

Innovation and Technology Centre

ITC 2024-2025 Newsletter

Table of Contents

1. SUMMARY OF THE YEAR.....	3
2. PEOPLE OF ITC.....	5
3. MODELING LAB INSIGHTS	8
4. ANNUAL CONFERENCE.....	11
5. WTO CHAIRS	16
6. RESEARCH PROGRAMS	19
6A. Project Abstracts:	21
7. KNOWLEDGE SHARING AND CAPACITY BUILDING	32
8. MEETINGS & ACTIVITIES	38
8.A Stakeholder Engagements	38
8.B Academic & Research Collaborations.....	41
8.C Policy Dialogues & Conferences	43
9. CLOSING NOTE.....	48
10. APPENDIX: Conference Agenda and Abstracts	49

1. SUMMARY OF THE YEAR

The academic year **2024–25** marked an extraordinary period of achievement and outreach for the **Innovation and Technology Centre (ITC) at the Lahore School of Economics**.

Building on its mission of bridging research and policy, ITC engaged across multiple fronts — from producing rigorous macroeconomic forecasts to hosting international conferences, leading policy dialogues, and expanding collaborations at home and abroad.

At the heart of ITC’s work, the **Modeling Lab** produced three flagship reports — the *State of the Pakistan Economy FY24 Q4, FY25 Q1*, and *Budget in Brief FY25–26* — which provided independent forecasts and policy insights on growth, inflation, fiscal sustainability, and external stability. These outputs, authored by **Dr. Moazam Mahmood, Dr. Azam Amjad Chaudhry**, and the Modeling Lab team (**Seemab Sajid, Amna Noor Fatima, Sara Qasim, and Anoosha Liaqat**), became important reference points for policymakers during a year of economic uncertainty.

Through the **WTO Chairs Programme**, ITC deepened its global footprint. Major highlights included a roundtable on *Trade Policy, Climate Change, and Sustainable Development*, a high-level policy dialogue on export diversification, and the presentation of Pakistan’s Trade Model at the **World Trade Organization in Geneva**. These engagements not only advanced debate on Pakistan’s trade strategy but also opened avenues for regional collaboration and faculty exchanges.

ITC faculty also played a central role in national policymaking platforms. **Dr. Azam Chaudhry** delivered influential lectures at the **National Management Course**, the **Civil Services Academy**, and the **National School of Public Policy**, equipping Pakistan’s top policymakers with insights on balance of payments–constrained growth, evidence-based policy design, and structural reforms.

The year was also defined by **major conferences and academic collaborations**. The **18th Annual Conference on the Management of the Pakistan Economy** gathered leading economists and international experts to debate Pakistan’s growth and trade imperatives. The **6th International Conference on Applied Development Economics (ADE)** showcased frontier research on labor, gender, trade, and climate. Meanwhile, the **AEI–ASEM Summer School and Symposium 2025 in Kuala Lumpur** provided ITC’s Modeling Lab with a platform to present its macroeconomic modeling framework to an international audience, paving the way for new partnerships with the Asia-Europe Institute.

Beyond conferences, ITC faculty engaged in **policy-relevant collaborations** with the **Sialkot Chamber of Commerce**, the **Punjab Green Development Program**, and international partners such as **GIZ** and **Unilever Pakistan**. These meetings and activities underscored ITC's role in linking academic research with private sector innovation, SME development, sustainability initiatives, and labor market reforms.

In summary, 2024–25 was a year of **expanding influence, impactful research, and strengthened collaborations**, with ITC faculty — **Dr. Azam Amjad Chaudhry, Dr. Moazam Mahmood, Dr. Theresa Thompson Chaudhry, Dr. Rabia Arif , Ms Gul Andaman, Ms Seemab Sajid, Ms Amna Noor Fatima, Ms Sara Qasim and Ms Anoosha Liaqat**— at the forefront, positioning the Centre as both a national policy partner and a global thought leader in applied economic research.

2. PEOPLE OF ITC

Dr. Azam Ajmad Chaudhry: (image saved in the folder ITC members)

Co-Director of the Innovation and Technology Centre, Dr. Azam Chaudhry is Professor of Economics, Dean of the Faculty of Economics, and the Pro-Rector of the Lahore School of Economics.

Dr. Theresa Thompson Chaudhry: (image)

Co-Director of the Innovation and Technology Centre, Dr. Theresa Chaudhry is Professor of Economics, and a fellow of the Centre for Research in Economics and Business (CREB) at the Lahore School of Economics. She is also a research affiliate with the International Growth Centre (IGC) in the UK.

Dr. Moazam Mahmood: (image)

Dr. Moazam Mahmood is Professor of Economics at the Lahore School of Economics, and a Visiting Professor at the Capital University of Economics and Business, Beijing, China. Dr. Mahmood heads the Macroeconomic Modelling Lab at the ITC, and was formerly Director of Research at the International Labour Organisation. He was responsible for producing the latter's annual flagships reports on "World Employment and Social Outlook" and "Global Employment Trends".

Dr. Rabia Arif: (image)

Rabia Arif is an Associate Professor of Economics at the Lahore School and a Research fellow at the ITC. She completed her PhD at the Lahore School of Economics in 2023. and has been affiliated with esteemed institutions notably the University of Oxford, the Paris School of Economics, and Warwick. Her current research focuses on migration, trade, family studies, women's empowerment, and innovation, driven by a passion for inquiry and societal betterment.

Dr. Gul Andaman: (image)

Gul Andaman is a Teaching and Research Associate at the Lahore School of Economics. She holds a Master of Science (MSc) degree from the University of Warwick, UK, and a Doctor of Philosophy (PhD) degree from UPM, Malaysia. Her research interests encompass international trade, foreign direct investment (FDI), domestic investment, and product space analysis.

Ms. Seemab Sajid(image)

Seemab Sajid is a Visiting Research Associate with the ITC Modeling Lab at the Lahore School of Economics. She is currently working on a regional and country general equilibrium macro model and managing the Modeling team at the Lahore School Modeling Lab. Ms. Sajid is part of the production team of the State of the Pakistan Economy reports published every quarter, and are disseminated to governments and multilateral organizations, serving as a basis for analytical and policy debate.

Ms. Amna Noor Fatima(image)

Amna Noor Fatima serves as a Research and Data Analyst at the ITC Modeling Lab, Lahore School of Economics. She is currently assisting in the development of a regional and country general equilibrium macroeconomic model and is responsible for data collection and analysis for the quarterly State of the Pakistan Economy reports, distributed to government entities and multilateral organizations. Alongside this, she is currently completing her M.Phil. dissertation with the Department of Economics at the Lahore School, which looks at First and Second welfare theorems from Arrow Debreu's General Equilibrium, to analyze poverty in Pakistan

Ms. Sara Qasim (image)

Sara Qasim is a Visiting Research Fellow and Data Analyst at the Innovation and Technology Centre (ITC), Lahore School of Economics. She works under the supervision of Dr. Moazam Mahmood and Dr. Azam Chaudhry, contributing to the ITC Modeling Lab. Her primary focus is the development of a trade model for Pakistan, complemented by her work on growth and inflation forecasts for Pakistan, the EU, US, and UK. She also oversees data collection and coordinates research teams across different cities.

Ms. Anoosha Liaqat (image)

Anoosha Liaqat is a Research Associate and Data Analyst at the ITC Modeling Lab, Lahore School of Economics. She is responsible for running the Lab's European Union (EU) macroeconomic model, which provides forecasts and policy simulations for employment and growth across the EU-27. Alongside this, she contributes to the Lab's regional and country general equilibrium macroeconomic models and supports the production of the quarterly State of the Pakistan Economy reports, which are shared with government institutions and multilateral organizations to inform policy debate.

Ms. Liaqat has completed her Master's in Quantitative Economics at the Lahore School of Economics. Her academic research focused on the asymmetric impact of trade on carbon emissions across Asia, employing advanced econometric methods to explore the intersection of trade and environmental sustainability.

Ms. Syeda Khadijah Batool (image)

Syeda Khadijah Batool is a Research Associate and Data Analyst at the ITC Modeling Lab, Lahore School of Economics. She supports the Lab's ongoing research by developing and maintaining datasets for a range of macroeconomic models, including country-level general equilibrium frameworks. Her work contributes to the Lab's broader efforts to generate policy-relevant insights through data-driven economic analysis. She brings a strong interest in empirical economics and aims to expand her expertise in quantitative modeling and policy analysis as she grows within the Lab's research team.

3. MODELING LAB INSIGHTS

The Innovation & Technology Centre’s Modeling Lab continues to advance applied economic research through its three macroeconomic models: the Pakistan Macro Model, the Pakistan Trade Model, and the EU General Equilibrium Model. These models provide critical evidence for national policy debates, informing decisions on growth, inflation, trade, fiscal sustainability, and welfare.

In 2024–25, the Modeling Lab strengthened its role as a trusted source of rigorous economic analysis. Its reports were cited in policy discussions at national and academic forums, offering independent forecasts and structural insights at a time of deep economic uncertainty. Together, these outputs not only mapped Pakistan’s near-term growth trajectory but also illuminated the recurring structural challenges — from external imbalances to fiscal rigidities — that continue to shape the country’s development path.

During the year, the Lab produced three major reports on the State of the Pakistan Economy, each authored by Dr. Moazam Mahmood, Dr. Azam Amjad Chaudhry, and the Modeling Lab team — Seemab Sajid, Amna Noor Fatima, Sara Qasim and Anoosha Liaquat.

State of the Pakistan Economy – FY2023–24 (Q4)

Authored by Dr. Moazam Mahmood, Dr. Azam Amjad Chaudhry, Seemab Sajid, Amna Noor Fatima, and Sara Qasim.

The Q4 report closed out FY2023–24 with an estimated GDP growth of 1.7%, reflecting persistent structural weaknesses across large-scale manufacturing and agriculture. Inflation, though lower than its FY2022–23 peak, remained high at around 18.9%, driven largely by exchange rate depreciation and commodity prices. The report emphasized that Pakistan’s growth remains import-constrained: higher growth above 5% quickly widens the current account deficit, leading to external crises and repeated recourse to IMF support. It called for urgent reforms in exports, technology adoption, and productivity upgrading to break the cycle of “stop-go” growth and stabilize reserves.

State of the Pakistan Economy – FY2024–25 (Q1)

State of the Pakistan Economy, Growth And Inflation, pending the Budget **Financial Year 2024-2025**

Dr. Moazam Mahmood

Professor, Faculty of Economics, Lahore School of Economics

Dr. Azam Amjad Chaudhry

Professor & Dean, Faculty of Economics, Lahore School of Economics

Seemab Sajid

Analyst, Modeling Lab, Lahore School of Economics

Amna Noor Fatima

Data Analyst, Modeling Lab, Lahore School of Economics

Sara Qasim

Research Assistant, Modeling Lab, Lahore School of Economics

Anoosha Liaquat

Teaching and Research Assistant, Modeling Lab, Lahore School of Economics

Authored by Dr. Moazam Mahmood, Dr. Azam Amjad Chaudhry, Seemab Sajid, Amna Noor Fatima, and Sara Qasim.

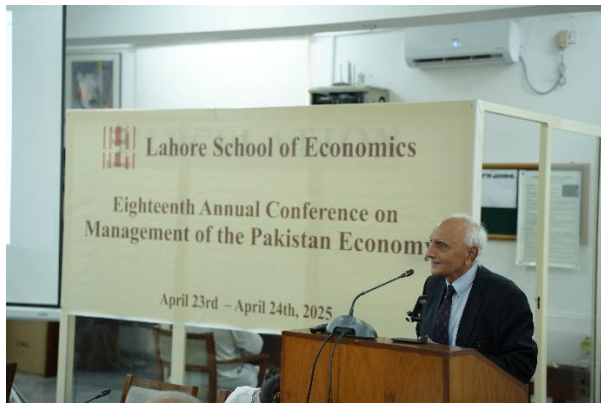
The Q1 report projected a modest recovery in FY2024–25, with GDP growth expected at **3.5%**, up from 1.7% the previous year. This outlook rested on weak recoveries in both large-scale manufacturing and agriculture, while services continued to grow below trend. Inflation eased significantly to **12.8%**, reflecting the stabilization of the exchange rate, though fiscal deficits and commodity prices remained key risks. On the fiscal side, the federal budget rose sharply to **PKR 18.9 trillion**, driven by ambitious revenue targets and heavy reliance on borrowing. The report warned against profligate spending and emphasized the need to cut borrowing, rationalize expenditures, and prioritize welfare spending — particularly targeted food support — to mitigate rising poverty, which had doubled to 18% by FY2022–23.

