymakers, investors, and other stakeholders about the progress and challenges of implementing CE in South Africa's corporate sector, offering practical recommendations. This research is poised to advance the discourse on CE in emerging economies, paving the way for a more sustainable and resource-efficient future.

Parallel Session G5: Time Use, Gender and Motherhood

Role of Gender and Motherhood on Rural-Urban Migration Decisions in South Africa: A Panel Data Analysis

Rubina Jogee, Uma Kollamparambil

Despite the increasing feminization of migration in South Africa and similar contexts, research has rarely explored the gendered disparities in the rural-urban migration process, particularly how motherhood influences migration decisions. This study examines the role of gender and motherhood in shaping rural individuals' migration choices to urban areas, using panel data from South Africa's National Income Dynamics Study (2008-2016). Panel regression models were estimated for the entire sample and subsamples of males, females, and mothers. A key focus is the nuanced effect of motherhood, analyzed through three variables based on the age of the youngest child (under 2 years, 3-10 years, and 11-15 years). Findings indicate that men are more likely to migrate than women, with both genders sharing common migration determinants, including the non-linear effect of age, the negative impact of the number of children in the household, and the positive influence of education. Gender differences were evident in how children affect migration: mothers with children under 2 years were less likely to migrate due to caregiving responsibilities like breastfeeding. In contrast, mothers with older children (aged 3-15 years) were more likely to migrate, driven by economic pressures to support their families. Migration was facilitated for mothers when substitute caregivers, such as grandmothers, were available. Additionally, low household income increased the likelihood of migration, but mothers receiving child support grants were less inclined to migrate, as these grants provided financial relief. The study concludes that gender, motherhood status, the age of children, and access to childcare support significantly influence migration decisions. Policymakers should enhance support for rural mothers by improving childcare options, expanding social safety nets, and investing in rural development.

Parallel Session G5: Time Use, Gender and Motherhood

Estimating the Correlates of Time Poverty in South Africa: A Comparison between Objective and Subjective Measures

Priyanka Harrichurran, Claire Vermaak, Colette Muller

Understanding time poverty (having insufficient time for rest and leisure after doing paid and unpaid work activities) is crucial because it affects individuals' physical and mental well-being, productivity, and overall quality of life. Time poverty, measured at the individual level, also reveals gender and household inequalities that were previously hidden. Despite this, time poverty is understudied, especially in the developing country context, with limited existing research analysing objective time poverty by comparing reported time use to a calculated threshold. This study expands our understanding of the time poor by researching a subjective measure of time poverty, based on individuals' perception of busyness. Using data from the most recent South African 2010 Time Use Survey, this study (i) descriptively examines differences between both measures – and (ii) estimates correlates of both measures. Objective and subjective measures largely recognise the same share of individuals as time poor, however, about 57 per cent of those that feel time poor are not objectively time poor. The well-being of these subjectively time poor individuals will still be negatively affected, even though they are precluded from the objective measure. Multinomial probit models with a four-category dependent variable (non-poor by both measures, subjectively non-poor but objectively poor, subjectively poor but objectively non-poor, and time poor by both measures) are estimated, by gender. Models reveal significant gender differences with household composition and type being important correlates of objective and subjective time poverty, especially for women who care for themselves and other household members. The implications of time poverty on well-being are substantial. Addressing gender and other norms will not only minimise misalignments between measures but also importantly inform policy aimed at alleviating time poverty.

Parallel Session G5: Time Use, Gender and Motherhood

Heterogeneity of Time Use Among Young NEETs: A South African Perspective

Sanesh Sewsanker, Claire Vermaak

How do young people spend their time when they are not in employment, education or training (NEET)? Ethnographic research provides narratives of young NEET men who are highly visible in public spaces, but other NEETs may be invisible without representative data at a larger scale. This study examines detailed time use patterns at a national level to uncover heterogeneity in the behaviour and characteristics of NEETs in South Africa, in a context in which a third of young people are disengaged from work and study. Using nationally representative time use survey data of NEETs aged 18 to 30 (n=3,563), the paper employs hierarchical cluster analysis to identify distinct typologies of time use sequences, and multinomial estimation to analyse the predictors of cluster membership. The paper identifies five distinct clusters of NEETs, who behave in heterogeneous ways and have varied household responsibilities. Young NEET men typically belong to urban clusters where leisure time dominates, suggesting that NEET status may be akin to a temporary state of 'waithood' preceding an expected transition to further education or paid employment. Women typically belong to clusters with parental responsibilities where unpaid household work is the modal activity. Wide variation in the extent of social interaction across clusters indicates that some NEETs are at much higher risk of social isolation than others, and they may be invisible to public policies. The results suggest that heterogeneity is a key component of young people's time use patterns and household roles, and that a diversity of policies is needed to address NEET status.

Parallel Session G5: Time Use, Gender and Motherhood

Sequencing and Clustering: Identifying Distinct Typologies of Time Poor Men and Women in South Africa

Priyanka Harrichurran, Claire Vermaak, Colette Muller

Time use studies expose the gendered division of work within the household and find that women typically have higher rates of time poverty than men. However, not much is known about the different groups of time poor men and women and the characteristics associated with them. This study seeks to close this research gap, using the under-utilised and most recent South Africa 2010 Time Use Survey. First, analysing time use sequences across the day using separate chronograms for men and women show clear gender differences: across both time poverty status categories, women spend more time on household and care work throughout the day than their male counterparts while men spend more time on paid work and leisure than women do. Then, Ward's agglomerative hierarchical clustering algorithm optimally groups time poor men and time poor women into four distinct typologies each. For men, the cluster analysis reveals typologies that are mainly differentiated according to the amount and timing of paid work, with a substantial proportion of men doing paid work throughout the night. For women, clusters are mainly differentiated by the amount of paid work done and the extent to which this is combined with unpaid work. Women in the dominant cluster (who are mainly in nuclear or extended households) spend the most time on paid work, and the least time on household work. In contrast, women in another cluster spend the most time on paid and unpaid work activities combined (720 minutes per day), suggesting the prevalence of women facing a dual-burden in this group. Analysing the heterogeneity amongst the time poor, by gender, is important – factors like the gendered nature of tasks, and other personal and household characteristics play a role in influencing an individual's time poverty status and understanding this will help policies aimed at alleviating time poverty.

Parallel Session H2: Intergenerational Education and Earnings Mobility

The Introduction of the Free Primary Education Policy and Intergenerational Mobility: Evidence from Ethiopia

Megan Shongwe, Eleni Yitbarek, Matthew Clance

Ethiopia's Free Primary Education (FPE) policy, introduced in 1994, aimed to expand access to primary education, yet its impact on intergenerational educational mobility remains unknown. This study uses data from the 2018/19 household and community survey and a difference-in-differences-in-difference (DiDiD) design to investigate the policy's effects. The findings show that the FPE significantly increased educational attainment for children born after 1987 and weakened the influence of family background, fostering mobility. Notably, children of illiterate parents experienced upward mobility, though predominantly sons, while daughters showed limited improvement. The policy substantially impacted urban areas, enhancing the likelihood of higher educational attainment, but it had minimal influence in rural Ethiopia. These findings highlight the policy's effectiveness in urban contexts and among sons while underscoring persistent gender and geographic disparities. The study contributes to the growing literature on intergenerational mobility and the understanding of educational policy effects in the context of developing countries. It also provides critical insights for addressing inequities in education access and outcomes.

A Seven-Decade Analysis of Intergenerational Education Mobility in South Africa: Patterns by Population Group

Nicola Branson, Hagos Ressom

This study examines intergenerational educational mobility in South Africa over seven decades, with a focus on racial disparities. While average educational attainment among the working-age population has steadily increased and schooling inequality has declined, persistent economic inequality raises questions about the contribution of intergenerational education. Using data from the Survey of Socioeconomic Opportunity and Achievement and the fifth wave of the National Income Dynamics Study, we analyse cohorts born between 1923 and 1992 to address three key questions: the size of the intergenerational mobility gap between racial groups, how this gap has evolved over time, and whether children from similar circumstances (based on parental education) experience comparable mobility regardless of race.

This research contributes to existing literature by examining educational mobility over an extended historical period and by examining racial differences. By tracing changes across multiple generations separately by race, the study offers a nuanced perspective on how persistent historical inequities continue to shape educational attainment despite South Africa's marked progress in reducing schooling inequality. These findings advance our understanding of how education influences social mobility and economic outcomes in a context defined by deep structural inequalities.

Parallel Session H2: Intergenerational Education and Earnings Mobility

Intergenerational Educational Mobility and Black Tax in South Africa

Letshego Mancoe, Eleni Yitbarek, Yoseph Getachew

This study examines the empirical relationship between intergenerational educational mobility and black tax in South Africa, using the nationally representative National Income Dynamics Study (NIDS) dataset from the Southern Africa Labour and Development Research Unit (SALDRU). Our findings reveal significant intergenerational educational persistence in households paying black tax compared to those that do not. We find pronounced gender and racial disparities in intergenerational educational mobility, with black tax further exacerbating these differences. Black and Coloured households facing the financial burden of black tax tend to exhibit greater intergenerational education persistence compared to households not burdened by black tax. This study addresses a gap in the literature by linking black tax with intergenerational educational mobility, offering valuable insights into how financial obligations to extended family are associated with intergenerational educational mobility in South Africa.

Parallel Session H3: Innovation and Firm Studies

Innovation and E-Commerce as Resilience Strategies: Firm-Level Evidence in Sub-Saharan Africa During the COVID-19 Crisis

Ariel Herbert Fambeu, Patricia Tchawa Yomi

This research evaluates the efficacy of innovation and e-commerce as corporate strategies for resilience during the COVID-19 crisis in Sub-Saharan African (SSA). Using World Bank data and an ordered probit model, we show that innovation and e-commerce have opposite effects on firm resilience. Throughout the COVID-19 crisis, the innovation strategy is much more effective than e-commerce in permitting firms to restore their pre-crisis performance levels. The effects of these corporate strategies are virtually the same regardless of the level of development of the countries, albeit with differing magnitudes. Nonetheless, these findings in SSA hide disparities according to firm size and industry. This study is crucial for sub-Saharan Africa economies to recover from such a crisis and provide a foundation for future resilience.

Impact of Automation on Firms and Labor Markets in Emerging Economies: Evidence from South Africa

Michael Kilumelume, Justice Mensah, Kunal Sen

We examine the effects of automation on firm performance and labor market in the context of an emerging economy. To do this, we leverage unique administrative data on the universe of manufacturing firms in South Africa to identify casual evidence of firm-level outcomes from automation adoption. In the event-study design, we derive direct effects of automation on automating firms, the spillover effects on non-automating firms, and employment within the same industry and location. Specifically, our results show that automated firms doubled production and Value Addition (VA) in the first four years of automation. We also find that the adoption of automation resulted in a robust increase in sales per worker, value added per worker, and total factor productivity (TFP) of approximately 50- 70% within first-four years of automation. The study further shows that automation increases employment and average wages and reduces employee turnover in automating firms. However, we find no significant firm-level spillovers on non-automating firms in the same industry and location.