Budget in Brief – FY2025–26 (Q4)

Authored by Dr. Moazam Mahmood, Dr. Azam Amjad Chaudhry, Seemab Sajid, Amna Noor Fatima, Sara Qasim and Anoosha Liaquat.

The final report of the year analyzed the Federal Budget 2025–26, which set expenditure at PKR 19.3 trillion against revenues of PKR 17.6 trillion, leaving a projected fiscal deficit of PKR 6.5 trillion (–3.9% of GDP). Debt servicing remained the single largest expenditure item, accounting for over 55% of total spending, crowding out development and welfare allocations. The report highlighted the structural imbalance between federal revenue mobilization and expenditure obligations, particularly transfers to provinces under the NFC Award. While the budget allocated significant resources to defense, subsidies, and grants, the Modeling Lab cautioned that reliance on borrowing to finance nearly half of total expenditure is unsustainable. The analysis underscored the urgency of fiscal consolidation paired with growth-enhancing reforms to escape the low-growth, high-debt trap.

4. ANNUAL CONFERENCE



Theme: The Imperatives of Growth and Trade

23–24 April 2025 | Lahore School of Economics

The Lahore School of Economics hosted its Eighteenth Annual Conference on the *Management of the Pakistan Economy*, focusing on **The Imperatives of Growth and Trade**. The two-day event brought together leading academics, policymakers, and practitioners to deliberate on macroeconomic stabilization, trade, sectoral strategies, and institutional reforms needed to chart a sustainable growth path for Pakistan.

Macroeconomic Stabilization and Growth Constraints

The opening session, chaired by **Dr. Ishrat Hussain**, framed the debate around Pakistan's fragile recovery.

- *State of the Pakistan Economy: Modeling Growth, Trade and Macro Stabilization* (**Moazam Mahmood, Azam Chaudhry, Seemab Sajid, Amna Noor Fatima, Sara Qasim, Anoosha Liaqat**) projected GDP growth at 2.2% for FY2025, showing how import constraints on investment goods cap growth and highlighting the need to reallocate imports away from consumption.
- *Breaking Out of Boom-Bust Cycles* (**Rashid Amjad**) traced Pakistan's history of recurrent crises, warning that without higher private investment, IMF programs risk trapping the economy in a low-growth equilibrium.
- *Balance of Payments–Constrained Growth* (**Azam Chaudhry, Gul Andaman, Aymen Junaid**) estimated a growth ceiling of 3.7%, urging targeted import substitution and remittance-led support to raise sustainability.
- *Monetary Policy under Fiscal Uncertainty* (**Naved Hamid, Murtaza Syed**) showed how low productivity forces the State Bank to cap growth at 4% to preserve external stability, underscoring the need for productivity-driven reforms.

- *Southeast Asia's Lessons for Industrial Policy* (**Rajah Rasiah**) warned of premature de-industrialization and urged Pakistan to leapfrog into higher value-added sectors such as aerospace and advanced manufacturing.

Together, these papers painted a sobering picture: Pakistan's growth is structurally capped unless investment, productivity, and industrial upgrading break existing constraints.

Trade, Climate, and Competitiveness

Session II turned to Pakistan's trade vulnerabilities in a shifting global environment.

- *Trade Restrictions and Export Losses* (**Azam Chaudhry, Gul Andaman**) estimated U.S. tariffs and the EU's Carbon Border Adjustment Mechanism could cost Pakistan up to USD 1.4 billion in lost exports, calling for urgent transition to renewable energy and compliance with carbon standards.
- *Mitigating Transport-Caused Air Pollution* (**Theresa Chaudhry, Mehreen Khan, Natasha Moeen**) identified institutional and regulatory hurdles that prevent Punjab from tackling smog, stressing investments in public transport and fuel reforms.
- *Global Value Chains and Growth* (**Rabia Arif, Azam Chaudhry**) showed that Pakistan lags behind India, Bangladesh, and China in value-chain integration, urging backward linkages in chemicals and metals to drive competitiveness.
- *Certification and Export Performance* (**Waqar Wadho, Azam Chaudhry**) found firms with international certifications are 44% more likely to export and grow exports 68% faster, showing certification as a lever for diversification and innovation.

This cluster emphasized that Pakistan's trade strategy must shift toward **green compliance, GVC integration, and firm-level upgrading** if it is to compete globally.

Institutions, Savings, and Governance

Day 2 focused on institutional reforms and long-term sustainability.

- *Inflation Persistence in Pakistan* (**Kaleem Hyder, Sabina Jafri, Omar Saqib**) showed how entrenched inflation expectations undermine policy, strengthening the case for credible inflation-targeting frameworks.
- *The Missing Macroeconomics of Urbanization* (**Matthew McCartney**) argued that Pakistan's unusually slow urbanization constrains productivity and innovation, urging policymakers to harness cities for industrial growth.
- *Revamping the Export Development Fund* (**Mujtaba Piracha, Usman Khan**) critiqued EDF's governance failures and proposed reforms to turn it into an engine of export-led growth.
- *Revisiting the Savings–Investment Equation* (**Shamyla Chaudhry, Moazam Mahmood, Muzzna Maqsood**) re-formulated macro accounting by including capital outflows, restoring theoretical consistency and highlighting the hidden drain on domestic investment.

Together, these contributions highlighted how **credible institutions, urban transformation, and fiscal transparency** are essential complements to trade and industrial reform.

Sectoral Strategies for Sustainable Growth

The final research sessions brought sectoral depth.

- *Financial Inclusion and Tax Mobilization* (**Arshad Hassan**) showed how expanding digital finance and banking access could raise Pakistan's chronically low tax-to-GDP ratio.
- *Circular Debt and Energy Pricing* (**Rabia Ikram, Muzzna Maqsood**) traced Pakistan's circular debt crisis to inefficiencies in private IPPs, showing tariff hikes alone cannot resolve it.
- *Governance and Power Sector Performance* (**Jamshed Uppal**) provided cross-country evidence that better regulatory quality and rule of law significantly improve IPP efficiency.

- *Job Search and Labor Market Participation* (**Zunia Saif**) presented experimental evidence that better access to job information improves female labor participation and job match quality.

These papers underscored that **sector-specific reforms — in taxation, energy, and labor markets — are indispensable to sustain inclusive growth.**

Roundtable Reflections

The conference concluded with a high-level roundtable chaired by **Matthew McCartney**.

- **Ishrat Hussain** stressed structural reforms as the key to transformation.
- **Ali Khilji (WTO)** highlighted Pakistan's trade vulnerabilities and the potential of services trade.
- **Naseem Faraz (Finance Ministry)** emphasized fiscal discipline under the Medium-Term Expenditure Framework.
- **Ahmed Fasih (Commerce Ministry)** mapped Pakistan's challenges in an increasingly fragmented global trade environment.
- **Rajah Rasiah** reflected on how global shocks have reshaped the trade-growth nexus.

The discussions reinforced the conference's central message: **Pakistan's growth future hinges on breaking structural constraints in trade, investment, productivity, and institutions while preparing for a turbulent global economy.**

The full agenda and abstracts of the Eighteenth Annual Conference are included at the end of this newsletter for readers who wish to explore the sessions in greater detail.

5. WTO CHAIRS

The Lahore School of Economics, as a designated WTO Chair institution, continued to play an active role in shaping trade policy debates in Pakistan through high-level dialogues, workshops, and research dissemination under the **WTO Chairs Programme**. During 2024–25, the Chairs initiative provided a vital platform for engaging academics, policymakers, and industry stakeholders on how Pakistan can navigate a changing global trade environment while promoting sustainable growth and diversification.



Seminar on Macroeconomic Models and Trade Policy

5 November 2024

In a seminar jointly organized by the Lahore School of Economics and the World Trade Organization, **Dr. Azam Chaudhry** and **Dr. Moazam Mahmood** presented their macro models linking Pakistan's growth to trade and the European Union's growth to employment. They emphasized the need for nuanced trade policies that address both structural constraints and opportunities, and underscored how external shocks translate into domestic vulnerabilities. The session also highlighted the European Central Bank's role in sustaining employment-driven stability within the EU, offering lessons for Pakistan on the interplay between trade, monetary frameworks, and labor markets. This seminar reflected the Chairs Programme's mission of integrating cutting-edge academic modeling with international policy perspectives.

Focused WTO Dialogue with Ali Khilji

24 April 2025

On the sidelines of the Annual Conference, Dr. Azam Chaudhry and Dr. Moazam Mahmood engaged in a focused discussion with Ali Khilji (Head for Asia and Pacific Economies Regional Desk, Institute for Training and Technical Cooperation, WTO). The dialogue centered on Pakistan's trade vulnerabilities, particularly its reliance on a narrow export base and exposure to external shocks such as fluctuating demand and rising trade restrictions. The conversation highlighted the potential benefits of improving trade facilitation, enhancing product diversification, and building institutional capacity. Dr. Chaudhry stressed the urgency of proactive policy measures to shield Pakistan's trade from global volatility, while Mr. Khilji underlined the WTO's support in guiding members through

Presentation of Pakistan's Trade Model at WTO Geneva

4 July 2025

At the WTO headquarters in Geneva, **Dr. Azam Chaudhry** (Pro-Rector and WTO Chair for

Pakistan) and **Dr. Moazam Mahmood** presented Pakistan's Trade Model, developed by the ITC Modeling Lab team — **Amna Noor Fatima, Sara Qasim, and Anoosha Liaqat**. The constraint-based model links Pakistan's external trade sector with domestic investment and consumption, capturing the country's structural dependencies.

Key takeaways underscored that GDP growth above 5% triggers a surge in capital goods imports, creating external imbalances unless consumer imports are regulated and capital/intermediate goods are facilitated. The presentation drew strong interest from WTO Chairs across Türkiye, Qatar, Oman, Vietnam, and others, opening doors for **regional collaboration, curriculum development, and faculty exchanges**. This international engagement positioned the Lahore School at the forefront of applied trade modeling within the global Chairs network.

6. RESEARCH PROGRAMS

The ITC's research agenda for 2024–25 was ambitious in scope and deeply connected to Pakistan's pressing development challenges. A central focus was on **green growth and climate policy**, with several studies examining the nexus between trade, industrial performance, and environmental outcomes. *“Nudging Firms in Pakistan to Invest in Renewable Energy: The Role of Information Provision”* (Theresa Thompson Chaudhry, Azam A. Chaudhry, Phillip Garner, Nikita Grabher-Meyer) piloted an experimental approach to understand behavioral and informational barriers to renewable energy adoption, testing whether tailored information could shift firms toward solar energy. Similarly, *“Estimating the Impact of Foreign Demand Shocks on Firm-Level Emissions in Pakistan”* (Theresa Thompson Chaudhry, Azam A. Chaudhry, Nida Jamil) linked trade policy to environmental sustainability by analyzing how tariff changes in Pakistan's trade agreements influenced energy use and emissions among exporters. Together, these projects underscore ITC's commitment to aligning Pakistan's trade and industrial policy with climate resilience.

Another strand of research engaged directly with **trade and industrial upgrading in Sialkot's globally competitive clusters**. Two companion projects, *“High Costs of High-Quality Inputs as a Barrier to Upgrading in the Football Sector in Sialkot”* and *“Fixed Costs of Innovation as Barriers to Upgrading in the Surgical-Goods Sector in Sialkot”* (Azam A. Chaudhry, Shamyla Chaudry, Amit Khandelwal, Eric Verhoogen, David Atkin), tested whether input subsidies and innovation grants could overcome the entrenched barriers that prevent firms from upgrading into higher-quality products. Conducted under the PEDL/IGC initiative, these randomized interventions will provide rare experimental evidence on policy tools for industrial upgrading. Complementing these efforts, *“Understanding the Nature of Pakistan's Trade Policies and Testing Their Impacts on Trade Performance”* (Azam A. Chaudhry, Gul Andaman) catalogued a decade of trade-promoting and trade-restricting policies, quantifying their real impact on Pakistan's exports. Meanwhile, *“Using Pakistan's Product Space to Promote Higher Exports”* (Azam A. Chaudhry, Gul Andaman) identified feasible new products for diversification by leveraging the Atlas of Economic Complexity. These projects collectively push forward ITC's core mission of linking trade strategy with industrial transformation.

At the macroeconomic level, ITC continued to strengthen its reputation for **policy-relevant modeling**. “*A General Equilibrium Macroeconomics Model for the Pakistan Economy*” (Moazam Mahmood, Azam A. Chaudhry) consolidated years of work into a simulation tool capable of projecting aggregate demand, growth, labor markets, distribution, and external balances under varying policy scenarios. This GE model, used in both policy engagement and teaching, complements the **Pakistan Trade Model** developed by the Modeling Lab, which was presented at the WTO in Geneva. Alongside quarterly *State of the Economy* reports and a *Budget in Brief*, these models are now central to national economic debate. Further macroeconomic inquiry was pursued through “*The BOP Crisis in Pakistan: Stabilization versus Growth*” (Moazam Mahmood, Shamyra Chaudry), which argued for capital controls as a stabilization tool to balance external adjustment with growth.