Parallel Session H3: Innovation and Firm Studies

Spatial Modelling of Innovation Activities of Micro-Manufacturing Firms in Johannesburg, South Africa

Kabeya Clement Mulamba

This paper employs the Gibbs modelling approach to analyse the spatial clustering and interaction of innovation activities among micro-manufacturing firms in the City of Johannesburg, South Africa. Before estimating the models, the inhomogeneous cross K-function is used as a spatial exploratory tool to assess whether these firms exhibit spatial clustering, inhibition, or independence. The empirical results from the inhomogeneous cross K-function indicate that micro-manufacturing firms, regardless of their innovation status, tend to cluster spatially at any chosen distance within Johannesburg. This means that a micro-manufacturing firm with a given innovation status is highly likely to be found near other micro firms, whether they share the same or a different innovation status. The estimated Gibbs models further reveal that the conditional intensity of firms at a given location is influenced by both location-specific factors and spatial interactions between firms. These findings have two key implications: first, they support economic theories of industrial clustering, which highlight the importance of firm interaction; second, they emphasise the need to consider spatial or geographic factors in policy-making aimed at promoting industrial growth, particularly at the local level.

Innovation and Transition to 'Formality': Econometric Analysis of Micro, Small, and Medium Manufacturing Enterprises in Johannesburg

Elvis Korku Avenyo, Fiona Tregenna

There is growing evidence that micro, small and medium enterprises (MSMEs) in developing countries operate at varying degrees of informality, that is, at different margins on the formality-informality continuum. Based on a taxonomy that captures this heterogeneity, this paper analyses the effect of innovation on the formality status of manufacturing firms in Johannesburg, South Africa. We use novel firm-level data collected in 2019 on 531 manufacturing businesses in the City of Johannesburg, and estimate extended ordered probit with endogenous treatment in Maximum Likelihood. Our results suggest that innovation is critical for the transition of enterprises, particularly from informal modes of activities to formal modes of activities. This finding also holds when one considers the novelty and types of innovations. The paper further discusses the implications of these results for formalisation policies in developing countries.

Parallel Session H4: Finance

The Impact of Financial Innovation on Economic Growth in Sub-Saharan African Countries

Rachel Macauley, Haim Abraham, Lebogang Mateane

Financial innovation is the creation of new financial instruments, products, or institutions and includes mundane financial improvements such as new financial reporting procedures, improvements in data processing, and credit scoring (Laeven, Levine & Michalopoulos, 2015:3). The research question of this study is: Does financial innovation have a symmetric (same magnitude) and asymmetric (different magnitude) impact on economic growth? The asymmetric disaggregates financial innovation into positive and negative changes to investigate how these changes in financial innovation improve or hamper economic growth. The symmetric does not decompose financial innovation into positive and negative changes but investigates the aggregate financial innovation impacts on economic growth. The purpose of the symmetric and asymmetric impacts of financial innovation on economic growth is to ascertain if there is a presence of linear and nonlinear impacts in the financial innovation and economic growth relationship. This study employs two panel econometric techniques, namely autoregressive distributed lag (ARDL) and nonlinear autoregressive distributed lag (NARDL). The linear ARDL model tests for the symmetric relationship between financial innovation and economic growth. The nonlinear ARDL tests for the asymmetric relationship, that is the impact of the positive and negative changes of financial innovation on economic growth. Using data from 20 SSA countries between the period 1990 and 2020, this study concludes that financial innovation has a symmetric impact on economic growth in SSA—the relationship is positive and statistically significant in the long run. The result of the asymmetric impact of the two variables shows that an increase in financial innovation has a positive and significant impact on economic growth in both the short-run and long-run. In the long-run, a decrease in financial innovation has a negative asymmetric relationship with economic growth.

Financial Stress in Emerging Markets: The Tail-Risk Trade-Offs Between Growth and Financial Stability Policies

David de Villiers, Hylton Hollander, Dawie van Lill

We apply quantile regressions to analyse how macroprudential policies and capital controls affect the spillover of financial stress on future economic growth in emerging markets. Our findings reveal a key intertemporal trade-off: macroprudential policies, while dampening short-term growth, enhance economic resilience and support long-term growth. In contrast, capital controls do not present this trade-off and are most effective during periods of strong economic performance. The results suggest that shrinking economies should prioritize domestic financial stability, while growing economies should focus on protecting against external financial instability. We contribute to the literature by refining and extending the financial stress indicator for a group of 27 emerging markets from 1996Q1 to 2022Q4 and demonstrate the distinct roles of these policies across different stages of the economic growth distribution.

Parallel Session H4: Finance

Beyond Integration: Evaluating the Financial Deepening and Growth Effects of FDI inflows into the BRICS+ Economies

Kholiswa Malindini

This study examines the influence of Foreign Direct Investment (FDI) inflows on financial deepening and economic growth in the recently expanded BRICS grouping, now known as BRICS+. This grouping, which now holds a substantial share of global GDP and investment, has significantly enhanced its economic influence and integration by admitting new member states. Understanding how deepened foreign capital flows might foster the development of domestic financial systems and stimulate growth is of paramount importance. Grounded in theories that link international capital to domestic financial maturity and productivity gains, this research aims to determine whether FDI inflows into BRICS+ stimulate broader financial inclusion and market efficiency. The analysis is based on a balanced panel dataset that covers key macroeconomic and institutional variables, capturing the expanded bloc's cross-sectional and temporal dimensions. The study measures financial deepening through indicators such as the ratio of private-sector credit to GDP, stock market capitalization, and broad money supply (M2) as a percentage of GDP. These indicators gauge the sophistication and breadth of financial services. The study employs the dynamic panel Generalized Method of Moments (GMM) estimation technique to address endogeneity concerns, including the possibility that deeper financial systems attract FDI. The primary explanatory variable is FDI inflows (as a share of GDP), supplemented by controls for GDP per capita, inflation, trade openness, institutional quality, and other relevant factors. The GMM framework helps isolate the causal effect of FDI on financial sector depth and, by extension, long-run economic growth trajectories across the member countries. The findings of this study will provide timely and valuable insights into how BRICS+ can leverage its expanded membership and increased global visibility to foster stronger financial structures. These results are crucial for policymakers, as they can use this knowledge to direct FDI towards sustainable growth, fortify financial stability, and ensure that the benefits of more comprehensive, more inclusive financial markets are felt throughout the entire bloc.

Parallel Session H4: Finance

The Effect of Exchange Rate on Economic Growth in Brazil, Russia, India, China, and South Africa (BRICS) Countries: Panel ARDL Approach

Goitsemodimo Abel Molocwa, Ireen Choga

Given the importance of exchange rate stability for emerging economies, this study investigates the influence of exchange rates on economic growth in Brazil, Russia, India, China, and South Africa (BRICS) countries. Exchange rate fluctuations affect key macroeconomic variables, including trade balance, capital flows, inflation, and overall economic stability, which are critical for sustainable growth. This study examines both short- and long-term effects using a Panel Autoregressive Distributed Lag (PARDL) model covering 1994 to 2022. In the long run, the findings reveal that while exchange rate volatility and inflation hinder economic growth, interest rates and trade openness contribute positively. Conversely, in the short run, interest rates reduce growth, and exchange rates negatively impact it, though inflation and trade openness show a positive but statistically insignificant influence. The results further reveal that there is a negative and statistically significant error correction adjustment coefficient. Therefore, the linear model can be used to adjust the short-run dynamic variables to the long-run equilibrium. This study underscores the importance of stabilising exchange rates in BRICS nations through prudent macroeconomic policies and targeted foreign exchange interventions to support sustainable growth.

Parallel Session II: SALDRU Special Session

Surviving in the Dark: The Mortality Effects of Reducing Rolling Blackouts *Joshua Budlender*

South Africa frequently experiences rolling blackouts (“load shedding”) due to shortfalls in electricity generation. This is a common problem across the developing world, and yet the developmental impacts of insufficient and unstable electricity supply, and the benefits of mitigating this, are poorly understood. I use the introduction of a unique load shedding reduction policy in parts of South Africa’s second-largest city, Cape Town, to investigate the mortality effects of load shedding and its mitigation. To identify these effects, I use a stacked synthetic control design that leverages the episodic nature of load shedding between 2014 and 2019. While the estimates are imprecise, I find robust evidence that the mitigation policy statistically significantly reduces mortality in Cape Town relative to other parts of South Africa experiencing unmitigated load shedding. The incomplete geographic coverage of the mitigation policy entrenches existing inequalities in the city.

Tracking Progress Towards Gender Equity in the South African Academic Economics Pipeline

Nicola Branson, Emma Whitelaw

Both academia and the economics discipline play a critical role in shaping society and public policies. Greater gender parity is therefore key to shaping a profession that contributes diverse perspectives and ideas to teaching, research, and discipline-wide impact. However, attrition along the pipeline, time lags in career progression and promotion gaps can delay, stagnate, or even hinder transformation. Our research question is a simple, but important one: ‘What are the gender ratios at various points of the academic pipeline, and where can progress be made?’

We answer this question using administrative data between 2012 and 2022 (submitted annually to the Department of Higher Education and Training by each of the country’s 26 public universities) on students, staff, and publications. Where data permits, we disaggregate our findings by race, age, qualification level, rank, and institution type (traditional, comprehensive, or university of technology) to add nuance to the discussion.

We show that women now represent the majority of enrolments and graduates at most qualification levels, but remain under-represented in PhD programs, senior academic ranks, and in research outputs. Although the proportion of female professors has increased, the profession has not yet achieved gender equity, particularly among historically disadvantaged groups. Equity in the pipeline is essential to advance social justice within and beyond academic institutions, but despite notable progress, potential to further advance women in economics remains. We hope that these findings will prompt informed reflection and debate about the economics profession in South Africa.

Parallel Session II: SALDRU Special Session

Own- and Cross-Price Elasticities of Married Women's Labour Supply in South Africa

Amy Thornton

How sensitive are married women to what they could potentially earn when deciding whether to enter the labour market? How sensitive are they to what their husbands earn? And, what do these sensitivities look like under prevailing conditions of high and persistent female unemployment? A well-established result from the developed world is that strong own- and cross-price elasticities of married women's labour supply with respect to their husband's wages have attenuated towards zero over the past 50 years. This change has been linked to rising female labour force participation, women becoming increasingly career-orientated, and the decline of the gendered division of household labour. We undertake this analysis for South Africa, an upper-middle income country characterised by high levels of female unemployment and wage inequality. Using time-series cross-sectional household survey data, we find a similar pattern: own- and cross-price elasticities of married women shrank towards zero over the period 1997-2023. This points to a change in women's underlying model of labour supply, consistent with other results from the South African literature. We present some evidence that the mechanism behind this change is related to economic need driving women to work, rather than progressive ideational change about women working as posited in the United States.

The Effect of Household Pension Loss on Working-Age Members' Employment Outcomes

Gabriel Espi-Sanchis

The South African old-age pension is a crucial part of the country's social support system. Because the pension is set at a high level (relative to median per capita household income), and sharing of grant income in multi-generational households is well documented, some authors have investigated whether pension receipt (or loss) affects the employment outcomes of working age members of a pensioner's household. This paper uses five waves of the National Income Dynamics Study (NIDS) to study what happens to working age individuals' labour force participation and employment outcomes when their household ceases receiving pension income. A contemporary difference-in-differences design (assessing parallel trends) is used, while the richness of the data available in NIDS is also used to explore heterogeneity (e.g. by formality of employment or gender of the pensioner), to explore the extent to which residence and employment responses are related, and to control for the presence of severe health symptoms prior to pensioner death (addressing the potential endogeneity of the latter). This paper will contribute to the field by being the first study to a) use all five waves of NIDS to provide evidence on household members' shorter and longer-term responses to pension loss, b) use contemporary difference-in-differences designs which better identify causal effects in these circumstances, and c) explore the relationship between employment and residence responses to pension shocks.