Research also delved into **firms, innovation, and the future of work**. “*Heterogeneous Adoption of Knowledge Capital and its Impact on Firm Performance*” (Rabia Arif, Azam A. Chaudhry) drew on primary survey data from Punjab to analyze how organizational and market rigidities shape the probability of innovation in textiles, automotive, and light engineering, with particular attention to differences between exporters and non-exporters. Complementing this was “*Certification and Export Performance*” (Waqar Wadho, Azam A. Chaudhry), which showed that firms holding international certifications are far more likely to export and expand their markets. In services, “*The Global Gig Economy: Pakistan’s Opportunity to Become a Leader in Service Exports?*” (Theresa Thompson Chaudhry, Hamna Ahmed) mapped Pakistan’s freelancing landscape through data scraping of online platforms, opening the door to policies that could position Pakistan as a leader in digital service exports.

A strong **gender, family, and human development lens** cut across multiple projects. “*Fertility and the Female Decision to be Self-Employed*” (Rabia Arif, Ayesha Mir) identified causal pathways between self-employment and higher fertility among urban educated women, highlighting the compatibility of flexible work arrangements with child-rearing. “*Why Are Cousin Marriages So Common in Pakistan?*” (Mary Shenk, Saman Naz, Theresa Thompson Chaudhry) explored kinship systems and cultural norms sustaining Pakistan’s unusually high rates of consanguinity. “*Gender Discrimination in Education: A Case of Pakistan*” (Rabia Arif, Maham Khalid) and “*Measuring Mother’s Empowerment Through Culture of Son Preference*” (Aimal Tanvir, Rabia Arif) documented entrenched gender gaps in education and intra-household bargaining, while “*Impact of Temporary Migration and Remittances on*

Child Health Outcomes” (Mydda Aslam, Rabia Arif) revealed how remittance flows improve child nutrition, particularly for girls in female-headed households.

Finally, ITC advanced methodological innovations in productivity measurement and surveys.

“Measuring Actual TFP Growth: Stripping Away Omitted Price Bias and Demand Shocks” (Nida Jamil, Theresa Thompson Chaudhry, Azam A. Chaudhry) proposed corrections to traditional productivity metrics, producing cleaner growth estimates. ***“ITT Estimates of Ramadan Exposure on Mothers and Children”*** (Theresa Thompson Chaudhry) used natural experiments to study cultural influences on maternal and child outcomes. And through ***“Business Confidence Surveys of the Business Community in Lahore”*** (Azam A. Chaudhry, Aymen Junaid, Theresa Thompson Chaudhry), the Centre has built a high-frequency dataset capturing firms’ expectations, credit conditions, and investment intentions.

Taken together, these projects demonstrate the breadth of ITC’s research—from randomized trials in industrial clusters and macroeconomic modeling tools for policymakers, to behavioral experiments on green energy adoption and cultural studies of kinship and gender. By tackling Pakistan’s development challenges across multiple dimensions, ITC’s 2024–25 research program continues to position the Centre as a **leading hub for evidence-based economic analysis and innovative policy design**.

For readers interested in the detailed scope of ITC’s ongoing projects, the abstracts are provided below, offering deeper insight into their objectives, methodologies, and policy relevance.

6A. Project Abstracts:

1. *Nudging Firms in Pakistan to Invest in Renewable Energy: The Role of Information Provision*

Researchers: Theresa Chaudhry (Lahore School of Economics), Azam Chaudhry (Lahore School of Economics), Phillip Garner (Utah Tech), and Nikita Grabher-Meyer (University of East Anglia)

In this exploratory study, we will design and administer a survey across a sample of enterprises in central Punjab to better understand the main structural, informational and behavioral barriers that prevent business owners from switching to greener energy sources. In particular, we will elicit respondents’ personal preferences, beliefs and attitudes around greener energy sources,

as well as their intended behavior or expected likelihood of adopting greener energy. In addition, we will conduct a randomized information experiment, embedded within the same survey, to test whether information provision targeted at changing specific respondents' beliefs is effective at increasing their intention of purchasing solar energy.

2. *Estimating the Impact of Foreign Demand Shocks on Firm-Level Emissions in Pakistan.*

Researchers: Theresa Chaudhry (Lahore School of Economics), Azam Chaudhry (Lahore School of Economics), and Nida Jamil (Early Career Researcher, School of Economics, University of Edinburgh)

Pakistan has experienced limited export growth and, at the same time, has been negatively affected by higher pollution and climate change-related shocks. This implies that controlling emissions is an important issue for policymakers and other stakeholders. This research will look at the link between foreign demand shocks that occurred as a result of trade agreements signed by Pakistan and firm-level emissions. We will use the changes in product-level tariffs due to Pakistan's trade agreements to analyze how foreign demand shocks impact the level of energy usage and emissions by Pakistani manufacturers. We will also test to see if the destination of exports differentiates the size of these effects and if these differences can also be attributed to decisions made by firms, such as the use of new technology or changes in their product mix. These results will be critical for policymakers and stakeholders as they consider trade agreements and policies for industrial growth and lower emissions.

3. *Fixed Costs of Innovation as Barriers to Upgrading in the Surgical-Goods Sector in Sialkot*

Researchers: Azam Chaudhry (Lahore School of Economics), Shamyla Chaudry (Lahore School of Economics), Amit Khandelwal (Yale University), Eric Verhoogen (Columbia University) and David Atkin (MIT).

We propose to offer grants for innovations that increase exports and for innovations to produce new products (i.e. that have not previously been produced in Sialkot). The main goal is to evaluate the effectiveness of the grant program in promoting innovation among treated firms. We will also look for spillovers of innovations to other (untreated) firms through network links.

4. *Understanding the Nature of Pakistan's trade policies over the last decade and testing their impacts on Pakistan's trade performance.*

Researchers: Azam Chaudhry (Lahore School of Economics), Gul Andaman (Lahore School of Economics),

In recent years, the debate surrounding free trade versus protectionism has intensified, particularly as industrialized countries refocus on industrial policy. This argument is of particular importance to Pakistan which faces slowly growing exports but a high level of imports, which in turn has resulted in multiple balance of payments crises. This study will quantify the types of trade-restricting and trade-promoting policies and quantify the depth of these policies. This study will analyze the impact of trade policies on Pakistan's trade performance over the last decade. We will use the Global Trade Alert (GTA) database, which contains comprehensive data on cross-country trade policies, and evaluate the nature and extent of trade-enhancing and trade-restricting policies in Pakistan over the last decade. We will then empirically test the impact of these policies on Pakistan's export performance over this time. Both the methodology and the results will be shared with policymakers and other stakeholders to contribute to the debate on the success or failure of policies aimed at improving Pakistan's trade performance.

5. *Using Pakistan's Product Space to Promote Higher Exports.*

Researchers: Azam Chaudhry (Lahore School of Economics), Gul Andaman (Lahore School of Economics)

A persistent problem faced by Pakistan has been the balance of payments deficit. This is because Pakistan's exports have been considerably lower than its merchandise imports and also reflects that Pakistan's exports are mostly lower value-added products. This study will explore potential high value-added products that can become part of the export basket of Pakistan based on Pakistan's cumulative knowledge and capabilities. We will use Hausman's product space mapping, available in the Atlas of Economic Complexity, to explore which potential high-value-added products can be added to Pakistan's export basket. This framework identifies the products and sectors that the country can focus on based on its cumulative knowledge and capabilities and has special relevance to Pakistan because of its narrow manufacturing and export base and the persistent balance of payments crises that the country experiences. This can be used to identify important areas of industrial and export growth and can be shared with relevant policy makers and stakeholders.

6. *High Costs of High-Quality Inputs as a Barrier to Upgrading in the Football Sector in Sialkot*

Researchers: Azam Chaudhry (Lahore School of Economics), Shamyla Chaudry (Lahore School of Economics), Amit Khandelwal (Yale University), Eric Verhoogen (Columbia University) and David Atkin (MIT).

We develop an experiment to offer subsidies for high-quality rexine to a random subset of firms and examine if this subsidy spurs upgrading. We look at two related but distinct dimensions of behavioral responses by firms. First, since high-quality inputs are likely to be complements in production, the subsidy may induce firms to purchase complementary high-quality inputs and produce higher-quality footballs, using their existing technologies and production processes. Second, the subsidy may potentially stimulate learning and spur technological improvements in the production process, if for instance innovation has a higher return in high-quality segments of the industry or if producing higher-quality balls leads firms to transact with more knowledgeable buyers. Accordingly, we intend to track complementary changes in other inputs, shifts in the composition of output toward higher-quality footballs, and other process innovations.

7. *Heterogeneous Adoption of Knowledge Capital and its Impact on Firm Performance*

Researcher: Rabia Arif (Lahore School of Economics) and Azam Chaudhry (Lahore School of Economics),

We will use detailed primary data already collected by the Lahore School from firms in the textile, light engineering and automotive sectors to explore two important aspects of innovation:

First, we explore the heterogeneity in the adoption of ‘knowledge capital’ (defined as the new set of knowledge acquired, produced and used in the value creation process) at firm level in textile, light engineering and automotive sectors in Punjab to estimate its impact on the firm level outcomes such as revenue, cost of production, quality of the final product and market price of the final product.

Next, we argue that organizational and market rigidities may play an important role to motivate (deter) the firm to innovate (or not to innovate). We determine the probability of the firms to

engage in innovation (product, process, marketing and business) based upon these factors as well as explore whether different sources for funding the innovation at firm level may play a trivial role in the firm's probability to innovate across different sectors.

Last, we explore if any of these factors affect the firm level outcomes and the probability of innovation for the exporting and non-exporting firms any differently.

In addition to the analysis above, we explore one more important aspect of exporting firms in global market. We argue that global competition that the local exporting firms face, may affect their tendency to innovate in terms of its both intensity and direction.

8. *The Global Gig Economy: Pakistan's Opportunity to Become a Leader in Service Exports?*

Researchers: Theresa Chaudhry (Lahore School of Economics) and Hamna Ahmed (Lahore School of Economics)

Sustainable growth and balance of payments stabilization requires targeted policies to improve Pakistan's export performance. Decade after decade Pakistan has continued to have a narrow base of low value-added exports. Freelance employment can be a promising solution to low export revenue. In FY 2022, a total of 2.6 billion dollars' worth of IT exports were recorded of which freelancing export remittances accounted for 4 million dollars (The Express Tribune, 2022). Recently the prime minister has called for increasing IT exports to 15 billion dollars by 2026 (Radio Pakistan, 2023). Despite its huge potential, there is little research on growth of the gig economy for independent freelance workers in developing countries including Pakistan. Through this project, we hope to bridge this gap in the literature. We scrape data on Pakistan-based freelancers from the sites Guru.com and Freelancer.com to learn more about the landscape of freelancing in Pakistan.

9. *Why are Cousin Marriages so common in Pakistan? Examining the Effects of Cultural Norms, Dowry, and Economic Development as Potential Drivers*

Researchers: Mary Shenk (Penn State University), Saman Naz (East Tennessee State University), and Theresa Chaudhry (Lahore School of Economics)

We use the framework of intensive vs. extensive kinship patterns to study consanguineous

marriage patterns in Pakistan, which has the highest rate of cousin marriage in the world. Our theoretical framework contrasts motivations to move from a strategy of solidifying/reinforcing kin networks (intensive kinship) vs. expanding existing kin networks (extensive kinship) in response to economic development. We predict that factors related to traditional, intensive kinship systems will increase the likelihood of cousin marriage, whereas higher market engagement and aspects of family, kinship, and marriage systems associated with extensive kinship systems, will decrease the likelihood of cousin marriage. We also discuss why cousin marriage rates in Pakistan are so high compared to other parts of the world.