Parallel Session I2: Monetary Macroeconomics

The Impact of Basel III Implementation on Bank Lending in South Africa

Xolani Sibande, Alistair Milne

This study investigates the impact of the Basel III capital requirement on the supply of bank credit in South Africa. The literature offers greatly varying estimates of the impact of bank capital requirements on loan supply. Using a specification closely modelled on a related study of Peru by Fang et al. (2020), we report panel regressions using monthly balance sheet data for the four biggest banks in South Africa. We distinguish between three different categories of bank lending for household and corporate borrowers and report complementary local projection estimates to capture dynamic impacts. We find little evidence that the introduction of higher capital requirements under Basel III has reduced the supply of bank credit in South Africa. We surmise that this is mainly due to the large banks being well capitalised and operating with capital buffers that are larger than regulatory minimum requirements.

The Macroeconomic Relevance of Mobile Money

Mphatso Elias Ackim, Nicola Viegi, Omogolo Mighty Maripe, Marietta Mpingasa

This study examines the implications of the emergence of mobile money for the macroeconomy, particularly on the forecasting accuracy of inflation and real output growth, given the innovation's potential to facilitate monetary stability. Mobile money has emerged as the dominant financial service in low- to middle-income countries, boasting a significantly higher number of registered accounts than traditional bank accounts. This structural shift may entail the need to revisit monetary policy conduct and forecasting techniques as inflation targeting remains the central element of macroeconomic management. The present study, therefore, employs the Bayesian structural vector autoregressive models for Botswana, Namibia, Zambia, and Malawi to in-sample quarterly datasets before mobile money emergence (2003–2011) and datasets after the emergence (2012–2020) to perform out-of-sample quarterly forecasts for the horizon 2021 to 2023. Based on log predictive scores and continuously ranked probability scores, the study finds that inflation forecasts using datasets after mobile money's emergence exhibit marginal improvements over datasets before the emergence of mobile money in Botswana and Namibia but not in Malawi. However, the results show that inflation forecasts improved in Namibia, Malawi, and Zambia after mobile money was considered the only measure of monetary activities. Real output growth forecasts also improved in Botswana, Namibia, and Malawi following the emergence of mobile money. The outcome of the analysis suggests the potential relevance of mobile money usage to monetary stability and forecasting accuracy. The results also indicate that the emergence of mobile money has altered the plausible determinants of inflation in these economies. The analysis underscores the need for monetary authorities to revise their frameworks to adapt to the changing macroeconomic landscape shaped by digital financial innovations.

Parallel Session I2: Monetary Macroeconomics

Redefining the Transmission Mechanism of Monetary Policy: A Structural Analysis of SACU Economies in an Era of Global Uncertainty

Adelakun Ojo Johnson, Makomo Macheli

This study investigates the transmission mechanism of monetary policy within the Southern African Customs Union (SACU), set against the backdrop of shifting global uncertainties. Effective coordination of monetary policy remains a challenge, particularly due to SACU's distinctive economic framework characterized by shared external tariffs and differing national economic structures. While previous research has highlighted variations in the effectiveness of monetary policy across SACU member states, there has been limited focus on how factors such as commodity price fluctuations, geopolitical risks, and financial market volatility exacerbate these disparities. This analysis employs a Structural Vector Autoregressive (SVAR) model to assess the impact of monetary policy shocks on real GDP, inflation rates, nominal exchange rates, and nominal interest rates across SACU countries from the first quarter of 2000 to the fourth quarter of 2023. The SVAR model is particularly useful for examining the relationships between variables, while also addressing issues of endogeneity and simultaneity. For the first time, this research incorporates the influence of global uncertainties into the examination of economic factors, revealing that South Africa's monetary policy significantly affects the smaller economies within SACU. The findings underscore the existence of a complex transmission mechanism for monetary policy in the region, highlighting the urgent need for improved policy cooperation. This study enhances our understanding of the transmission mechanisms at play in SACU.

Predicting Balance of Payment (BOP) Crisis, The Case for Zimbabwe

Tapfumanei Chikocha

The research seeks to explore the vulnerability of Zimbabwe, a developing country, to BOP crisis and establish significant causes. It also seeks to establish interlinkages of the country's economic challenges and derive an econometric model to predict BOP crisis. The study used a time series logistic model based on secondary data to build an early warning model for predicting BOP crisis in Zimbabwe for both in-sample and out-of-sample periods. The in-sample period covered 1984-2020 while out-of-sample predictions were 1980-1983, 2021 and 2022.

The specific model's outcome was economically validated with growth of money supply, exports and fiscal deficits being significant early warning signals for BOP crisis. The growth of money supply and fiscal deficit increase the likelihood of BOP crisis while export growth reduces it. Using model generated optimal cut-off probability of 75%, the model performed well in predicting BOP crisis for in-sample and above average in predicting out-of-sample.

The model may be used for forecasting BOP crisis in Zimbabwe, as a policy monitoring instrument in tranquil periods and a guide in prescribing economic policies for developing countries.

Parallel Session I3: Unemployment and Work-Seeking Strategies

Examining Discouraged Workseekers in the South African Labour Market

Jay-Dee Sauls, **Derek Yu**, Rochelle Beukes

This study examined the discouraged workseekers in South Africa, which has been a seriously under-researched group of working-age individuals in the country. First, descriptive statistics were derived by using selected waves of the cross-sectional labour survey data to compare the characteristics of the discouraged workseekers and unemployed, and the findings showed that they shared almost identical characteristics that both groups of individuals were predominantly young female Africans with incomplete secondary education. The only main difference was the former group was more likely to be urban residents whereas the latter group was more likely to live in rural areas. It was also found that over 40% of discouraged workseekers never worked before, and about half of them last worked more than three years ago. Next, using a balanced panel dataset, the study proceeded by investigating whether work-seeking discouragement was a long-term phenomenon. The findings showed that none of the sampled people in the balanced panel were classified as discouraged workseekers in all five waves of the data under study. In addition, 13% were defined as discouraged workseekers in one wave, while only about 2% were distinguished as discouraged workseekers in two to four waves. Lastly, focusing on those who were discouraged workseekers at the time of the first wave, only 2% of them had their status unchanged at the time of the fifth wave, but 47% and 19% have transitioned to become employed and unemployed, respectively.

Transitioning Beyond Matric in South Africa

Gabrielle Wills

During and after the COVID-19 pandemic, South Africa saw record numbers of passes in the National Senior Certificate (or commonly referred to matric). Against a context of rising school completion, this paper explores the post-school transitions of recent matriculants in South Africa, addressing the following question: What are recent matriculants doing? Using the Quarterly Labour Force Survey, the paper highlights how an increasing proportion of recent matriculants (identified as youth aged 15-24 with only a matric or equivalent qualification) are classified as "Not in Employment, Education, or Training" (NEET). Prior to the COVID-19 pandemic (2014-2019), around 44-45% of recent matriculants were NEET. This percentage rose to 47.5% in 2021, peaked at 55% in early 2022, and remained elevated at about 49.8% in the first quarter of 2024. Matriculants who are NEET in 2024 are also in a more vulnerable position than matriculants who were NEET pre-pandemic. The growing NEET problem among recent matriculants, and youth more generally, is related to reduced employment prospects amidst limited expansion of post-school education and training (PSET) opportunities. The employment probability age profile of those with only a matric in 2024 roughly resembled the comparable profile of individuals without a matric in 2014. Nevertheless, having a matric compared to leaving school without it still plays a protective function in limiting youth's NEET exposure. Expanding PSET opportunities, aligning education with the evolving demands of the labour market, and creating robust pathways for youth to transition from education to meaningful employment are critical to addressing the rising NEET issue and improving the prospects of recent matriculants and youth.

Parallel Session I3: Unemployment and Work-Seeking Strategies

Evaluating the Impact of Affordable, Fast, Uncapped Internet on Low-Income Households

Helanya Fourie, Debra Shepherd

At 32.1%, South Africa has one of the highest unemployment rates globally. Particularly concerning is the level of youth unemployment, which stands at 45.5%. Addressing this challenge requires innovative approaches to improving access to economic opportunities.

In many ways, the internet has become indispensable for education, entertainment, and commerce. National Treasury has highlighted that it will target digital public infrastructure as part of structural reform. However, whilst access to ICT pulls people into the economy, it can also create a 'digital divide', exacerbating social and economic inequalities. The rollout of affordable, fast access fibre has allowed for a lower cost-per-megabit than mobile data, yet the latter remains the almost ubiquitous mode of connectivity amongst low-income households.

This study aims to evaluate the impact of fibre connectivity in a socio-economically disadvantaged setting. In early 2023, fibertime™ systematically started setting up a low-cost aerial fibre network in Kayamandi, a township on the outskirts of Stellenbosch. By June 2024, the whole Kayamandi had been connected, and just under 8,000 homes had taken up the service. Two waves of survey data were collected in 2022 and 2023 from a stratified random sample of 1,001 households (a third wave is due to be collected in 2025). The study is set up as a quasi-experimental pre-post design since all respondents may have been 'treated' in 2023. We use generalized difference-in-difference regressions to estimate the effects of fibre access on internet usage behaviour, challenges and benefits experienced with connectivity, job search, and employment.

The introduction of fibertime™ significantly enhanced internet accessibility: 35% of respondents in 2023 reported primarily relying on fibre, compared to less than 3% in 2022. We find a substantial increase in total employment, especially in formal employment among fibre users. Challenges with cost and data limitations also declined, highlighting the network's affordability.

Does Moving Between Cities Pay Off? Economic Outcomes for South Africa's Intercity Migrants

Takudzwa Mutize, Justin Visagie

Cities attract talent and innovation, driving growth through agglomeration economies. In African cities, the focus has been on rural to urban migration, overlooking intercity labour migration. This study examines the impact of intercity labour migration on household income, employment, and wages in South Africa, a country with significant income disparities and high urbanization rates. Using longitudinal data from the National Income Dynamics Study (NIDS) from 2008 to 2017, we compare economic outcomes for urban adults who relocate to new cities with those who stay put. Employing Ordinary Least Squares, Fixed Effects and Difference-in-differences models to control for selection bias and simultaneity, the results show a positive impact on income and employment for those moving between urban areas. Notably, upward mobility is not dependent on skill level or moving to larger metros. These findings highlight the importance of understanding urban worker flows and the broader urban system beyond the rural-urban dichotomy.