10. *Fertility and the Female Decision to be Self-Employed – Testing for Bidirectional Causation in Punjab, Pakistan*

Researchers: Rabia Arif (Lahore School of Economics) and Ayesha Mir

Numerous studies, mostly from the developed countries, report a positive correlation between the number of children or fertility decisions and the choice of becoming self-employed amongst women. However, the direction of this relationship has remained ambiguous. Contingent upon the direction of causation between children and women self-employment, policies directed towards achieving a certain goal, such as facilitating women in maintaining an appropriate balance between family and work, may have varying ramifications on female self-employment. Using cross-pooled MICS data for the years; 2011 and 2014, this study aims at testing two competing hypotheses; first whether having more children influence women to prefer self-employment? Second, is it employment-specific attributes associated with self-employed females that impact their decision to reproduce? The paper contributes to the literature by testing for bidirectional causation between female self-employment and children using an instrumental variable approach for bringing exogenous variation in fertility and female self-employment decisions, respectively. Using this approach and controlling for various individual, household, and regional characteristics, the findings of this study reveal that the direction of causality runs from being self-employed to giving birth to children (fertility) in a positive manner, mostly driven by educated, middle-aged women dwelling in urban areas. There is no significant impact found of fertility on female self-employment decisions. Being self-employed is likely to lower the opportunity costs of raising (more) children, that is, forgone income and depreciation of skills, would be more prominent in dependent employment. This supports the argument that occupation specific characteristics, such as self-employment being self-run, flexible in terms of scheduling working hours and leisure time in between, routine-

friendly, and exhibit a lower incompatibility between mother and worker roles, bring a considerable degree of ease for women in raising more children. Thus, considering there is a higher degree of compatibility attached to self-employment as well as in expectations of raising a suitable heir of their family business, self-employed women in Pakistan may prefer having an additional child – a finding that has a tad bit of empirical evidence in the past literature.

11. *Determining the Extent of Gender Discrimination in Education Sector: A case of Pakistan*
Researchers: Rabia Arif (Lahore School of Economics) and Maham Khalid

Gender bias in developing countries may restrict educational opportunities for girls in comparison to boys. This paper attempts to measure the gender disparity in education amongst children from 5 years to 18 years of age across Pakistan. Using the data from PSLM 2010-2011 and applying Oaxaca decomposition with probit estimation we measure the gender gap. The results interestingly show that although a strong bias exists against females in overall enrollment rates, but as we explore further, we see that males drop out of private schools more as compared to females and the accumulated level of schooling of the male adults is also lower than that of females. We find that much of these differences are not due to the endowment effects. Large negative deviation for males may be attributed to the unobservable pressure and society's norms regarding the role of males that affect them in an adverse manner.

12. *Impact of Temporary External Migration & Remittances on Child Health Outcomes in Punjab, Pakistan*

Researchers: Myddia Aslam and Rabia Arif (Lahore School of Economics)

Primary motive of temporary migration in developing countries like Pakistan is generally in response to the income constraint faced by the households. Therefore, to relax the resource constraint, migrants tend to remit back to their families in home countries. This study attempts to look at the impact of temporary external migration and remittances on child health outcomes as measured by height-for-age (HAZ) & weight-for-age z scores (WAZ) in Punjab, Pakistan. Further, we test for the presence of intra household resource allocation bias where boys get preferential treatment in term of health care as compared to girls. Using historic migration rates and number of banks in each district to instrument for external migration and remittances from overseas, respectively, we employ an Instrumental Variable Approach estimated through Two Stage Least Square and Treatment Effect Model. Our results suggest significant positive impact of external migration and remittances on both the indicators of child health outcomes. Further

this study confirms the presence of increased bargaining power of women in households headed by females resulting in a greater share of resources being spent on girls relative to boys.

13. *Measuring Mother's Empowerment Through Culture of Son Preference in Pakistan*

Researchers: Aimal Tanvir and Rabia Arif (Lahore School of Economics)

This study highlights whether giving birth to a son plays a role in determining mother's empowerment in Pakistan and in particular, if the birth-order of the son has any additional impact in uplifting the mother's status within a household, using the Pakistan Demographic and Health Survey (PDHS) 2012-13. In Pakistan, the household's economic conditions make parents treat their sons and daughters differently and ultimately, giving preference to sons over daughters, in terms of education, health and nutrition, as the social and economic utility of a son, overpowers that of a daughter. In the presence of this culture of son preference, if women then give birth to a son or a number of sons, then it should help empower them. The results of the study show having a son significantly helps in empowering mothers in Pakistan. In contrast, the son's birth-order (both higher and lower) is not an important factor for improving mother's empowerment. Mother's empowerment is mainly driven by the number of sons, and age of the son, and these results are more pronounced in rural areas of Pakistan, and for mothers belonging to poor households

14. *Measuring Actual TFP Growth: Stripping away Omitted Price Bias and Demand Shocks*

Researchers: Nida Jamil (Early Career Researcher, School of Economics, University of Edinburgh), Theresa Chaudhry (Lahore School of Economics) and Azam Chaudhry (Lahore School of Economics)

15. *ITT Estimates of Impact of Ramadan Exposure on Mothers and Children*

Researchers: Theresa Thompson Chaudhry (Lahore School of Economics)

16. *The BOP Crisis in Pakistan, Stabilization versus Growth*

Researchers: Moazam Mahmood (Lahore School of Economics) and Shamyra Chaudry (Lahore School of Economics)

Pakistan's BOP crisis, have increased in their frequency, duration and intensity, as preceding analyses of the current crisis have noted. This project will attempt to systematize some of the behavioural relationships that can be observed to hold over the past thirty years, and the efficacy of policy impact on them. It has been observed that there are large capital outflows. These comprise of the primary income account balance on the current account and domestic outflows from the capital account. As a result, the researchers propose that the following relationship exists between these variables. As exchange rate goes down the capital outflows will increase unless the interest rate are increased. If interest rates are held constant with devaluation, it leads to capital outflows. Thus, one proposal that is likely to work is controls of capital as it stabilizes the economy and does not dampen growth.

17. Barriers to Upgrading in the Sialkot Football Sector

Researchers: Azam Chaudhry (Lahore School of Economics), Shamyla Chaudry (Lahore School of Economics), David Atkin (MIT), Amit Khandelwal (Columbia University) and Eric Verhoogen (Columbia University)

The project has been developed under the *International Growth Centre (IGC)* and the *Private Enterprise in Developing Countries (PEDL)* initiative. In this project, the researchers investigate the extent to which high costs of high-quality inputs are a barrier to upgrading in the football sector. One of the primary inputs into football production is an artificial leather called rexine. They propose an experiment to offer subsidies for high-quality rexine to a random subset of firms and examine if this subsidy spurs upgrading. They will look at two related but distinct dimensions of behavioural responses by firms. First, since high-quality inputs are likely to be complements in production, the subsidy may induce firms to purchase complementary high-quality inputs and produce higher-quality footballs, using their existing technologies and production processes. Second, the subsidy may potentially stimulate learning and spur technological improvements in the production process, if for instance innovation has a higher return in high-quality segments of the industry or if producing higher-quality balls leads firms to transact with more knowledgeable buyers.

18. Barriers to Product Upgradation in the Sialkot Surgical Goods Sector

Researchers: Azam Chaudhry (Lahore School of Economics), Shamyla Chaudry (Lahore School of Economics), David Atkin (MIT), Amit Khandelwal (Columbia University) and Eric Verhoogen (Columbia University)

The project has been developed under the *International Growth Centre (IGC)* and the *Private Enterprise in Developing Countries (PEDL)* initiative. In this project, they investigate the extent to which fixed costs of innovation are a barrier to upgrading in the surgical-goods sector in Sialkot. If there are externalities in the process of innovation, there may be an important role for governments in subsidizing the costs of innovation. A leading policy idea is to provide matching grants, in which governments provide supplemental funding for projects chosen by individual firms. However, there has never been a rigorous randomized evaluation of such a program (Campos et al, 2012). The research team is conducting such an evaluation in the surgical-goods industry in Sialkot and plan to offer matching grants for innovations that increase exports.

19. A General Equilibrium Macroeconomics Model for the Pakistan Economy

Researchers: Moazam Mahmood (Lahore School of Economics) and Azam Chaudhry (Lahore School of Economics)

The Pakistani economy has struggled to gain momentum over the last decade and economic policy makers have failed to understand the impact of key decisions (such as the multiple IMF stabilization programs) on economic outcomes. One major reason for this is the lack of a formal model of the Pakistani economy to project key economic variables over time. ITC researchers have developed a macroeconomic model for Pakistan's economy. The researchers have worked in collaboration to present a policy simulation tool which helps to provide estimates for macroeconomic aggregates using values for key policy variables. The model is both a policy simulation tool and both a didactic tool taught at the undergraduate level and will further the taught at the graduate level. The model can be used to simulate key macroeconomic variables such as: (i) aggregate demand, (ii) long-run growth rates, (iii) labor market outcomes, (iv) income distribution, (v) price levels, (vi) interest rates and (vii) exchange rates.

20. Business Confidence Surveys of the Business Community in Lahore

Researchers: Azam Chaudhry (Lahore School of Economics), Aymen Junaid and Theresa Chaudhry (Lahore School of Economics).

7. KNOWLEDGE SHARING AND CAPACITY BUILDING

A central pillar of ITC's mission is to extend the impact of its research through active knowledge sharing and the strengthening of institutional capacity. Over the past year, ITC faculty and researchers have engaged not only with **national stakeholders — policymakers, industry leaders, and development partners — to inform evidence-based decision-making**, but also invested in **training students and early-career researchers within ITC**, equipping them with the tools and skills to become future leaders in policy-relevant research. By bridging this internal and external focus, ITC ensures that its work has both immediate policy relevance and long-term sustainability through human capital development.

The knowledge sharing and capacity building meetings and activities undertaken during 2024–25 are summarized below.

12 August 2024-Dr. Dr. Azam Amjad Chaudhry, Dean of the Faculty of Economics at the Lahore School of Economics, delivered a lecture to participants of the 2nd Specialized Training Course (STC) and the 10th Domain-Specific Mid-Career Management Course at the Civil Service Academy — the main training institute for Pakistan's incoming and mid-career civil servants. Drawing on his research and policy experience, Dr. Chaudhry emphasized the centrality of evidence-based policymaking, cautioning that “correlation does not equal causation.” He explained how overreliance on superficial data interpretations can weaken governance, while diverse expert committees and empirically informed decision-making strengthen it. He also reviewed Pakistan's growth experience, the impact of trade policies on economic performance, and the rising importance of industrial policy in the global economy. The lecture urged future policymakers to embrace data-driven approaches as the foundation of effective and inclusive governance.

15th-17th August, 2024-Dr. Azam Chaudhry, Dr. Nida Jamil, and Dr. Theresa Chaudhry presented their joint research on trade and emissions by Pakistani firms subsequent to foreign demand shocks at the Sixth Annual Development Economics Conference at the Lahore School of Economics.

15th-17th August, 2024-Special sessions on trade and institutions were organized by the ITC at the Sixth Annual Development Economics Conference at the Lahore School of Economics. These sessions included presentations on trade, trade policy, trade and emissions and the role

of institutions. Invited speakers included Dr. Zara Liaqat (Wilfrid Laurier University), Dr. Philip Barteska (London School of Economics), and Nikita Grabher-Meyer (University of East Anglia). These sessions were attended by academics, business community members, students, and policy makers, including senior officials from the Ministry of Commerce, who attended in person and online.

2 September 2024-At the National School of Public Policy, Dr. Azam Chaudhry delivered an illuminating lecture that explored Pakistan's current economic policy challenges and the pressing opportunities ahead. He emphasized the importance of achieving equilibrium in the external sector, underscoring that long-term growth can only be sustained if exports and imports are balanced. Using practical examples, he explained how trade tariffs, price elasticity of demand, and shifts in the balance of payments shape national strategies. Dr. Chaudhry also examined the evolving dynamics of the Pakistan–China Free Trade Agreement (Phase II), its implications for local industries, and the urgency of technology adoption and export diversification. His talk provided participants with a nuanced perspective on structural reforms necessary for resilience in Pakistan's economy.

20 January 2025-As a guest lecturer for the 122nd National Management Course at the National School of Public Policy, Dr. Azam Chaudhry delivered a comprehensive lecture titled *“Essential Insights of Economics for Public Policy Formulation and Implementation in Pakistan.”* He began by explaining the concept of elasticity and its importance in analyzing the effects of currency depreciation on exports and imports, linking theory to Pakistan's current challenges. He then addressed broader economic constraints, including low export growth and weak quality upgrading, which trap Pakistan in cycles of slowdowns. Dr. Chaudhry emphasized the importance of evidence-based policymaking, drawing on real policy episodes to show how trade tariffs, depreciation, and fiscal policies shape outcomes. The lecture equipped civil servants with practical tools to think critically about how to design reforms that stimulate growth and reduce recurring external crises.

2 May 2025-Representing the Lahore School of Economics, Dr. Azam Amjad Chaudhry participated as a featured speaker at the Lahore Policy Exchange session organized by CDP on *“Innovative Policy Solutions to Boost Non-Traditional Exports.”* In a lively and well-attended discussion, Dr. Azam Chaudhry highlighted the untapped potential of Pakistan's creative industries, technology exports, and agri-value chains. He argued that export

diversification beyond traditional sectors is essential for breaking out of the low-growth trap, and that targeted policy interventions can create new pathways for competitiveness. The session brought together academics, policymakers, and industry leaders, including representatives from LUMS, the Sialkot Chamber of Commerce, and the Urban Unit. Dr. Chaudhry's contributions emphasized ITC's role in bridging academic research with practical industrial strategies, reinforcing the Centre's reputation as a hub of innovative policy thinking.