Parallel Session I4: Environmental and Resource Economics

South Africa's Vehicle Carbon Tax and Its Impact on Automotive Sector Performance

Esona Jara, Syden Mishi

In 2010 South Africa joined the multiple countries who charge a vehicle carbon tax with the aim to influence the composition of South Africa's (SA) vehicle fleet to become more energy efficient and environmentally friendly by disincentivizing the purchase of high-emission cars such as sport utility vehicles that have internal combustion engines. The passenger vehicle tax in South Africa was introduced as part of a larger strategy to deal with the nation's high levels of carbon emissions. Considering the global context of environmental sustainability and South Africa's commitments to decreasing GHG emissions, the vehicle tax represents a key policy instrument in meeting those obligations. The main objective of the study is to analyse the industry-wide impact of South Africa's CO₂ tax on the performance of the automotive sector. Facing the challenge of a growing global NEV market and a staggering national growth trend, the tax raises the price of vehicles without incentivising the purchase of NEVs. The study uses the Leontief Input-Output (IO) model to analyse the impact of CO₂ passenger vehicle tax on the automotive sector of South Africa. This framework is useful in analysing the interdependence of industries in an economy. This model provides an economy-wide analysis of the effects of carbon tax on the automotive sector and interlinked sectors, underscoring the direct, indirect, and induced effects in South Africa. The study answers what most studies covering vehicle carbon taxes do not cover, which is the economic effect of vehicle carbon taxes and how these taxes can be used to achieve sustainability goals of industrial policy. The automotive sector is a backbone of the South African economy, and it is imperative to analyse whether this tax policy aligns with industrial goals and whether it can be used to the benefit of the industry.

The Moderating Role of Digital Technologies on the Effect of Tourism and Trade Openness on Environmental Sustainability in SADC Economies

Lovemore Taonezvi, Gomolemo Gashiten

This study explores the relationships between tourism growth, trade openness, digital technologies, and environmental sustainability in 10 Southern African Development Community (SADC) countries from 1995 to 2021. Using the fully modified ordinary least squares (FMOLS), canonical cointegrating regression (CCR), and method of moments quantile regression (MMQREG) models, it examines the long-term effects of tourism growth, trade openness, and internet usage on total greenhouse gas (GHG), carbon dioxide (CO₂), methane (CH₄), and nitrogen oxide (N₂O) emissions. The analysis incorporates the Environmental Kuznets Curve (EKC) and Pollution Haven Hypothesis (PHH) frameworks. Results show non-linear relationships between tourism growth, trade, and emissions, confirming the inverted U-shaped EKC for CH₄ and N₂O, and the U-shaped EKC for total GHG and CO₂. Digital technologies amplify tourism's environmental impact but slightly mitigate trade-related emissions, rejecting the PHH. The study highlights the moderating role of digitalization in the tourism-trade-environment nexus and emphasizes the need for policies promoting sustainable tourism, eco-friendly trade practices, and green digital infrastructure. Tailored approaches are recommended to address the specific environmental impacts of economic activities in the region.

Parallel Session I4: Environmental and Resource Economics

Green Technological Innovation and Carbon Dioxide Emissions in SSA: Does Global Uncertainty Matter?

Witness Nyasha Bandura, Senia Nhamo

The research investigates the impact of green technological innovation and global uncertainty on carbon dioxide (CO₂) emissions in sub-Saharan Africa (SSA). To add on the body of knowledge, the intermediation role of global uncertainty on technological innovation and CO₂ emissions nexus is also examined in the region. This is highly motivated by episodes of global uncertainties which include 2008 financial crises and the most recent COVID-19 pandemic. In view of the 2030 Agenda for Sustainable Development Goals (SDGs), the current study focuses on the 13th goal which deals with Climate Action. As such, combating climate change focusing on green technological innovation and global uncertainty is the core of this study.

The system GMM method is applied on 4 year non-overlapping averaged data for 31 countries in SSA over the period 1998 to 2021. Empirical evidence showed strong positive impact of economic uncertainty on CO₂ emissions in SSA. This is supported by the investment effect which hypothesise that uncertainty reduces investment in innovation which worsens environmental quality. Contrary to expected findings, green technological innovation failed to curb carbon dioxide emission in SSA. This could be attributed to green technological innovations being less effective in terms of mitigating CO₂ emissions as they are in their early phases of development as suggested by Dauda et al. (2019). Besides, the production-focused innovation activities in these less industrialised economies, based on the heavy use of unsustainable energy sources as fuels for economic growth, increased (rather than) reduced CO₂ emissions as argued by Khattak et al. (2020). The intermediation effect between uncertainty and green innovation on CO₂ emissions is negative and statistically significant. This could be following contingency plans as policy makers are compelled to respond to economic uncertainty through intensive research and development which then results in a reduction in CO₂ emissions.

Parallel Session I4: Environmental and Resource Economics

Re-Examining the Natural Resource Curse: Is Resource Abundance a Blessing or a Curse?

Sarah Wilhelmi, Gavin Keeton

The belief that an abundance of natural resources is negative for a nation's long-term economic performance enjoys considerable support in popular economic discourse. Central to this belief is the finding by Sachs & Warner (1997) of a negative relationship across nations between natural resource abundance and per capita GDP growth. Sach's & Warner's findings have been challenged for two reasons. Firstly, it is suggested that by using natural resources as a share of total exports, Sachs & Warner in fact measured resource dependence rather than endowment. It is possible for a country to be dependent upon natural resource exports without having very large resource endowment. Secondly, Sachs & Warner examined just the period 1970-1990. A more recent time period may yield different findings.

This paper updates previous findings by measuring the relationship between natural resources and GDP growth for the period 1991-2023 and the sub-periods 1992-2010 and 2011-2023 and compares the results with the period 1970-1990. Sachs & Warner's proxy of primary exports as a percentage of GDP is used to measure resource dependence. In addition, the World Bank's Natural Wealth estimates are used to measure resource abundance rather than dependence. Additionally, the influence of commodity price fluctuations on the results is examined during periods 1970-2001, where real commodity prices fell, and 2002-2023, when real prices increased.

The findings show that the negative relationship between resource dependence and GDP growth has weakened since the 1970-90 period. The abundance metric finds a lesser negative relationship for all periods. Commodity price fluctuations are an important influence on whether or not the relationship to growth is negative. The results suggest that commodity endowment is not obviously negative for economic growth and countries should seek to implement appropriate policies and create institutions that positively harvest the benefits of their resource endowment.

Parallel Session 15: Financial Macroeconomics

The Exchange Rate Instability During the Fixed Exchange Rate Regime in South Africa

Simiso Msomi

The management of exchange rates is important for developing economies whose currencies are fixed or pegged to other currencies. The literature shows that in a period of high capital mobility, the exchange rate becomes more unstable. In the modern era of high capital movement, some policymakers are preparing their economies or are indicating an intention to enter into an economic and monetary union. This has implications for the behaviour of the exchange rates. However, the extent of the instability the exchange rate might experience is not easy to determine. This study assesses the extent of instability of the exchange rate during the fixed exchange rate regime. The study uses the DSGE model to evaluate the behaviour of the exchange rates.

Financial Sector Development and Central Bank Credibility Nexus: An Analysis of the Linkages

Nkhame Raphaela, Sibanisezwe Khumalo, Meshach Aziakpono

This study investigates the relationship between financial sector development and central bank credibility in South Africa (SA) over the period 2000–2023. Using a time series dataset, the research employs an Autoregressive Distributed Lag (ARDL) model to test for cointegration and determine whether a long-run relationship exists between financial sector development and central bank credibility, based on the order of integration of the variables. The ARDL model is further adapted to estimate short-term effects through an Error Correction Model (ECM), providing insights into both immediate and long-term dynamics.

To quantify central bank credibility, the study proposes constructing a credibility index for SA using Principal Component Analysis (PCA). PCA is a statistical technique that reduces data dimensionality while preserving key information by identifying principal components that capture variability within the dataset. This credibility index will be derived from key determinants such as the achievement of announced monetary targets, historical inflation performance, transparency of monetary policy, central bank independence, accountability, public debt, and the influence of financial sector development.

The analysis framework includes a comprehensive review of the theoretical and empirical literature, data and methodology, and a detailed exploration of the results, culminating in recommendations. The research aims to answer a critical question: Does financial sector development in South Africa enhance, diminish, or have no effect on the credibility of the South African Reserve Bank (SARB)?

The results are expected to shed light on the interplay between financial sector development and central bank credibility, offering valuable insights for policymakers. Future research may extend this inquiry by examining the evolving nature of financial sector development and its implications for central bank credibility and effectiveness.

Parallel Session 15: Financial Macroeconomics

The Relationship Between Oil Prices and Exchange Rate In South Africa *Confidence Nthebe*

The changes in Crude oil prices fluctuations have huge impact for the global economy, and South Africa is no exception. The dynamics between oil prices, exchange rates, inflation, and the terms of trade are particularly significant for countries that rely heavily on imported oil. This study explores the impact of crude oil prices on the real effective exchange rate in South Africa, with a focus on the relationships between oil prices, exchange rates, inflation, and terms of trade. Using quarterly data from 2000Q1 to 2023Q4, the research employs a Vector Error Correction Model (VECM). The study finds that Brent crude oil price shocks have a significant positive effect on real effective exchange rate (REER) in the long term. The analysis also shows a strong positive relationship between Brent crude oil prices and the terms of trade, while a negative relationship exists between inflation and the REER. Furthermore, the impulse response functions highlight the harmful effects of oil prices shocks on inflation and terms of trade, underscoring South Africa's vulnerability due to its dependence on oil imports.

Based on these findings, the study recommends that South Africa prioritize investment in alternative and renewable energy sources to reduce reliance on imported oil. Additionally, the South African Reserve Bank should integrate oil price shocks into its inflation-targeting framework, and the government should consider providing cash transfers or fuel subsidies to households and firms most affected by shocks in oil prices. This study contributes to the growing body of literature on the economic impacts of crude oil price fluctuations, particularly in the context of South Africa's unique economic structure.

Market Uncertainty and the Exchange Rate-External Debt Nexus: Evidence from Sub-Saharan Africa *Kwame Osei-Assibey*

How would the exchange rate-external debt nexus behave during periods of heightened uncertainty? Based on what extant literature suggests, positive feedback effects between exchange rate depreciation and market uncertainty can occur: When such feedback relationship persists and causality on exchange rate – external debt nexus runs both ways, then a vicious cycle could ensue and the endogenous consequence of the link between persistent exchange rate depreciation, heightened market uncertainty and external debts sustainability could be devastating: Thus any relevant empirical evidence on this relationship should be useful. The paper adopted the PVAR framework to examine the dynamic linkages for a panel of Sub-Saharan African countries : Not only are this group debts significantly denominated in foreign currency due to the persistence of the problem of 'original sin' , but they also continue to face challenges with periods of sustained heightened market uncertainty, episodes of persistent currency depreciations, debt management problems and, are also comparably more vulnerable to adverse exogenous shocks to exchange rate uncertainty and capital flow volatility. Evidence from this study should guide governments, policymakers, and international development partners in designing robust systems and structures and implementation of credible policies that help to prevent the possibility of a destabilizing vicious cycle of currency fluctuation, market uncertainty, and debt management problems.

Parallel Session J1: SA-TIED Special Session: Balancing Fiscal Policy, Climate Sustainability, and Social Equity in South Africa

The Sustainability of South African Fiscal Policy

Philippe Burger

The public-debt-to-GDP ratio in South Africa increased from 26 per cent in the 2008/09 fiscal year to 73.9 per cent in 2023/24, raising fears that fiscal policy is not sustainable. This raises the question: did the government take steps to arrest the increase in the debt-to-GDP ratio and regain fiscal sustainability, and if so, why did they fail? Establishing fiscal sustainability can be done directly or indirectly. Doing it directly entails the government increasing the primary balance in reaction to higher debt levels. Hence, this paper presents a fiscal reaction function. The analysis shows that during the period in which the public-debt-to-GDP ratio rose, the primary balance did indeed react to an increased debt burden, but its level remained too low to arrest the increase in the public-debt-to-GDP ratio. The analysis also assesses whether fiscal fatigue set in, wherein the responsiveness of the primary balance to the debt burden is positive but eventually weakens. Some evidence for the presence of fiscal fatigue is present. One indirect approach to establishing fiscal sustainability is through the impact of expenditure and revenue on economic growth. Leaving revenue for further study later, this paper presents an adapted growth equation to investigate the impact on growth of general government investment and consumption expenditure, and of public (and private) corporation investment. While the effect of private sector investment is positive, neither general government nor public corporation investment has a statistically significant impact on growth. Furthermore, government consumption has a negative impact on growth.