LAHORE POLICY EXCHANGE

INNOVATIVE POLICY SOLUTIONS TO BOOST NON-TRADITIONAL EXPORTS

SPEAKERS

- Azam Amjad Chaudhry**
Professor of Economics and Dean, Lahore School of Economics
- Nadia Mukhtar**
Lecturer, LUMS
- Omer Khalid**
Vice President, Sialkot Chamber of Commerce & Industry
- Khurram Afzal Malik**
Senior Specialist Economics The Urban Unit

MODERATOR

- Ali Hasanain**
Associate Professor, LUMS

2nd May 2025, Friday **3:30PM - 5:00PM** **CDPR, 19A FCC, Gulberg IV, Lahore**

9 July 2025- Dr. Azam Amjad Chaudhry, Pro-Rector and Dean of the Lahore School of Economics, and WTO Chair for Pakistan, delivered an in-depth lecture titled “Essential Insights of Economics for Public Policy Formulation and Implementation in Pakistan.” The session brought together senior civil servants at NMC to explore core economic concepts and their direct application to policymaking.

Dr. Chaudhry began by unpacking the idea of elasticity, explaining how the responsiveness of exports and imports to price and income changes shapes the effectiveness of tools like currency depreciation. He emphasized that Pakistan's export base remains low-value and price-inelastic, meaning devaluation alone cannot drive export growth. Building on this, he presented the concept of balance of payments–constrained growth, showing how Pakistan's growth historically stalls above 5% because imports surge while exports remain stagnant — leading inevitably to external crises and IMF stabilization programs.

He further highlighted the dangers of policy built on misleading correlations, stressing the need to distinguish causation through rigorous evidence. Dr. Chaudhry illustrated this with examples

from trade policy and monetary policy, showing how simplistic graphs can misguide decision-making. He called instead for evidence-based policy design, supported by quasi-experiments and real economic events, to ensure reforms deliver measurable results.

Drawing on his research, Dr. Chaudhry assessed the Pakistan–China Free Trade Agreement (FTA), noting how tariff cuts left many local firms vulnerable while failing to upgrade Pakistan’s export basket. He argued that future strategies must prioritize higher value-added exports, deeper tariff concessions, and industrial policies that align with Pakistan’s revealed comparative advantages.

He concluded with insights from the Sialkot football industry technology adoption project, where even proven productivity-enhancing innovations faced resistance due to misaligned labor incentives. This case, he explained, underscores how successful policy interventions require not only the right technology but also institutional mechanisms that ensure adoption.

Overall, the lecture urged policymakers to embrace structural reforms, smarter industrial strategies, and high-value export promotion as the only sustainable way to escape Pakistan’s cycle of stop-go growth.

26 August 2025-At the Civil Services Academy (CSA), Lahore, Dr. Azam Chaudhry, Pro-Rector and Dean at the Lahore School of Economics, delivered a distinguished lecture as part of the Transformative Leadership and Strategic Management Programme designed for Vice Chancellors of public sector universities in Punjab. His session underscored the vital role of visionary leadership in steering higher education institutions through Pakistan's rapidly changing economic and social landscape.



Dr. Azam Chaudhry emphasized that leadership in academia today demands more than administrative oversight; it requires the ability to articulate a clear strategic vision, foster innovation, and build resilient governance structures. He highlighted the need for long-term institutional planning that aligns universities with broader national development goals, particularly in research, technology adoption, and skills development.

Drawing on his extensive policy and research experience, he also stressed the urgency of governance reforms within universities, noting that outdated management practices and weak accountability mechanisms often hinder academic progress. By encouraging Vice Chancellors to think beyond day-to-day management and adopt forward-looking strategies, Dr. Chaudhry positioned higher education as a cornerstone of Pakistan's economic and social transformation.

The lecture offered a roadmap for integrating academic leadership with national priorities, calling on Vice Chancellors to champion innovation, nurture talent, and promote collaborative

networks across academia, industry, and government. In doing so, Dr. Chaudhry reinforced the idea that strong, strategically guided universities are not only centers of learning but also engines of sustainable national growth.

8. MEETINGS & ACTIVITIES

Throughout 2024–25, ITC faculty engaged in a wide range of meetings, collaborations, and policy dialogues that expanded the Centre’s outreach to academia, government, business, and international stakeholders. A central focus was on stakeholder engagement — building partnerships with policymakers, industry leaders, and development agencies to ensure that ITC’s research directly informed national and provincial priorities. These interactions strengthened ITC’s role as a bridge between rigorous research and real-world policymaking.

8.A Stakeholder Engagements

Presentation of Tariff Rationalization Findings to the Prime Minister

26 August 2024

Dr. Azam Amjad Chaudhry presented the findings of the Committee on Tariff Rationalization to Prime Minister Shahbaz Sharif in a high-level meeting also attended by the Minister of Finance, the Minister of Planning, the Minister of Commerce, the Finance Secretary, the Commerce Secretary, the Planning Secretary, and the Chairman of the Federal Board of Revenue. In his remarks, Dr. Chaudhry discussed recent initiatives undertaken under the WTO Chairs Programme, progress on Sialkot’s projects in soccer ball and surgical instrument production, and ongoing challenges linked to the Pakistan–China Free Trade Agreement. He underscored that while the FTA has triggered a surge in imports, it has not been accompanied by sufficient inflows of capital investment, raising concerns about long-term trade sustainability.

Appointment to Senior Policy Board, Ministry of Planning

5–6 September 2024

Dr. Azam Amjad Chaudhry was appointed as a member of a Senior Policy Board constituted by the Minister of Planning, Mr. Ahsan Iqbal. At the inaugural meeting held on 6 September 2024, participants included the Minister of Planning, the Secretary Planning, and senior officials from the Ministry. Dr. Chaudhry contributed perspectives on Pakistan’s trade policy, presenting ITC’s recent trade-related initiatives and research. He emphasized the implications of trade reforms for Pakistan’s export competitiveness and broader economic strategy.

Visit to Sialkot Chamber of Commerce

16 October 2024

A delegation from the Lahore School of Economics, comprising **Dr. Azam Amjad Chaudhry, Ms. Shamyla Chaudhry, and Mr. Fahad Irfan**, visited Sialkot — a major hub of SME exporters — to meet with **Mr. Ikram Ul Haq, President of the Sialkot Chamber of Commerce**. Discussions focused on exploring export opportunities for firms in the surgical goods sector and other industries in Sialkot, alongside initiatives undertaken under the WTO Chair for Pakistan. The team also introduced a new Lahore School project aimed at promoting innovation and boosting Sialkot's export performance.

Consultation on Export Development Fund (EDF)

23 October 2024

Dr. Azam Chaudhry and **Dr. Theresa Chaudhry** participated in a government-led consultation session hosted by the Consortium for Development Policy Research (CDPR) to devise a comprehensive strategy for the Export Development Fund (EDF). In their contributions, they presented trade-related research and highlighted ongoing work on renewable energy adoption among exporters. The session convened prominent academics, policymakers, and stakeholders, fostering debate on how to strengthen the EDF's role in supporting diversification, competitiveness, and sustainable industrial upgrading in Pakistan.

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Meeting with Director General, Civil Services Academy

31 October 2024

Dr. Azam Amjad Chaudhry met with Mr. Farhan Aziz Khwaja, Director General of the Civil Services Academy in Lahore, to discuss opportunities for faculty development and

collaborative research between the Academy and ITC. The meeting also provided a platform to share ITC's recent research findings on trade, productivity, and innovation, highlighting areas where academic insights could strengthen civil service training and policy design.

Collaboration with Punjab Urban Unit

7 December 2024

Dr. Azam Amjad Chaudhry met with the **Chief Executive Officer** of the **Punjab Urban Unit** to explore opportunities for collaboration between the ITC and the Unit. The discussion focused on ITC's ongoing trade research under the WTO Chairs Programme and its potential applications for enhancing trade competitiveness and productivity in Punjab. The meeting highlighted the value of linking academic research with urban policy initiatives to foster sustainable economic development at the provincial level.

Meeting with the Prime Minister on Home-Grown Development Strategy

13 December 2024

Dr. Azam Amjad Chaudhry met with the **Prime Minister of Pakistan** and the **Minister of Planning and Development** to discuss the design of a home-grown development strategy. The discussion emphasized the need to prioritize export promotion, sustainability, and equitable growth as central pillars of Pakistan's long-term economic policy framework. The meeting underscored ITC's role in contributing evidence-based research to shape inclusive and forward-looking national strategies.

8.B Academic & Research Collaborations

Publication on Process Innovation

31 July 2024

Dr. Azam Chaudhry (Co-Head, ITC and WTO Chair for Pakistan) and **Dr. Waqar Wadho** announced the publication of their paper "*Measuring Process Innovation Outputs and Understanding Their Implications for Firms and Workers: Evidence from Pakistan.*" Unlike

much of the existing literature that focuses on product innovation, this study introduced five new metrics to measure process innovation outputs. The research highlighted how innovative capabilities, embeddedness in knowledge networks, and competition drive successful process innovation in Pakistan's traditional sectors. The findings provide fresh perspectives on how innovation shapes firm productivity and worker outcomes, broadening the understanding of innovation-led growth.

Expanding Horizons: Dental Export Opportunities

4 November 2024

In collaboration with the Sialkot Chamber of Commerce and Industry, the Lahore School of Economics launched “**Expanding Horizons: Dental Export Opportunities**”, a pilot initiative aimed at strengthening Pakistan's dental exports to the U.S. and diversifying the country's export base. At the launch event, a delegation led by Dr. Azam Amjad Chaudhry, alongside Ms. Shamyra Chaudhry and Mr. Fahad Irfan, presented the project to Chamber President Mr. Ikram-ul-Haq and local industry representatives. The discussions emphasized export potential in surgical goods and related industries, while introducing the Lahore School's broader initiative to support innovation, market access, and global competitiveness in Sialkot. The event successfully set the stage for dental firms to develop specialized products for the U.S. market and explore new opportunities for growth.

Research Collaboration with Ulster University and Punjab University

13 January 2025



The Lahore School welcomed **Dr. Lesley Dornan** and **Dr. Salman Butt** (Ulster University, Northern Ireland) and **Dr. Javeria Saleem** and **Dr. Mehnaz Rashid** (University of the Punjab) for a focused dialogue on advancing research collaborations. Discussions explored innovative strategies to improve maternal care in underserved areas through community-driven initiatives, emphasizing the transformative role of localized education and public health interventions. The exchange reaffirmed ITC's commitment to collaborative research addressing pressing societal challenges in Pakistan.

8.C Policy Dialogues & Conferences

Meeting with the Punjab Green Development Program

29 January 2025

A delegation from the Lahore School, led by **Associate Professor Dr. Theresa Thompson Chaudhry**, with **Dr. Mehreen Khan** and **Ms. Natasha Moeen**, visited the **Strategic Planning and Implementation Unit** to meet with **Ms. Samia Saleem**, Project Director of the Punjab Green Development Program (PGDP). The visit focused on clean air, water quality, plastic management, and disclosure practices. The PGDP team shared the *Punjab*

State of the Environment Report 2023, while the Lahore School faculty contributed academic perspectives on strengthening sustainable development and environmental governance.

National Business Education Accreditation Council (NBEAC) Conference

17–18 February 2025



Dr. Shahid Amjad Chaudhry (Rector), **Dr. Azam Chaudhry** (Pro-Rector), **Dr. Arshad Hasan**, **Dr. Sophia Ali**, and **Ms. Mehr-un-Nisa Khan Lodhi** represented the Lahore School at the **12th Deans and Directors Conference** of NBEAC, held at Pearl Continental Hotel, Lahore. Rector Dr. Shahid Amjad Chaudhry participated in a plenary panel on “*The Strategic Role of Leadership in Transforming Business Education.*” The session emphasized the role of academic leadership in shaping partnerships between academia, industry, and communities to ensure business schools remain relevant in a digital, sustainable, and inclusive future.

Policy Dialogue at the Modeling Lab

25 February 2025

The Modeling Lab hosted **Mr. Ben French** (Leadership Coach) and **Mr. Mujtaba Piracha** (Secretary Industries, Punjab) for an in-depth exchange on macroeconomic modeling and trade policy. Led by **Dr. Moazam Mahmood** and the Lab team (**Amna Noor Fatima**, **Sara Qasim**, **Anoosha Liaqat**), the discussion covered the Lab’s General Equilibrium Macro Model, the Pakistan Trade Model, and the potential use of Pakistan Single Window data. Debates on landowners’ influence on policy and agricultural pricing further enriched the

session. The visit concluded with informal discussions over lunch, cementing future collaboration prospects.