Towards Implementation: Aligning Just Transition Finance with South Africa's NDC Commitments

Georgina Ryan

This paper critically examines how climate finance can be mobilized to support South Africa's Just Transition in a way that meaningfully advances the country's updated Nationally Determined Contributions (NDCs). It challenges the prevailing analytical frameworks, notably the reliance on Putnam's two-level game theory as employed in recent assessments of the Just Energy Transition Partnership (JETP), arguing that such a framework offers limited utility in designing actionable, country-driven financing mechanisms. Instead, the paper proposes an alternative methodological approach combining governance reform analysis, economic modelling, and climate finance structuring, with an emphasis on green industrialization and the Water-Energy-Food (WEF) nexus. Through this lens, it identifies the critical institutional and policy enablers required to align sustainable finance flows with NDC implementation. The paper delivers policy recommendations for enhancing transparency, ensuring justice in transition pathways, and strengthening the National Treasury's role in coordinating and leveraging climate finance for long-term development impact.

Parallel Session J1: SA-TIED Special Session: Balancing Fiscal Policy, Climate Sustainability, and Social Equity in South Africa

Financing Sustainable Infrastructure with Limited Resources: Local Government Financial Sustainability and Vulnerability in the Context of South Africa's Just Energy Transition

Julia Tatham

Transitioning to a low-carbon economy in the face of climate change presents various risks. A Just Transition aims to build resilience against physical, social, and transition risks to protect the rights and livelihoods of the most vulnerable. Local governments play a critical role in Just Transition by protecting communities and investing in sustainable infrastructure. Ensuring that at-risk municipalities have the resilience, capacity, and resources needed to respond effectively to local transition impacts and mitigate climate risks is crucial. This study will combine various data sources to build a picture of the social risk facing local municipalities in South Africa. A panel analysis will then be conducted investigating how the socio-economic profile of municipalities might impact their ability to collect revenue, provide basic services, and achieve financial sustainability. The outcomes of this analysis will be used to inform policy on the distribution of Just Transition funding to struggling municipalities facing undue social risk.

The Economic Context of the Realisation of Socio-Economic Rights

Philippe Burger

The South African constitution is considered progressive and transformative in intention due to its inclusion of socioeconomic rights, such as the right to education, land, food, and healthcare. However, some of these rights are qualified by the availability of resources to the state, which places an imperative on the state to realize these rights progressively as resources become available. The deteriorating economy, low economic growth, and worsening public finances have led to increasing pressure on the government to cut its expenditure to regain fiscal sustainability and stem the growth of the government's debt burden. This threatens to roll back the progressive realization of socioeconomic rights, a phenomenon known as retrogression. A range of individuals and organizations oppose the cut-back of expenditure.

The paper addresses how the government should reconcile the imperative placed on it by the constitution to realize socioeconomic rights with limited and shrinking resources available to do so.

Parallel Session J2: Monetary Macroeconomics

Evaluating the SARB's New Inflation Target in Context of the Inflation-Thresholds-Growth Relationship: A Rolling Regressions Approach

Andrew Phiri, Asanda Fotsyi

The South African Reserve Bank (SARB) has recently expressed its intention to reduce the inflation target from 4.5% to 3%. This study examines whether this proposed target is aligned with the optimal level of inflation that maximizes economic growth in South Africa over the period from 2003 to 2024. While previous studies have identified inflation thresholds that maximize economic growth or minimize growth losses, we explore two novel approaches to provide more clarity on the relationship between inflation thresholds and growth. Firstly, unlike earlier studies that estimated a single inflation threshold for the entire period, we assume that the optimal threshold may vary over time. We analyze this by applying fixed window and recursive rolling regressions to Hansen's (1999, 2000) threshold autoregression (TAR) model. Secondly, based on the rolling regression results, we generate a time series of inflation thresholds and apply the autoregressive integrated moving average (ARIMA) model to forecast future trends in these thresholds. Our findings show that the inflation threshold has indeed varied over time, with lower thresholds of 2-3% observed during earlier periods and higher thresholds of 6.69% in more recent years, particularly after the COVID-19 pandemic. The forecasts further suggest that inflation thresholds will continue to rise in the future. Overall, our study argues that the SARB's plan to lower the inflation target to 3% could be too restrictive for promoting economic growth. Given the evolving nature of inflation thresholds, we recommend that the SARB maintain the current target until South Africa reaches a higher level of economic development, at which point a lower target may be more appropriate.

The Role of the South African Reserve Bank in South Africa's Monetary Architecture

Chantal Naidoo, Yasmin Meerholz, Patrick Lehman-Grube

The paper investigates the SARB's balance sheet over four key "shock periods" (1983, 1994, 2008, 2022) and the surrounding years. Focusing on its responses to significant historical crises and their interconnections with financial actors. The paper incorporates a static balance sheet analysis and the associated political economy context, considering liquidity ratios and balance sheet movements over time. The key findings reveal that the SARB's balance sheet has consistently expanded across different political and economic contexts, with shifts in liquidity driven by foreign reserves and government bonds post-1990. Advances to banking institutions and government bodies have fluctuated, with notable increases during crises such as COVID-19, highlighting the SARB's role in ensuring financial stability. The paper also observes trends in the SARB's foreign currency deposits and reserve ratios, which reflect global financial regulations and may shape future policy responses. The analysis underscores the conservative, financial stability-focused approach of the SARB, and calls for a reflection on how the SARB can contribute to sustainable economic growth and support just, inclusive, and equitable transitions.

Parallel Session J2: Monetary Macroeconomics

How Does Inflation Momentum & Inflation Expectations Drive Current Inflation in South Africa: Application of the HNKPC Framework?

Amon Magwiro

The article seeks to unravel the role of inflation momentum as well as inflation expectations in predicting the behaviour of current inflation in South Africa for the period of study. The knowledge of the predictors of inflation is important for monetary policy in South Africa in as far as price stabilisation is concerned. In addition to the inflation momentum and expectations the article also interrogates the relationship that exists between Inflation and exchange rate. A Hybrid New Keynesian Phillips-Augmented Expectation (HNKPC) equation showed that Inflation Inertia as well as inflation expectations significantly impacted on current inflation. The exchange rate pass-through during the study period was only 31 percent meaning that inflation was not an exchange rate phenomenon but other factors. The study recommends continuation of the current policy of flexible exchange rate as well as inflation-targeting policy. The results also show that there is need to take measures to dampen inflation-expectations by economic agents through time-consistent policies by Government or its agencies.

Alternatives to Price Control and Queflation

Darrol J. Stanley, Jannie Rossouw

Inflation is never transitory, as was recently argued in some developed economies when price levels accelerated. This recent experience shows that policy makers should always be vigilant and should not shy away from appropriate policy responses. When policy makers are not diligent enough with both monetary and fiscal policy changes, price levels increase, and consumers suffer. The proper monetary policy response under conditions of accelerating inflation is tighter monetary policy resulting in higher interest rates. Debtors dislike this policy, but it is welcomed by savers. Governments often have a sense that there are more voters with high levels of borrowing than voters with saving deposits.

Governments therefore look for other options than the appropriate monetary or fiscal policy responses when inflation accelerates. One dangerous alternative is price controls which give governments a false sense of assurance that they have done something to contain prices for voters. There are many downsides to price controls, including rationing and shortages. Consumers simply cannot find stocks of goods subject to price controls when prices are kept at an artificially low level. This manifests in customers queueing for goods in short supply. As this condition has no formal name, the term Queflation was developed. Consumers should beware of the lurking danger of Queflation and therefore respond with skepticism to price controls.

Economic literature is robust with criticisms of price controls. This paper will only highlight the key criticisms of price controls. The focus of the paper and its contribution to economic literature will center on suggesting alternatives for Governments rather than formal price controls. The paper will suggest new policy orientations, including regulatory reforms and/or laws, by which Governments can increase the supply of goods to consumer-voters with positive rather than negative outcomes caused by implementing price controls.

Parallel Session J3: Education and Health Outcomes in Childhood

Investigating Cognitive Gains from Attending Early Childhood Development (ECD) Centres with Improved Data

Servaas van der Berg

This paper builds upon earlier research into the cognitive benefits of Early Childhood Development (ECD) programs in South Africa, leveraging a new high-quality dataset to address the limitations of prior studies. Previous findings based on the Early Learning Programme Outcomes (ELPO) study revealed significant cognitive gains in a small subset of well-performing yet resource-constrained ECD centres. However, findings from the Thrive by Five 2021 dataset suggested that such gains may have largely been confined to ECD centres in more affluent areas, raising equity and efficiency concerns. A key feature of this dataset was its ability to track children's exposure to ECD programs before Grade RR as the duration of prior enrolment. This was a critical limitation of this earlier study, as inconsistent attendance during the COVID-19 pandemic likely affected dosage. The resulting mismeasurement may have attenuated the findings. The problem then was that the exposure variable related largely to 2020, during which the pandemic restricted the opening of ECD centres.

This new study focuses on the newly available Thrive by Five 2024 dataset, which is nationally representative and provides more robust data for analysing ECD participation prior to Grade RR (children aged 4–5 years), i.e. before 2024. Specifically, the dataset captures the month and year of a child's initial enrolment in an ECD program, allowing for an approximate calculation of cumulative exposure before the assessment year. As in the previous study, I will explore marginal effects by quintile to determine whether there is still evidence of differential impacts by socio-economic status.

Child Heights in South Africa: 1900-1970

Dieter von Fintel, Romy Bogner, Charl Schoeman

Modern-day South Africa has high stunting rates for its level of economic development. Recent systematic reviews show that the stunting rate has only declined modestly since the 1970s. For lack of data, little systematic evidence is known about whether stunting has "always" been high, or whether historical changes in agricultural and nutrition policy, racial segregation and economic growth have played a role in reducing or aggravating stunting. Evidence using historical adult heights show that anthropometric markers followed historical economic movements and were affected by apartheid policies. A recent review of historical global child stunting shows that internationally stunting declined rapidly since the second World War: but South African data are hard to aggregate into "single indices" because of the racial and socioeconomic inequality that result in strongly varying outcomes. This paper uses data collected from historically published studies to explore time trends in child heights in South Africa before 1970. Our study does not attempt to produce a "single" trend, but accounts for heterogeneous experiences of political and socioeconomic circumstances and analyses the child height trajectories of various sub-groups in light of these experiences. We find that white children were comparatively tall by international standards as early as the 1930s, with other groups facing severe disadvantage. But there were modest improvements in child heights for all racial groups, matching trends in previously published adult height data. Child stunting is therefore sensitive to historical economic conditions in South Africa, with the implication that South Africa's current situation has the possibility of shifting if the heterogeneous experiences of children is adequately addressed.

Parallel Session J3: Education and Health Outcomes in Childhood

Measurement invariance testing of Social-Emotional Learning skills: Evidence from TIMSS and PIRLS Grade 5 and Grade 9 learners in South Africa

Glen Takalani

Poor mathematics and reading performance are significant challenges in South Africa's education system, negatively affecting STEM career uptake and international competitiveness. Despite policies like mandatory mathematics at the FET (Grades 10-12) level, foundational issues persist. Socio-emotional learning (SEL) has emerged as a key factor in the literature, promoting academic engagement and fostering skills critical for achievement and equity. This study evaluates the measurement invariance (MI) of learners' SEL skills (e.g., competency beliefs, task values, and school belonging) across gender and socioeconomic status (SES). Assessing the psychometric properties of these constructs ensures that observed differences in SEL across groups result from the constructs themselves rather than measurement bias. Using TIMSS (mathematics and science) and PIRLS (reading literacy) data, the study employs reflective measurement models and structural equation modelling to analyze SEL constructs. MI is tested through multigroup confirmatory factor analysis (MGCFA) and multiple indicators multiple causes (MIMIC) models to confirm how constructs are understood across diverse social contexts. Robust fit indices validate model reliability, ensuring unbiased group comparisons. Results show valid comparisons for most constructs. Affective engagement achieved metric invariance, supporting regression comparisons, though scalar invariance was limited for some groups. Grade 9 constructs (competency beliefs, task value) achieved scalar invariance with adjustments, enabling valid latent mean comparisons. This research fills a critical gap in South African and broader developing country contexts by validating SEL constructs, ensuring reliable group comparisons. It provides a foundation for designing equitable interventions to address educational disparities, ultimately enhancing outcomes for learners across varying socioeconomic and demographic groups.

Understanding the Roles of Age, Gender, and Grade R Attendance in Academic Progression and Performance from Grades 1 to 4

Bianca Böhmer

This paper draws on a student-level panel dataset constructed using school administrative data from the SA-SAMS system to examine the increase in availability, uptake and impact of Grade R at public and private primary schools from 2017 to 2023. We investigate the effects of Grade R attendance, gender, and age of entry into Grade 1 on learning outcomes in the foundation phase using a multi-linear regression model with school fixed effects. The findings indicate a negative relationship between age in months and the likelihood of repeating Grade 1, as well as a significant advantage for girls in learning outcomes. Moreover, a positive correlation is observed between Grade R attendance and better learning outcomes in Grade 1, with this effect generally more pronounced in poorer (Quintile 1-3) schools. Some differences in the mathematics and home language outcomes by month of birth persist to the Grade 4 level. However, this initial month of birth disadvantage does not appear to significantly affect drop-out rates to the end of secondary school, as evidenced by National Senior Certificate (matric) data.

Parallel Session J4: Labour Markets and Structural Adjustment

Import Penetration, Labour Market Rigidity, and Labour Market Adjustments: Evidence from South Africa

Raynold Runganga

The growth of China's exports to advanced and emerging economies following its accession to the World Trade Organisation (WTO) in 2001 induced substantial adjustments to local labour markets. Although literature exists, analysing those adjustments, there are three key gaps that this study addresses. First, literature on labour market adjustments has neglected the structural shift between formal and informal employment as an important margin of labour market in emerging economies. Second, literature has neglected the role that labour market rigidity plays in influencing the adjustment process. Last, studies have not adequately accounted for spatial dependency and spillover effects between regions arising from import penetration. This study contributes to this literature by analysing how informal and formal local labour markets adjust to import penetration and how this adjustment process is affected by labour market rigidities, accounting for spatial dependency and spillover effects arising from import penetration. The study tests for spatial dependency using the Global Moran I test and estimates the spatial econometric model using the Two Stage Least Squares method. The results from the Global Moran I show the existence of positive spatial autocorrelation among local labour markets, including informal and formal local labour markets. The spatial econometric results show that Chinese import penetration had a negative impact on informal employment, a positive impact on formal employment, and no impact on total employment. The results also show that in regions that are relatively rigid, higher regional exposure to import penetration result in an increase in informal employment, a decrease in formal employment, and no impact on total employment. The results of the paper also show the direct and indirect effects of regional exposure to import competition, although some of the indirect effects are insignificant.

Search Frictions and High Unemployment in the South African Labour Market

Sibusiso Gumbi, Noreen Kajugusi, Richard Kima, Kunal Sen

South Africa's high unemployment rate is one of the well-known and documented challenges that the country has faced since its transition to democracy. While much discussion of this issue has centered around the country's existing labour market institutions and the regulatory environment, a less explored explanation is offered by Diamond, Mortensen and Pissarides' search and matching theory. According to this theory, costly search frictions in the form of time, resources and effort make it difficult for unemployed workers to match with firms with vacancies. These search frictions can also limit the reallocation of workers across sectors and may be amplified by different socio-economic characteristics such as age, education and gender. Hence our research question: to what extent can frictions in the South African labour market help explain the persistently high unemployment rate in the country? To answer it, we build a search and matching model calibrated and estimated to match key macro and micro moments of the South African economy, drawing from Rud and Trapeznikova (2021) and Poschke (2024). The constructed framework will help assess the impact of search frictions on unemployment and growth and provide a basis for evaluating the country's labour market policies.

Parallel Session J4: Labour Markets and Structural Adjustment

The Productivity Effects of Intermediate Imports and Absorptive Capacity in South Africa

Brian Tavonga Mazorodze

This paper examines how skilled workers moderate the impact of intermediate imports on productivity in South Africa between 1993 and 2023. Using a panel dataset comprising 76 industries and several panel cointegrating estimators, it finds a positive long run impact of intermediate imports and skilled workers on productivity controlling for unit labour costs, capital labour ratio and industrial markup. However, their interaction is negative, suggesting weaker productivity gains in industries with more skilled workers, possibly reflecting a mismatch between domestic skills and imported technical know-how. Sectoral differences, technological intensity, and alternative estimators do not alter this result. The findings highlight the need for policies aligning domestic skills with imported intermediates to maximize the attendant productivity gains.

The Impact of Capital Flight on Unemployment Rate in South Africa: An Autoregressive Distribution Lag Approach

Naledi Pila

Capital flight could be a major problem for South Africa, which if not addressed it can still impede the economy's ability to handle structural problems resembling high unemployment rate and concentration of wealth. Moreover the expansion rate of unemployment in South Africa is turning into a problem of great public policy concern. On the opposite hand, capital flight is another issue that has generated great considerations among economists with regards to its growth over the last decade significantly in South Africa. This study examined Capital Flight and Unemployment rate in South Africa for the period 1994 to 2020. The unit root test was conducted for variables employed to examine the stationarity or non-stationarity, therefore the study revealed that capital flight is stationary at level, while unemployment rate is stationary at first differenced. The study conducted both the informal and formal unit root test, it further showed the ARDL bound test, to assess the long run relationship of the variables employed, and the variables are cointegrated in the long run, meaning the variables are co-moved. The study further conduct the Granger Causality that is computed to investigate the causal relationship between capital flight and unemployment rate. Therefore it revealed that, there is no directional between capital flight unemployment rates. Lastly the study conducted the diagnostic and stability tests. The study makes the case that the most widely prevalent measure of capital flight can at best be treated as a resident capital flow, which captures not only capital flight, but other influences as well. Keywords: Capital Flight; Unemployment rate; Autoregressive Distributed Lag approach; Granger Causality; South Africa.

Parallel Session J5: Prices, Households and Wellbeing

Living Income Benchmarking for Rural Households: The Case of Umhlabuyalingana Local Municipality

Mbongeni Zwelakhe Ngubane, Irshaad Kaseeram

The income living income benchmark has received considerable attention in a few African emerging markets. In South Africa, this study is conducted to lay foundation on this topic, for its contribution towards advanced living standard and genesis of poverty lines. The study aim to establish to living income for rural households taking into consideration their spending pattern on necessities. The study is guided by some but not limited to the following theories, poverty as social problem, Maslow hierarchy of need, adult male equivalence and adult equivalence. Few questions are addressed, such as what is reasonable living income standard is needed by rural household to be in equal living standard with standard households in rest of the world? What are elements that form part of necessary spending (like food)? The study was conducted at uMhlabuyalingana in UMkhanyakude District, the Northern part of KwaZulu-Natal province in South Africa. The primary data was extracted from local household heads for food diet consumption, education expenses, health expenses, and non-food and non-housing expenses. Local healthcare staff workers and owners of well-built first-class houses that meet international standards were equally considered. Food prices were observed from local markets, open-air markets and tuck shops. Secondary data from easy data quantic and secondary reports from Statistics SA were considered. The findings indicated that the living income for rural households is 6.62 per day due to a lack of infrastructure, high housing costs, and a lack of standardized materials. Housing costs contributed more than 50% of non-food and non-housing costs followed by food expenditure. Local household food consumption is not an issue, however, housing does not meet acceptable universal standards or local housing requirements for the location.

Impact of Food Inflation on Household Welfare

Christina Wieser, Wondimagegn Tesfaye, Eleni Yitbarek

The study uses the last two waves of the Ethiopian Socioeconomic Survey and difference-in-difference approach to investigate the impact of food inflation on household welfare in rural and urban Ethiopia. Food inflation, as measured by Laspeyres and Paasche indexes, had a strong negative impact on the consumption of urban households. Between 2019 and 2022, exposure to above-average food price inflation negatively and significantly impacted households' real total consumption nationally. High food inflation (exposure to higher inflation than the average inflation rate in the country) affects households differently depending on their place in the welfare distribution and area of residence. The poorest households are particularly adversely affected in both urban and rural areas, but urban households experienced a larger welfare loss due to high food inflation. The study highlights the importance of reforming food policy to counterbalance the effect of food price shocks. Efforts aimed at improving agricultural markets in rural areas, expanding social protection, and enhancing endowments such as education are crucial in sustaining progress towards poverty reduction and enhancing the capacity of households to withstand food price shocks. In the absence of these policies, the strides made in reducing poverty might be undone.

Parallel Session J5: Prices, Households and Wellbeing

Inflation's Fine Print: How Price Stability Shapes Well-Being Across Households in South Africa

David de Villiers, Andrew Phiri

Since 2000, the South African Reserve Bank (SARB) has pursued inflation targeting as its primary monetary policy strategy. However, recent criticism argues that SARB's mandate does not necessarily translate into improved well-being, particularly for lower-income households. This paper constructs a well-being index using annual household survey data (2002–2024) and compares its evolution to inflation trends, measured via the Consumer Price Index (CPI). Unlike traditional economic indicators, this index captures multidimensional aspects of welfare, such as consumption patterns and access to services. This study investigates the correlation between inflation rates and household well-being to determine if they exhibit a synchronous relationship. The use of quantile regressions allows for distributional analysis, allowing for the identification of whether inflation has heterogeneous effects across different segments of the population. The findings contribute to the broader debate on central bank mandates, assessing whether inflation targeting equitably improves household welfare or disproportionately affects different socio-economic groups. The results have implications for future policy design, particularly in economies with high inequality like South Africa.