NSPP Selection Board

17 March 2025

As a senior board member, **Dr. Azam Chaudhry** participated in the **Selection Board of the National School of Public Policy**, reviewing promotion cases for officers from BS-19 to BS-20. His contribution emphasized academic rigor and transparency in ensuring merit-based advancement within Pakistan's civil service.

Strategic Engagements with Global Scholars

22 April 2025

Dr. Azam Chaudhry and the Modeling Lab team met with **Dr. Rajah Rasiah** (Universiti

Malaya) and **Dr. Matthew McCartney** (African School of Economics) to discuss the agenda for the *18th Annual Conference*. The Lab presented its Trade Model and findings on Pakistan's external constraints, highlighting their relevance for policy design.

Policy Dialogues with the Ministry of Finance and Ministry of Commerce

23 April 2025

In separate meetings, **Dr. Azam Chaudhry** and **Dr. Moazam Mahmood** engaged with:

- **Dr. Naseem Faraz** (DG Macro-Fiscal Policy Unit, Ministry of Finance) on aligning fiscal expenditures with development priorities through the Medium-Term Expenditure Framework (MTEF). The discussion stressed transparency, performance-based budgeting, and institutional reforms.
 - **Mr. Ahmed Fasih** (Joint Secretary WTO Wing, Ministry of Commerce) on Pakistan's trade competitiveness amid shifting global dynamics. The dialogue focused on diversifying markets, improving standards compliance, and integrating trade policy with wider economic reforms.
-

Meetings with Industry and Development Stakeholders

2 May 2025

- With **Mr. Omar Masud** (Secretary Industries, Punjab): strategies for stimulating industrial investment, productivity, and competitiveness.
- With **Mr. Omer Khalid** (Vice President, Sialkot Chamber of Commerce): opportunities for higher value-added exports in sports goods, surgical instruments, and leather sectors.
- With **Mr. Asif Ali Farrukh** (GD Industries, Prices, Weights and Measures): modernization of industrial regulation and measurement standards.
- With **Ms. Saira Omar** (MD, Punjab Small Industries Corporation): supporting SME growth through innovation, finance, and research linkages.
- With **Mr. Ghulam Jilani** (CEO, GJ Associates): exploring private sector development and evidence-based consulting.

- With **Ms. Inshrah Minahil** (GIZ): cooperation on industrial growth, vocational training, and women's economic empowerment.
-

Recognition by Sialkot Chamber of Commerce

3 May 2025

Following his presentation at the Lahore Policy Exchange, **Dr. Azam Chaudhry** received an official letter of appreciation from the **Sialkot Chamber of Commerce and Industry**, commending his contributions on non-traditional exports. The Chamber invited him to directly engage with Sialkot's business community, signaling opportunities for closer collaboration on export diversification and industrial upgrading.

9. CLOSING NOTE

The 2024–25 year has been one of both **consolidation and growth** for the Innovation & Technology Centre. Reflecting on the past year, ITC has expanded its reach through pioneering research on Pakistan’s economy, high-level lectures and conferences, and active engagement with policymakers, industry leaders, and international partners. From the development of macroeconomic and trade models to field-based research in Sialkot and projects on climate, gender, and social outcomes, ITC has demonstrated its capacity to combine **rigorous academic inquiry with real-world policy relevance**.

At the same time, the year has also been about **laying the foundations for the future**. Going into 2025–26, ITC is committed to deepening its collaboration with global research networks, strengthening its partnerships with government and industry, and investing in the next generation of young researchers. By pursuing this dual mission — reflecting critically on Pakistan’s challenges while innovating toward future solutions — ITC will continue to position itself as a national leader and a global contributor in applied research and policy design.

10. APPENDIX: Conference Agenda and Abstracts

To provide readers with a comprehensive record of the event, we have included the full agenda and detailed abstracts of the Eighteenth Annual Conference on the Management of the Pakistan Economy. These materials offer deeper insight into the range of themes, research contributions, and policy discussions that shaped the conference proceedings.

Agenda of the Conference

Day 1: Wednesday, 23rd April 2025

Venue: Amjad Chaudhry Library, Main Campus

9:15 – 9:30 Registration

9:30 – 10:00 Recitation of the Holy Quran (Muzammil Hussain)

Opening Address: Dr. Shahid Amjad Chaudhry, Rector, Lahore School of Economics

Session 1 – Macro, Growth and Stabilization (10:00 – 13:00)

Chair: Dr. Ishrat Hussain

- 1. State of the Pakistan Economy: Modeling Growth, Trade and Macro Stabilization**

Authors: Dr. Moazam Mahmood, Dr. Azam Chaudhry, Seemab Sajid, Amna Noor Fatima, Sarah Qasim, and Anoosha Liaqat

Abstract: [Detailed abstract from file — highlighting projections of 2.2% GDP growth, inflation trends, welfare decline, and policy implications for imports and investment goods]

- 2. Pakistan: Breaking out of Boom-Bust Cycles to Sustained Economic Growth**

Author: Dr. Rashid Amjad

Abstract: [Full summary on recurring boom-bust cycles, IMF dependence, and challenges in attracting private investment]

- 3. Revisiting Balance of Payments Constrained Growth in Pakistan**

Authors: Dr. Azam Chaudhry, Gul Andaman, Aymen Junaid

Abstract: [Empirical estimate of Pakistan's BOP-constrained growth rate and sensitivity to trade, remittances, and capital flows]

4. Monetary Policy under Fiscal Uncertainty, External Vulnerability and Low Productivity: The Case of Pakistan

Authors: Dr. Naved Hamid and Dr. Murtaza Syed

Abstract: [Analysis of monetary policy limits in Pakistan under BOP constraints and fiscal uncertainty; links to productivity]

5. Sustainable Industrial Policy and Industrial Upgrading in Southeast Asia

Author: Dr. Rajah Rasiah

Abstract: [Comparative study of industrial policies in ASEAN and lessons for Pakistan's industrial upgrading]

6. Discussion on the Trade Model & Multilateralism

Speaker: Mustafa Sadni Jallab, WTO (Online)

Session End Remarks: Dr. Ishrat Hussain

13:00 – 14:00 Lunch

Session 2 – Trade and Enabling Factors (14:00 – 16:00)

1. Assessing the Impact of Trade Restrictions on Pakistan's Exports: U.S. Tariff Policies and the EU's Carbon Border Adjustment Mechanism

Authors: Dr. Azam Chaudhry, Dr. Gul Andaman

Abstract: [Estimated losses to exports from U.S. tariffs and EU CBAM; sectoral impacts on textiles, agriculture, and manufacturing]

2. Mitigating Air Pollution in Punjab's Transport Sector: Constraints and Opportunities

Authors: Dr. Theresa Thompson Chaudhry, Natasha Moeen, Dr. Mehreen Khan

Abstract: [Policy and institutional challenges in tackling transport-sector emissions; recommendations for EVs, ITMS, and fuel quality reforms]

3. Implications of Global Value Chain (GVC) Participation and Positioning on Economic Growth: A Cross-country Comparison of Pakistan and Its Regional Competitors

Authors: Dr. Rabia Arif, Dr. Azam Chaudhry

Abstract: [Findings on Pakistan's weak GVC linkages relative to India, Bangladesh, China, and policy implications for competitiveness]

4. Unlocking Global Markets: The Impact of International Standards Certification on Pakistani Firms' Export Performance

Authors: Dr. Waqar Wadho, Dr. Azam Chaudhry

Abstract: [Empirical results showing export volume and growth gains for certified firms; role of innovation and product diversification]

Discussion & Closing of Day 1

Day 2: Thursday, 24th April 2025

Venue: Amjad Chaudhry Library, Main Campus

Session 1 – Institutional Change for Growth and Stabilization (09:30 – 11:30)

1. Post COVID-Pandemic Inflation Persistence and Inflation Expectations in Pakistan

Authors: Dr. Kaleem Hyder, Sabina Khurram Jafri, Omar Farooq Saqib

Abstract: [Findings on how inflation expectations drive persistent inflation, based on Phillips curve estimation]

2. Pakistan: The Missing Macroeconomics of Urbanization

Author: Prof. Matthew McCartney

Abstract: [Analysis of Pakistan's unusually slow urbanization, its impact on productivity, industrialization, and employment growth]

3. Revamping Pakistan's Export Development Fund (EDF)

Authors: Dr. Mujtaba Piracha, Usman Khan

Abstract: [Critical assessment of EDF governance and strategies to reposition it for export-led growth]

4. Revisiting the New Classical Savings and Investments Equation for Pakistan

Authors: Shamyla Chaudhry, Dr. Moazam Mahmood, Muzzna Maqsood

Abstract: [Reformulation of the savings-investment equation by including capital outflows to restore theoretical consistency]

Discussion

11:30 – 11:45 Tea Break

Session 2 – Sectoral Strategies (11:45 – 13:45)

1. The Impact of Financial Inclusion on Tax Revenue Mobilization

Author: Dr. Arshad Hassan

Abstract: [Panel data evidence linking financial inclusion to stronger tax mobilization across economies]

2. Governance Factors in the Performance of Independent Power Producers – International Evidence

Author: Dr. Jamshed Uppal

Abstract: [Cross-country analysis of governance indicators and IPP performance; lessons for Pakistan's energy sector]

3. Pricing Energy and Retiring Circular Debt – The Unfortunate Menace

Authors: Dr. Rabia Ikram, Muzzna Maqsood

Abstract: [Study of circular debt dynamics, inefficiencies in privatization, and the burden of rising tariffs on competitiveness]

4. Informed Job Searching: How Access to Information Shapes Job Search Behavior

Author: Dr. Zunia Saif

Abstract: [Experimental evidence on how job attribute information influences youth job search behavior and female labor participation]

Discussion

13:45 – 15:00 Lunch

Round Table Conference (15:00 – 16:30)

Chair: Dr. Matthew McCartney

1. *The Need for Structural Change* – Dr. Ishrat Hussain
2. *Pakistan's Trade Vulnerabilities* – Ali Khilji (WTO)
3. *Pakistan's Medium-Term Expenditure Framework* – Dr. Naseem Faraz (Ministry of Finance)
4. *Pakistan's Global Trade Environment* – Ahmed Fasih (Ministry of Commerce)

Rapporteur's Report: Dr. Matthew McCartney

Closing Remarks: Dr. Shahid Amjad Chaudhry, Rector, Lahore School of Economics

Conference Paper Abstracts:

State of the Pakistan Economy: Modeling Growth, Trade and Macro Stabilisation

Authors: Dr. Moazam Mahmood, Dr. Azam Chaudhry, Seemab Sajid, Amna Noor Fatima, Sarah Qasim, and Anoosha Liaqat

The Modeling Lab at the Lahore School, presents the annual State of the Pakistan Economy at the conference. It projects weak recovery of GDP growth for FY2025, of 2.2%, from flatlining two years ago. Inflation has been brought down to 10%, by a curious policy mix of soaring energy prices, and halving wheat prices. But high inflation for three years, has taken its toll on welfare, reducing the purchasing power of already weak growth in incomes. With poverty mounting to near 30% of the population.

A trade model has been developed for Pakistan as part of the WTO Chairs Program. The model focuses on both GDP growth and trade. It seeks to explain both low growth of GDP and high growth, observed in Pakistan. The model shows GDP growth to be constrained primarily by investment. Investment in turn is shown to be primarily constrained by import of investment goods. The policy implication is that high growth can be obtained with a sustainable Current Account (CA). This requires a policy of liberalising import of investment goods, but balanced by cutting imports of non wage consumption goods.

Pakistan: Breaking out of Boom-Bust cycles to Sustained Economic Growth

Author: Rashid Amjad, Professor, Lahore School of Economics

Over the last 25 years the Pakistan economy has been subject to recurring boom-bust cycles. More worrying the periods of growth have significantly shortened and most recently in 2023 the economy was faced with certain default on servicing its debt but for the relief given by the IMF Stand-by 9 month \$ 3 billion Arrangement in July 2023.

After an initial successful stabilisation the government entered into a 37 months Extended Fund Facility (EFF) of \$ 7 billion with the IMF in September 2024 which has further consolidated the stabilisation process at the expense of low economic growth.

This paper argues that while there is broad based agreement on the necessity of carrying out structural reforms to move the economy to a sustainable high growth path the pre-requisites for ensuring this transition needs more careful analysis. While the economic reforms may provide an incentive structure to spur structural reforms the challenges in ensuring this transformation poses many constraints not least of which is in attracting private sector investment which has been steadily declining to less than 9 percent of GDP in recent years. Pakistan could well end-up in a low level equilibrium trap of macro stability with little or low growth threatening rising unemployment and poverty. To avoid this would require a much better investment climate than the country currently provides.