The Prices of Healthy and Unhealthy Foods in South Africa

Waldo Krugell, Christine Taljaard-Krugell

South Africans have experienced a spike in the cost of living since the Covid-19 pandemic and lockdowns. Food has been a major contributor to the inflation experienced by the poor and issues like the tariffs on imported chicken, further VAT zero-rating of food items, and the competitiveness of the fresh produce market have been discussed at length in the popular press. South Africa is also in the midst of a nutrition transition, characterized by a dietary shift from traditional, nutrient-dense foods to processed, energy-dense foods. This transition has increased the prevalence of overweight and obesity, disproportionately affecting women and those transitioning out of poverty. Yet, little is known about how changes in prices across different food categories - healthy versus unhealthy foods - affect dietary decisions of low-income individuals. A rise in the price of nutritious foods, generally sees a substitution to diets with more affordable high-energy content, but low-nutrient value. This is a contributing factor to increased prevalence of obesity and resulting health problems. This paper sets out to describe the changes in the prices of healthy and less healthy foods following the analysis of Hoenink et al. (2024) for the U.K.. We use monthly CPI data for 152 food items calculating the price per unit of energy and categorising food items according to the SA Food-based Dietary Guidelines into "more healthy" and "less healthy". Preliminary analysis shows that the prices of more healthy foods increased more rapidly than the prices of the less healthy food items.

Parallel Session K1: Special Session: International Trade and Development

Trade Liberalisation, Household Welfare and Earnings Inequality in South Africa

Lawrence Edwards, Refilwe Lepelle

The impacts of trade liberalisation do not fall equally on individuals and households. The focus of this paper is the effects of trade liberalisation on the economic decision-making body, the household. While tariff liberalisation is expected to raise aggregate welfare (the gains from trade), the distributional effects of lower prices from tariff reductions depend on household consumption patterns and income sources. In this paper, we adopt two approaches to study the effect of trade liberalisation on household welfare over the period 1995 to 2011. Firstly, we draw on 1995 household income-expenditure survey data to simulate the first-order distributional effects on real household incomes through the income and expenditure channels from reductions in import tariffs. Secondly, to assess actual outcomes with predicted outcomes through the income channel, we follow the local labour market literature and use population census data to estimate the causal effect on regional earnings and inequality following tariff liberalisation from 1996 to 2011. We find that households most exposed to reductions in earnings from tariff liberalisation are those in the middle- to upper-income deciles, in which employment in manufacturing is concentrated. Tariff reductions are found to have reduced aggregate earnings from employment in tradable sectors, as well as to have contributed to rising earnings inequality across most regions in South Africa. Poor households, however, stood to gain more from tariff liberalisation through the expenditure channel, as greater shares of their expenditure are allocated to goods, particularly food products. The household welfare simulations indicate that the net welfare effects from tariff liberalisation, after accounting for income and expenditure effects, are likely to have been pro-poor, with consumption gains more than offsetting the income losses for most households.

Parallel Session K1: Special Session: International Trade and Development

The Empirical Investigation of the Effects of Trade Openness on Poverty in South Africa and Lesotho

Zimvo Mtolo

While the very first goal of the Sustainable Development Goals (SDGs) is to eliminate poverty, South Africa and Lesotho face persistent levels of poverty. Both countries have implemented various trade openness measures that, whether directly or indirectly aim to reduce poverty. The study examined the effect of trade openness on poverty in South Africa and Lesotho in 1980-2019 using the autoregressive distributed lag testing approach and answer the question 'have the Government's efforts to promote trade openness lead to a corresponding decrease in poverty?'

The study used household consumption expenditure as a proxy for poverty. The study employed three measures of trade openness, which were the sum of trade to GDP, the ratio of exports to GDP, and imports to GDP ratio. The study included a dummy variable for Lesotho to capture the effect of the structural break that occurred from 1990 from retrenchments in the South African mining industry.

The study expects that an increase in trade openness will lead to a decrease in poverty. For South Africa, in the long run, trade openness (trade/GDP and imports/GDP) has a negative effect on poverty. In the short run, trade openness (trade/GDP and exports/GDP) is insignificant while imports/GDP have a negative effect on poverty. For Lesotho, in the long run, trade openness (trade/GDP) is insignificant to poverty while exports/GDP and imports/GDP have a positive effect on poverty. In the short run, trade openness (trade/GDP) has a positive effect on poverty, exports/GDP have a negative effect on poverty while imports/GDP are insignificant. The dummy variable is negative, confirming the evidence of a structural break.

The study recommends a critical review of policies to assess unintended consequences of trade openness and recommends the mechanism of distributing gains from trade be reviewed to ensure that gains from trade openness are invested towards poverty reduction.

Parallel Session K1: Special Session: International Trade and Development

The Consumer Price Effects of Specific Trade Policy Restrictions in South Africa

*Lawrence Edwards, Zaakirah Ismail, **Godfrey Kamutando**, Simbarashe Mambara, Matthew Stern, Fouche Venter*

This paper examines the implications for consumer prices of three consumer goods – frozen chicken, frozen chips and pasta – that have experienced rising protection from 2010 in the form of general, anti-dumping and safeguard duties. Firstly, we use monthly trade data from 2010 to 2021 to estimate how the range of import barriers (normal duties, anti-dumping duties and safeguards) affect the volume and free-on-board price of imports of each product. Secondly, we estimate the pass-through of the various trade measures to consumer prices at the retail level using monthly product price data at the retail outlet level from 2010 to 2021. We find that tariffs and other import duties have a powerful impact on import volumes and, in the case of frozen chicken, on consumer prices. Foreign suppliers do not absorb any of the tariff increase by lowering their prices and pass the full tariff increase onto importers. However, the aggregate impact on landed import prices and volumes is reduced by the diversion of imports towards preferential trade partners, most notably, the European Union. Using disaggregated product price data at the outlet level, we estimate that tariff increases have contributed to rising domestic consumer prices, but the pass-through depends on how the different tariff measures reinforce each other in restricting imports from preferential trade partners. The reduction in welfare of rising trade protection on the three products are calculated to be equivalent to 2.1% of food expenditure for households in the lowest consumption decile and 1.1% for households in the top consumption decile. Our results highlight the influence of preferential trade areas in mediating the impact of tariffs on prices and illustrate how aggregate price and welfare impacts are influenced by the sequencing, targeting and ultimate combination of trade measures.

Parallel Session K2: The Energy Transition and Labour Market Outcomes

Investigating the Transferability of Skills from Fossil-Intensive (Coal) Occupations to Alternative (Green) Occupations

Vanray Nel, Jen Snowball, Mike Rogan

As a result of the green transition, workers in fossil-intensive industries such as coal are most vulnerable to job loss, therefore, it is important to study the skills - measured as the performance of work-based tasks - which these workers possess that could be transferred to alternative (green) occupations. This research investigates the transferability of skills from fossil-intensive industries (e.g. coal) to alternative green (renewable energy) industries using a task-based (practical) approach. The research method was based on the O'NET Green Task Development index, which includes green tasks performed by occupations in the United States, however, using a novel approach and AI generative tools, the task-based approach of O'NET was extended to the South African context. Subsequently, a "Greenness Score" was calculated for each occupation in South Africa using primary data from the Labour Market Dynamic Survey (LMDS) of South Africa. Due to the practical nature of O'NET's structure, along with the Greenness Scores for South Africa, the task-based approach of this research focuses primarily on practical (often lower skilled) occupation groups, whereas the broader literature often focuses on service (higher skilled) occupation groups. Further, human capital theory also states that higher skilled workers will be more resilient and adaptive to labour market changes. Preliminary results suggest that some workers that the broader literature classifies as vulnerable, do perform tasks associated with alternative green occupations. In line with the broader literature, the results of this study suggest that the lowest skilled workers are most vulnerable to the green transition.

Local Job Multipliers from Mining in South Africa's Intermediate Cities

Antonie Pool, Lochner Marais

The mining industry is under pressure globally to show local benefits. But such benefits are not automatic. Studies show only moderate local effects of mining investment. This study used the Spatial Economic Activity Data: South Africa (SEAD-SA) database to investigate local job multipliers from mining. Using the full-time employment (FTE) data for nine years (2014 to 2022) in 21 industries in 13 of South Africa's intermediate cities, we looked at how employment in mining affects demand, and hence employment, in other sectors. Jobs in mining had a small but significant effect on accommodation and food services and on jobs linked to household employer activities. Contrary to some international findings, jobs in mining had no effect on jobs in the wholesale and retail trade sector. In line with the international literature, jobs in mining had no effect on jobs in the manufacturing sector, suggesting that there are not many backward and forward linkages between those two sectors. Jobs in mining actually crowded out jobs in agriculture, but why this happened is not clear. Our paper contributes to what Fleming and Measham (2014) identify as the "scarce economic literature about local impacts of energy extraction booms".

Parallel Session K2: The Energy Transition and Labour Market Outcomes

Jobs and Complexity: Potential Avenues for Driving the Growth of the Renewable Energy Industry in South Africa

Tsungai Kupeta

The global transition to renewable energy (RE) presents a transformative opportunity for developing economies, offering pathways for industrialisation, job creation, and socio-economic upliftment. South Africa, with its significant RE potential, is uniquely positioned to leverage its existing industrial capabilities to diversify into RE technologies and products. This paper explores product-level industrial diversification opportunities within South Africa's RE sector, aiming to identify pathways that are both complexity-enhancing and labor-absorptive.

Using the frameworks of economic complexity and industrial relatedness, the study addresses two key research questions: (1) What is the relative size and composition of South Africa's RE space? (2) Which RE products offer the highest potential for labor-intensive industrialization? The paper hypothesises that diversification into RE products is path-dependent, shaped by the alignment of existing capabilities with the requirements of new RE technologies. South Africa's potential to transition into these new industries is anticipated to vary, with significant implications for employment outcomes.

The research contributes to the growing body of literature on green industrialisation by integrating economic complexity, labor absorptive capacity, and the evolving dynamics of RE technologies. Findings highlight specific RE products that align with South Africa's existing industrial structure, offering targeted strategies for policy intervention. This study provides actionable insights for policymakers, emphasising the importance of aligning RE diversification strategies with broader socio-economic goals, including job creation and structural transformation.

By mapping the intersection of sustainability and industrial policy, the paper underscores the critical role of RE in addressing South Africa's pressing economic challenges, including high unemployment and inequality, while positioning the country on a trajectory of inclusive and sustainable growth.

Parallel Session K3: Subjective Wellbeing

Can Financial Capital Buy Happiness in South Africa?

*Darma Mahadea, **Ralitza Dobрева**, Fathima Danka*

Happiness is a universally sought goal by individuals and policymakers, yet achieving a flourishing and fulfilling life remains elusive for many. While a large number of happiness studies have focused on the relationship between financial wellbeing and happiness in developed countries, limited research has explored this relationship in developing economies, particularly in South Africa. This study fills this gap by investigating the relationship between financial capital, conceptualised as a latent variable, and happiness in South Africa.

Data were sourced from the second wave of the National Income Dynamics Study (NIDS), which measures happiness through self-reported life satisfaction on a 10-point scale and offers a range of financial wellbeing indicators, at both the individual and household level, including a measure of wealth. Principal Component Analysis (PCA) was employed to construct a financial capital index, integrating components such as household income and expenditure per capita, wealth, borrowing, wealth, and the ownership of durable assets. The PCA results revealed that these elements are strongly correlated and jointly capture the concept of financial capital.

To examine the link between financial capital and happiness, a generalised ordered probit analysis was conducted. This method accommodates the ordinal nature of life satisfaction and allows for varying effects of financial capital across different levels of happiness. The findings highlight a positive and strengthening association between financial capital and life satisfaction for rising levels of financial capital. The association is uniform across different juxtapositions of lower and higher happiness levels. The results appear to contradict the Easterlin paradox and emphasize the importance of economic resources in shaping well-being in a developing economy facing the “triple threat” of unemployment, poverty, and inequality.

Parallel Session K3: Subjective Wellbeing

The Nature, Magnitude and Determinants of Socio-Economic Inequality in Family Functioning in South African Households Living in Gauteng Province

Frederik Booysen

The family is a central but undervalued and understudied social determinant of health and to date few or any studies have employed methods from the toolbox of health inequality analysis to explore socio-economic inequality in family functioning. This paper aims to document the extent, nature and determinants of socio-economic inequality and disparity in family functioning in South African households.

The paper employs data from the 2023 provincially representative Gauteng Quality of Life Survey that collected data on family functioning, using the 3-item Brief Assessment Family Functioning Scale. First, we construct estimates of the concentration index and employs a Wagstaff decomposition to explore the factors contributing to inequality. Secondly, we supplement this analysis by an Oaxaca-Blinder decomposition to determine the role of key socio-demographic and socio-economic factors in explaining the socio-economic disparity in family functioning. Socio-economic inequality in family functioning is significantly pro-rich. The single most important factor contributing to the pro-rich socio-economic inequality and disparity in family functioning is greater satisfaction with family time. Other explanatory factors include domestic violence, access to social grants, household composition, remittances, and depression.

To address socio-economic inequality in family functioning and enhance the family's role in achieving global development goals, it is necessary to empower poorer families in improving the quality of family time as well as addressing poorer health in outcomes in poorer families.

Parallel Session K3: Subjective Wellbeing

Public Service Delivery and Life Satisfaction: A Trend Analysis and Decomposition Across Political Generations

Uma Kollamparambil, Frikkie Booysen, Adeola Oyenubi, Bayanda Mdlalose

South African studies exploring the relationship between public service delivery and life satisfaction, are dated and based on small sample surveys (Meyer & Dunga 2014; Westaway & Seager 2003). Recent, large-scale and longitudinal population-based studies exploring the relationship between public service delivery and life satisfaction is not readily available in the South African or global context.

Using Quality of life surveys (rounds 2-7), covering the period 2011-2024, the study found that satisfaction with service delivery as well as life satisfaction have dropped in Gauteng province in recent years. In particular, services related to security, municipal billing, costs of services, energy and streetlights recorded the highest decline during the period. Others like waste collection and sewerage also recorded moderate but significant decline. The study also found significant difference across political generations (those born before and after 1994), with life satisfaction of pre-democracy generation (mean 3.59) to be statistically higher than the post-democracy generation (mean 3.47) at 1% significance level.

Based on the above preliminary findings, the on-going study will explore the role of service delivery satisfaction in driving life satisfaction using the pseudo-panel regression approach to overcome the limitation of absence of longitudinal data and enable a fixed effects regression. Further, the differences in the role of service delivery satisfaction in explaining disparities in life satisfaction across political generations is studied using the Oaxaca-Blinder decomposition for the second and seventh rounds of QoLS. Two time-points are chosen for decomposition to obtain an indication of possible shifts in perception between political generations over time.

This study will facilitate evidence-based policy making by identifying the trends, determinants and correlates of life satisfaction which can provide important insights into improving the wellbeing of the population through policy interventions through service delivery.

Parallel Session K4: Agriculture and Development

The Economic Feasibility and the Socioeconomic Impact of Using Sugarcane as a Feedstock for Sustainable Aviation Fuels (SAF) Production: Empirical Evidence from South Africa

Lungani Mvelase, Stuart Ferrer

The growing global interest in electric motor vehicles makes the long-term biofuel demand uncertain. The regulations by CORSIA require nations to use sustainable aviation fuels (SAF) instead of conventional jet fuels to minimize the greenhouse gases (GHGs) emissions of their aviation sector, which presents a promising long-term demand for the South African biofuel industry. The objective of this paper was therefore to assess the economic feasibility and the socio-economic impact of SAF produced using sugarcane in South Africa, under alcohol to Jet (AtJ) fuel pathway. Two possible scenarios were considered, namely, the brownfield and the greenfield project scenario. To assess the economic feasibility, the Cost-Benefit analysis (CBA) techniques including, the Net Present Value (NPV), the Internal Rate of Return (IRR) and the BCR were used, while the input-output multiplier analysis was used to assess the socioeconomic impact of SAF. The CBA results showed that the production of SAFs is economically viable at a price of at least R60.20/litre for the brownfield project and a price of at least R69.85/litre for the greenfield project. The sensitivity analysis results show that the production of SAF is more sensitive to selling price than it is to changes in the discount rate. Using the input-output multiplier analysis the production of SAF under both greenfield and the brownfield project scenario was anticipated to have positive socioeconomic impacts namely, an increase in GDP, employment growth, gross capital formation, improvement in household welfare, and positive contribution to the balance of payment (BOP). The impacts were magnified for the brownfield project relative to the greenfield project scenario, the study therefore, recommends the production of SAF using already existing facilities at least in the short run, until the industry raises enough profits for the construction of new AtJ fuel refineries if necessary.

Parallel Session K4: Agriculture and Development

Gender Disparities in Water Access and Its Effect on Welfare Outcomes Among Smallholder Irrigators in the Eastern Cape and KwaZulu-Natal, South Africa

Sandile Phakathi

Reducing gender inequality and increasing agricultural productivity within the smallholder sector is crucial for achieving Sustainable Development Goals 2 and 5. This study examines gender disparities in access to irrigation water and its effects on welfare outcomes, using data from 163 irrigators across three smallholder irrigation schemes in the Eastern and KwaZulu-Natal, South Africa. Using the Blinder-Oaxaca (BO) decomposition method and the instrumental variable (IV) regression approach, the analysis reveals significant inequalities in water access, with male farmers accessing irrigation water more frequently than female farmers. The findings show a positive and significant relationship between water access and welfare indicators, such as asset ownership and per capita income, with men generally achieving higher welfare outcomes. The study findings highlight that women would experience better welfare gains if given equal access to water. The BO decomposition highlights that 58% of the observed gender disparity in water access is due to differences in observable characteristics, while 26% stems from unobserved characteristics. To reduce the gender gap and enhance welfare in irrigation schemes, the study recommends policies targeting observable barriers, such as improving access to education, promoting women's participation in irrigation management activities like canal cleaning, registration in water user associations, and improving women's land security. Such measures are important for empowering women in agriculture and achieving inclusive rural development.

Parallel Session K4: Agriculture and Development

Minimum Wages, De Facto Private Standards and Trade Diversion in Horticulture

Marlies Piek, Dieter von Fintel

Literature shows that the effects of minimum wages on employment and firm outcomes depend on the extent of enforcement and compliance with the legislation. However, most research focuses on the role that local conditions play on compliance. This paper tests whether enforcement by external international (market) stakeholders through private standards influences the impacts of minimum wages on various economic outcomes. We analyse the effects of a large agricultural minimum wage increase on export stance, export destination, employment, and wages, considering varying levels of enforcement by private standards organisations. We find that some producers bound by external standards divert trade when the minimum wage increases but find varied impacts on wages and employment. Farmers that exported to the European Union (EU) where private standards organisations mandate minimum wage compliance diverted trade, but only if the EU was not their main market. In contrast, farmers that primarily exported to the EU did not change their trade patterns. Farmers who shifted trade away from the EU increased wages but kept employment growth stable. Farmers that exported mainly to the EU raised wages more aggressively than other firms, but experienced a temporary decrease in employment growth. By the end of the period of analysis, trade diversion and employment effects dissipated, indicating these were temporary adjustments to the new minimum wage. The main implication of this research is that external enforcement of minimum wages matters in determining their impacts. Policymakers in developing countries should therefore consider potential employment adjustments in response to minimum wage increases in environments with high enforcement, such as through private standards in the agricultural sector.

Parallel Session K4: Climate Risk and Financial Stability: Evidence and Policy Approaches from South Africa

Climate Risk Indicators: A Contribution Towards South Africa's Prudential Authority Approach to Climate Risk Management

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The financial sector has a critical role to play in responding to climate change, and the financial sector, under the guidance and regulation of central banks, are essential to this response. The body of knowledge among central banks on climate risk has grown significantly, with various pathways allowing any new central bank entrants the chance to draw on past experiences - lessons learned, limitations, and benefits and leapfrogging when developing their regulatory contributions. In order to move the South African financial system towards a financial resilience, this paper identifies physical and transition risks as well as social consequences that need to be considered in response to the risks in the financial sector created by the climate crisis. This paper expands on the literature around physical and transition risk, as well as includes a deep analysis of the social consequences that have, up until this point, been largely left out of the financial sector response to climate change. This paper guides how central banks and the financial system should be monitoring the three categories of climate-based risks in order to ensure climate responses and just transitions are not only done in a way that creates financial resilience but also considers justice.

Exploring the Asymmetric Impact of Climate-Related Risk on Public Debt: An Econometric Analysis from South Africa

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South Africa has constantly experienced numerous climate-related events, e.g. drought between 2015 and 2017 and heavy floods in 2022, which resulted in 13 500 homes being destroyed and loss of 435 lives (Government of South Africa, 2022) and reports from different government departments indicate that in South Africa climate finances are facilitated through market-rate debt instruments (SAPCC, 2023; Treasury, 2023). This indicates that the impact of climate-related risk on public debt do exist in South Africa, however the economic value of such impact is largely unknown due to a lack of studies assessing this matter in South Africa. Therefore, this study critical examines the asymmetric impact of climate-related risk (heat waves, storms and floods) on public debt in South Africa. Studies investigating this issue have been conducted in advanced economies. Using secondary data and quantitative research approach, the study further employed the non- linear Autoregressive Distributed Lag (non- linear ARDL) estimation technique using the data from 1960-2020. The empirical results revealed that both positive and negative shocks from climate events increase public borrowings in South Africa. The study found that an increase in average rainfall is followed by a 2% increase in public debt, whereas a decline in rainfall results in a 1% increase. Providing inclusive development policies and programmes can mitigate the impact of climatic-related risk on public debt in South Africa.

Parallel Session K4: Climate Risk and Financial Stability: Evidence and Policy Approaches from South Africa

Assessing the Effectiveness of Macroprudential Policies in Mitigating Climate Risks: The Case of South Africa

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This ongoing study evaluates South Africa's macroprudential policy framework in mitigating climate risks, aligning with the SA-TIED initiative on climate change and macroeconomic policy. Given South Africa's vulnerability to climate change and the critical role of its financial system in economic resilience, the study employs a New Keynesian Dynamic Stochastic General Equilibrium (NK-DSGE) model. Climate risks are modelled as productivity shocks, enabling an assessment of their impact under baseline and alternative macroprudential regimes. This approach facilitates a comparative analysis of policy effectiveness in mitigating climate risks and enhancing financial stability. By examining the current regulatory framework, the research provides actionable insights for improving resilience to climate-related disruptions, thereby reducing the likelihood of economic instabilities akin to the Global Financial Crisis. The findings aim to support policy improvements that strengthen South Africa's financial system, advance sustainable development goals, and contribute to global discussions on climate resilience.