Revisiting Balance of Payments Constrained Growth in Pakistan

Authors: Azam Chaudhry , Gul Andaman and Aymen Junaid

We estimate Pakistan's balance of payments constrained growth rate for 1996-2023. The BOP-constrained growth rate is the maximum GDP growth rate above which unsustainable current account deficits emerge, forcing policymakers to implement contractionary measures that ultimately reduce GDP growth. We estimate Pakistan's BOP-constrained annual growth rate to be 3.71% for the 1996-2023 period, which is significantly lower than the estimate of 4.41% for the 1980-2017 period. The BOP-constrained growth rate is most sensitive to changes in import income elasticity. If the import income elasticity value decreases from 1.47 to 1, the BOP-constrained growth rate increases from 3.71% to 5.45%. If remittance growth increases to 14% from 11.43% annually, the BOP-constrained growth rate increases from 3.71% to 4.09%. Similarly, if the real effective exchange rate grows at -1.5% annually instead of -0.83%, the

BOP-constrained growth rate only increases to 4.02%. Finally, the impact of an increase in capital inflows from 13.18% to 15% annually only increases the BOP-constrained growth rate to 3.78%. The analysis also reveals how Pakistan's persistent low TFP growth has weakened export competitiveness while increasing import dependence, exacerbating these BOP constraints.

*Monetary Policy under Fiscal Uncertainty, External Vulnerability and Low Productivity:
The Case of Pakistan*

Authors: Murtaza Syed and Naved Hamid

Current headline inflation in Pakistan is at a historic low and economic growth is less than the country's population growth. Normally, the appropriate monetary policy decision in such a situation should be straightforward. However, unfortunately the economic situation in Pakistan is more complex. Pakistan is recovering from a period of extreme macroeconomic instability. In the 18 months period since March 2022, Pakistan experienced one of its highest rates of inflation and exchange rate depreciation, with foreign exchange reserves falling to the lowest level ever, in terms imports coverage.

According to SBP Act 1956 (as amended up to 28-01-2022), the Bank's objectives are to maintain domestic price stability, contribute to the stability of the financial system of Pakistan and support the Government's general economic policies with a view to contributing to development, with price stability being the primary objective. Recent experience has shown that in the case of Pakistan, price stability, financial stability and external vulnerability are inexorably linked.

Most studies since early 2000s have found that growth in Pakistan is Balance of Payments constrained, and that is the cause of the boom-bust pattern of growth observed in Pakistan in the last few decades. Unfortunately, because of relatively slower productivity growth in Pakistan, the estimated sustainable rate of growth has declined from over 5% in the 2000s to less than 4% currently. Therefore, until structural reforms aimed at increasing domestic productivity, reducing import elasticity of growth and increasing export competitiveness are implemented, monetary policy will be forced to slow the economy whenever growth threatens

to push past the rate that is consistent with a sustainable external position. This is needed not only to safeguard external and financial stability, but also price stability—by preventing an upsurge in inflation driven by inordinate pressures on the exchange rate. This becomes especially important, and challenging, if the surge in growth is being driven by irresponsibly loose fiscal policy.

Thus, we conclude that State Bank's primary objective of monetary policy translates to maintaining inflation below the maximum of its target range, i.e. 7%, and keeping the growth rate below 4%. In other words, in keeping with its forward-looking orientation, SBP will have to tighten monetary policy as the growth rate approaches 4% even when current inflation is well below the target maximum inflation rate because of the risk of future pressures on the external position, the rupee and inflation. However, as structural reforms raise the Pakistan's sustainable growth rate, the 4% growth rate limit can be relaxed.

In this paper, we provide the analytical basis of the above conclusion by first examining the relationship between the exchange rate and inflation, both in terms of the exchange rate pass through and the determinants of the exchange rate in Pakistan. Second, exploring the links between productivity, balance-of-payments constrained growth rate and monetary policy under external vulnerability. And third, probing the relationship between monetary policy and productivity enhancing structural reforms.

Sustainable Industrial Policy and Industrial Upgrading in Southeast Asia

Author: Dr. Rajah Rasiah

The latecomer industrialization thesis has acted as a powerful instrument in promoting industrialization. However, not much works exist to explain why some economies that attempted to industrialize are facing premature deindustrialization while a few have managed to not only catch up economically but also leapfrog to shape the technology frontier in a number of industries. This chapter problematizes and assesses industrial policies and industrialization in the Southeast Asian market economies of Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand, and the transition economies of Cambodia, Lao PDR, Myanmar, and Vietnam, and Timor-Leste with a focus on related sustainable development goals (SDGs). The book addresses SDGs 7, 8, and 9. Driven by an agile state, Singapore managed to become a developed economy through strong industrial upgrading. Malaysia has by 2024 launched four national industrial policies, while Indonesia, Philippines and Thailand

introduced *ad hoc* strategies to support industrialization. Foreign trans-national corporations have played a major role in stimulating manufacturing expansion in these economies. Meanwhile, while Singapore's deindustrialization has been accompanied by strong technological upgrading, after years of premature deindustrialization, Indonesia, Malaysia, Philippines, and Thailand have embarked on strategic high technology industries, such as aerospace to raise value-added. If effectively governed through the use of the 'carrots and stick' approach, it is possible that these countries shall break out from the middle-income trap to reach developed status. Brunei shows much promise in its efforts since 2018 to stimulate petroleum related downstream processing. Vietnam has industrialized most among the transition economies, while its GDP per capita has grown rapidly to overtake the Philippines to reach lower middle-income status. While Cambodia, Lao PDR, and Myanmar have industrialized considerably they remain at the crossroads with little efforts to build the STI infrastructure to stimulate industrial upgrading. Timor-Leste is still pegged in primary processing activities

Assessing the Impact of Trade Restrictions on Pakistan's Exports: U.S. Tariff Policies and the EU's Carbon Border Adjustment Mechanism

Authors: Azam Chaudhry & Gul Andaman

We estimate the potential impact of the US tariff policies and European Union's (EU) Carbon Border Adjustment Mechanism (CBAM) on Pakistan's exports to the respective regions. US tariff imposition of 29% with an existing 10% tariff on imports can potentially have a significant impact on Pakistan's exports to the US. If all the increase in the import costs is shifted towards the end consumer, such that the effective increase in export price is 39%, then using the long-run price elasticity of demand, derived from long-run export demand function of Pakistan, our analysis show that aggregate exports may fall by USD 0.82 billion or by 15.6% annually in 2025, of which the textile sector's export decline could potentially be USD 0.68 billion. To estimate the potential impact of CBAM, we use historical export growth rate to the EU, incorporate carbon pricing and employ Pakistan's long-run price elasticity of demand for exports to project Pakistan's exports to the EU from 2026 to 2036 under scenarios with and without CBAM implementation. Our estimates reveal that CBAM implementation in 2026 could annually decline exports to the EU by USD 0.32 billion, reaching an annual decrease of USD 0.59 billion in 2036. This corresponds to annual

reduction of 2.2% in manufacturing, 10.4% in agriculture, and 21% in industrial sector exports from 2026 to 2036. Additionally, Pakistan's export share to the EU, currently 30%, may decline by 2% in 2026. The analysis suggests that the actual impact could be more severe if demand elasticity increases or carbon pricing rises or if more countries implement similar mechanisms.

Mitigating Air Pollution in Punjab's Transport Sector: Constraints and Opportunities

Authors: Natasha Moeen, Dr. Mehreen Khan & Dr. Theresa Chaudhry

Pakistan is grappling with severe air pollution, posing significant risks to public health. With particulate matter (PM_{2.5}) concentrations consistently well above the World Health Organization's (WHO) Air Quality Guidelines, many cities in Pakistan rank among the most polluted globally. Punjab is the biggest province of Pakistan and its transport sector contributes the most to air pollution. Recognizing the health impacts of air pollution and the urgency to tackle the problem, Punjab Government has developed a legal framework to mitigate air pollution through, "Punjab Smog and Clean Air Policy (2023)." The responsible stakeholders are; Transport Sector, Environment Protection Department (EPD), Oil and Gas Regulatory Authority (OGRA), Traffic Engineering & Transport Planning Agency (TEPA), Excise and Taxation (E&T) and Planning and Development (P&D) Board. Thus, the objective of this study is to identify the constraints these stakeholders are facing in mitigating air pollution in Punjab and leverage opportunities particularly for the transport sector. Based on that, 25 unstructured interviews were conducted from all the departments. The legal policy framework emphasizes on the conversion to electric vehicles by improving public transport, phasing out of 3 wheelers and old cars (30 years) completely. On-road vehicles (commercial only) have to attain a fitness certificate from a public-private partnership company, Vehicle Inspection and Certification System (VICS), to have a route permit. Other than that, there should be greater reliance on Intelligent Traffic Management System (ITMS). Lastly, supply of Euro V has to be ensured at every retail point in the metropolitans. This transition is fraught with challenges from every stakeholder. After evaluating interviewee's responses, it was deduced that there are political and bureaucratic constraints due to change in governments, their priorities and policy lags/approvals because of varying power dynamics. Institutional constraints such as lack of coordination (between stakeholders) and funds are critical challenges to acquire necessary equipment to monitor vehicular emissions or to

develop infrastructure for optimizing traffic. There is also a regulatory constraint as no mechanism exists to remove unfit vehicles from the road or deal with the sale of substandard fuel. The respondents recommended that integration of whole system is required to curb air pollution. Suitable research and development is essential to first collect data as to what kind of data is required to be collected at government level for improving data base. Providing cheap alternatives in terms of improved public transport is a better solution. This way commuters would reconsider public transit when confronted with congestion charges and high parking fees. Mostly importantly, changing travel behavior requires a deliberate, long-term sustainable strategy to mitigate air pollution which can only be achieved with awareness campaigns and multiple incentives.

Implications of Global Value Chain (GVC) Participation and Positioning on Economic Growth: A cross country comparison of Pakistan and Its Regional Competitors

Authors: Rabia Arif & Azam Chaudhry

Global Value Chains have transformed international trade by shifting focus from final goods to intricate production networks across countries. Using panel data from 188 countries from 1990-2020, we find that GVC-related trade has a greater impact on economic growth than traditional trade. We also find that forward linkages tend to hinder growth in low-income countries, while backward linkages enhance the export-to-GDP ratio. For middle-income nations such as Pakistan, enhancing forward linkages emerges as the most effective route for improving export performance and increasing economic growth. We then compare Pakistan's GVC position to other countries and find that its GVC position lags behind that of India, Bangladesh, and China, and is marked by high downstreamness and weak forward linkages that restrict value-added exports. We conclude with policy recommendations aimed at improving Pakistan's GVC integration.

Unlocking Global Markets: The Impact of International Standards Certification on Pakistani Firms' Export Performance

Authors: Waqar Wadho, Azam Chaudhry

This study examines the impact of international standards certification on firm export performance using a unique panel dataset from Pakistan's textile and apparel sector (2013–2018). We address endogeneity concerns through an instrumental variable strategy, leveraging the prevalence of certified non-rival firms within the same district as an exogenous determinant of certification adoption. Our findings reveal that certification significantly enhances firms' likelihood of exporting, export volume, and export growth. Certified firms are 44 percentage points more likely to export, achieve ten times higher export volumes, and experience 68% higher annual export growth. We further investigate the mechanisms driving these outcomes, identifying both internal and external effects. Certification expands firms' product range and knowledge networks, fosters process and product innovation, and leads to substantial gains in labor productivity. However, while certification promotes horizontal product diversification, it does not lead to an increase in product complexity. These findings highlight the role of certification in reducing information asymmetries and improving market access, particularly in developing economies with weaker institutional frameworks. Policy implications suggest that while certification enhances export performance and firm capabilities, complementary policies are necessary to foster movement toward higher-value-added production.

Post Covid-Pandemic Inflation Persistence and the Inflation Expectations in Pakistan

Authors: Kalim Hyder, Sabina Khurram Jafri, Omar Farooq Saqib

The post Covid-pandemic inflationary surge in Pakistan climbed to a multi-decade high level in FY23 and FY24. Initially, the pent-up demand, in a favorable monetary and fiscal policy environment, along with global commodity price super cycle, pulled NCPI inflation in double digits. The fallout of Russia-Ukraine war intensified the inflationary pressures, which were further augmented by the supply disruptions from 2022 monsoon floods. The second round effects of higher food and energy prices, and sizeable exchange rate depreciation spilled in to general prices and wages.

Policy response began with State Bank of Pakistan's (SBP) contractionary monetary policy and its associated measures from the autumn of 2022. Fiscal policy complemented SBP's course of actions with a wide range of tightening measures. These demand management policies were successful in arresting the pace of economic activity as the real GDP contracted by 0.21 percent in FY23. In FY24, economic activity recovered moderately by 2.4 percent,

mainly helped by an expansion in agriculture output. High frequency domestic demand indicators, however, remained largely compressed in both FY23 and FY24.

Despite the policy-induced slack in overall economic activity, inflation refused to be plateaued and remained at an elevated level in FY23 and FY24. We argue that the rigidity in inflation was due to higher inflation expectations, which amid cost shocks and rising political and economic policy uncertainty somewhat morphed into a self-fulfilling prophecy.

As an evidence, we formalize our hypothesis using a hybrid new Keynesian Phillips curve in which near-term inflation expectations are established as a determinant of actual inflation in Pakistan. Estimates of the hybrid new Keynesian Phillips curve confirm that near-term inflation expectations have a positive and statistically significant impact on actual inflation. Backward-looking expectations are also important in determining actual inflation in the estimates as they also come out as statistically significant.

The finding is further strengthened through analyzing the explanatory power of inflation expectations in a threshold regression with high and low inflation regimes. The pass-through estimates demonstrate that inflation expectations amplifies the current inflation three times in high inflation regime compared to low inflation regime. This implies that the prevailing conditions, such as high inflation, matter for economic agents' expectations formation and are an important driver of inflation dynamics in Pakistan.

Another highlight of the estimation results is that both the backward-looking and forward-looking expectations carry nearly equal impact in determining actual inflation in the baseline estimates. This is a relatively unique result for a developing country like Pakistan since in most developing countries share of backward-looking expectations tends to be larger than the forward-looking ones, implying weak potency of monetary policy. Overall, the findings underscore the need for an improved management of inflation expectations. Therefore, formal adoption of a monetary policy framework, such as inflation targeting monetary policy regime, should be optimal for Pakistan.

Pakistan: The Missing Macroeconomics of Urbanization

Author: Professor Matthew McCartney, The Africa Urban Lab (AUL), African School of Economics

The global urban population is forecast to increase from 4.22bn in 2018 to 6.68bn in 2050, with 95% of this increase occurring in countries of the global south. There is good reason for optimism. Historically, GDP per capita and urbanization have increased together. Countries that experienced an acceleration of economic growth, such as China after 1980, also experienced accelerated urbanization (Pritchett, 2014). Cities have historically been drivers of industrialization and economic growth. There are well-established theoretical and empirical reasons to link urbanization to explain these economic benefits – the agglomeration benefits of density. There are two interesting exceptions to this general optimism. Firstly, in Africa, since the 1970s, the link between urbanization and industrialization has broken down (Gollin et al, 2016). Africa is urbanizing when strikingly poorer than other developing regions (Henderson, 2010:156). Unable to afford the necessary infrastructure, African cities are often characterized by contagion (exposure to communicable diseases through poor water, sanitation, and hygiene), crime, and congestion (60% of Africa’s urban population lives in slums, and people spend hours each day in traffic). Secondly, in Pakistan (and South Asia more generally), there is a relatively slow rate of urbanization. Between 2023 and 2030 the urban population of Pakistan will increase from 93.8m to 99.4m, or from 38.8% to 40.7% of the total population (ADB, 2024). Pakistan has a much lower rate of urbanization that we would expect for a middle-income country. Many of the key macroeconomic problems in Pakistan, slow pace of structural change (industrialization), slow productivity growth, lack of innovation and upgrading, and slow employment growth can be traced to the slow rate of urbanization. Slow urbanization is a macroeconomic problem.

Revamping Pakistan’s Export Development Fund (EDF)

Authors: Mujtaba Piracha, Usman Khan

Pakistan’s export sector is confronted with significant structural challenges, including low diversification, limited value addition, high compliance costs, and governance inefficiencies. The Export Development Fund (EDF) was conceived as a strategic financial mechanism to mitigate these issues and to enhance Pakistan’s trade landscape through targeted investments that promote productivity and competitiveness. However, despite its initial promise, the EDF has yet to evolve into an effective instrument for overcoming the barriers that impede Pakistan’s export growth and for aligning its potential with the dynamic global trade regime. This paper proposes a comprehensive strategy to reposition the EDF as a proactive and efficient

facilitator of export-led growth. Notably, the recent amendments to financial regulations are anticipated to quintuple the annual resource inflow into the fund. The strategy critically examines governance, transparency, institutional capacity, and funding opacity as core challenges. Additionally, the EDF's board structure and the political economy surrounding decision-making processes are identified as pivotal areas for reform. The exploration of various functional form options advocates for a more autonomous and less conflicted governance structure. At the operational level, this paper discusses pathways for modernising fund management and financing innovative projects. With a strong commitment to the proposed reforms, it is posited that, if implemented effectively, the EDF could transform into a performance-driven engine for enhancing Pakistan's export competitiveness and catalysing economic transformation.

Revisiting the New classical Savings and Investment equation for Pakistan.

Authors: Shamyla Chaudhry & Muzzna Maqsood

This paper follows a new classical methodology where the Current account (CA) is the reflection of domestic imbalance, the Current account (CA) reflects your domestic imbalance, and domestic imbalance is the difference between Investment (I) and Saving (S).

When we estimated the equation for the last fiscal year, 2022, we got the investment-saving gap ($I-S$) of 2 %.

Whereas the Current account (CA) of 4 %, Therefore when equating the Investment saving equation, it stands in Jeopardy Hence the new classical method is at risk.

However, when we reconsider saving, which is re-estimating the saving to account for outflows (KO) we get a different picture.

Saving should compromise all domestic earnings not consumed, outflows (KO) are compromised of income earned in countries crossing borders outside. Therefore outflows (KO) are lost to domestic saving and Domestic Investment.

Ergo, Outflows (KO) should be added to domestic savings (S_{dom}).

We have estimated outflows for fiscal year 2022 at 2.3 % using the Mahmood & Chaudry (2020) equation. Therefore, our equation now changes to $(I-S) + KO = CA$, after incorporating outflows in our equation to support the theory.

Estimating the equation gives us 1.9% +2.3% approximately equal to 4 %, which is equal to the Current account (CA) of 4 %.

Therefore, we have reinstated the new classical equation of domestic saving.

The Impact of Financial Inclusion on Tax Revenue Mobilization

Author: Dr. Arshad Hassan

Tax revenue mobilization is crucial for financing public services and ensuring fiscal stability, yet many economies struggle to effectively increase their tax base. Despite various efforts, tax revenue mobilization remains a critical challenge for both developed and developing nations. Recent research suggests that financial inclusion may play a significant role in enhancing tax revenue. Therefore, we analyze the impact of financial inclusion on tax revenue collection using a comprehensive dataset spanning from 2004 to 2023, covering 30 developed and developing economies. Our findings reveal that greater financial accessibility through (i) the presence of Automated Teller Machines (ATMs), (ii) number of mobile money transactions, (iii) outstanding loans from commercial banks and (iv) the presence of more commercial bank branches, positively impacts tax revenue mobilization. These results signify the potential of financial inclusion to improve tax revenue mobilization in both developed and developing economies. We contribute to the existing literature by assessing the link between financial inclusion and tax revenue mobilization across different financial, economic and governance systems. We recommend that future policy initiatives prioritize the expansion of financial services and improve access to banking infrastructure. By addressing these critical factors, policymakers can lay the foundation for a more inclusive financial system that facilitates tax revenue mobilization and supports long-term economic growth.

Governance Factors in the Performance of Independent Power Producers – International Evidence

Authors: Jamshed Y. Uppal

Independent Power Projects (IPPs) are a major source of power generation capacity around the world. Countries faced with severe energy shortages and limited public resources have turned to private investors to ameliorate the situation. However, the promise held out by such private-public partnership structures has not been evenly realized by different countries (Hoskote, 1995; Mayer and Trück, 2018)

The performance of IPPs in Pakistan has been under critical scrutiny both in the popular press and professional circles. Initially, Pakistan's Hub Power Project was hailed as a landmark in the field of infrastructure finance and set an important precedent for the viability of private financing of energy projects in a developing country. Following it, the Private Power Policy was adopted in 1994 under which 19 IPPs were launched. However, the initiative had a setback in 1998 due to allegations of corruption and the contracts had to be renegotiated (Fraser, 2005). Doubts have been raised ever since as to the fairness of the IPP contracts, their operating performance and role in increasing energy disparities, (Khan, 2014; Siddiqui, 1998; Arafat et al., 2019; Ullah, A., 2023).

Vagliasindi (2012) in her study on Power Market Structure and Performance, points out the need "to implement broader reforms, particularly introducing a sound regulatory framework, reducing the degree of concentration of the generation and distribution segments of the market by attracting public and private players and private sector participation." Other scholars have also underscored the importance of a conducive regulatory and governance environment in the leveraging of private investment for bolstering the energy infrastructure; AEAI (2003), Akcura and Mutambatsere (2024), Hayakawa (2000), Ndlovu and Telukdarie (2020), Woolf and Halpern (2001).

The key objective of this paper is to explore the links between a country's governance and regulatory environment on the performance of IPPs (in terms of access, price, quality, and technical and financial performance). The analysis is based on an IFC (2021) data panel of 50 countries over the period 2017-2019. It is combined with the Worldwide Governance Indicators (WGI) which describe broad patterns in perceptions of the quality of governance across countries and over time. The WGI indicators capture six dimensions of governance: (i) Voice and Accountability (ii) Political Stability and Absence of Violence/Terrorism (iii)

Government Effectiveness (iv) Regulatory Quality (v) Rule of Law (vi) Control of Corruption.

The initial results from this cross-country study confirm the hypotheses that regulatory and governance factors significantly affect IPP's performance. The results are instructive for shaping public policy, by underscoring the importance of improving government effectiveness, rule of law, regulatory quality and control of corruption for the IPP's to better fulfill the potential that such private-public partnership holds.

Pricing Energy and Retiring Circular Debt- The Unfortunate Menace

Authors: Dr Rabia Ikram & Muzzna Maqsood

This study expands the analysis of the privatization efficiency hypothesis (PEH) in the context of Pakistan's power sector. The PEH suggests that the private sector can deliver services at competitive prices and that public investment reduces private investment. Contrary to this, our prior research demonstrates that privatization in Pakistan has led to higher electricity prices, welfare losses for consumers, and a failure to stimulate private sector growth after the decline in public capital formation post-1992. This has hindered overall investment and long-term economic development (Ikram, Maqsood, and Mahmood 2024). The current study addresses the challenge emerging after 2006: the circular debt crisis in the power sector.

Pakistan's energy sector faces persistent strain due to escalating circular debt (CD). Data from 2006 to 2024 reveals that CD in the power sector is predominantly composed of unpaid dues to independent power plants (IPPs). IPPs account for nearly two-thirds of total CD in fiscal year 2024, with CD reaching PKR 2.393 trillion. This underscores inefficiencies in private sector participation.

Despite persistent increases in electricity prices, these measures have not reduced CD but have instead burdened consumers. CD continues to grow despite tariff hikes.

The accumulation of CD arises from multiple factors: high transmission and distribution (T&D) losses (contributing 20–25% to CD), poor bill recovery by distribution companies (DISCOs), delayed government subsidies, and unpaid consumer bills. T&D losses remain the most significant contributor.

CD disrupts liquidity across the power supply chain—affecting fuel suppliers, generation companies, and transmission/distribution firms—while also inflating end-user electricity costs. Pakistan’s industrial electricity tariffs are among the highest in the region, eroding competitiveness in trade and industrial expansion.

Within the region, Pakistan records the highest average industrial electricity prices and the highest T&D losses, escalating its economic challenges. Therefore, there is an urgent need to implement reforms in the power sector to increase the private sector efficiency.

Informed Job Searching: How Access to Information Shapes Job Search Behaviour

Author: Dr. Zunia Saif

This study explores how exposing undergraduate youth to information regarding job attributes affects the extensive margin of job search for instance do they sign up for a job search platform or not. Our earlier work with a similar population showed that many female students are interested in very limited occupations as they had inaccurate beliefs about salary or other job attributes in various occupations. In this study, we test if providing college students with additional information about job opportunities would they incorporate this information into their choices or decisions regarding job search or choosing jobs. We specifically explore the role of exposing the students to one feature of the available job opportunities on our job portal i.e. the most attractive job titles in terms of the number of vacancies available. We call these the ‘high-demand jobs’. We test if priming students about the high-demand opportunities will affect their job choices, lead them to apply to these jobs conditional on being matched to these jobs by our job search portal and subsequently increase their chances of getting call-backs for an interview conditional on applying to these jobs.