

MACRO RESEARCH FOR DEVELOPMENT
An IMF-FCDO Collaboration



[Working Paper: Dynamic Development Accounting and Relative Income Traps](#)

Patrick Imam and Jonathan Temple published as part of the IMF WP series their work titled [Dynamic Development Accounting and Relative Income Traps](#). This paper explores why low-income countries often struggle to raise their income levels relative to advanced economies, such as the United States. Employing a dynamic development accounting framework and finite state Markov chains, the authors examine transitions in relative income and productivity across countries over recent decades.

The study identifies low relative Total Factor Productivity (TFP) as the primary barrier to upward mobility, even as human capital and capital-output ratios show signs of convergence. It further reveals that higher levels of absolute human capital can modestly boost TFP growth. However, persistent disparities in institutional quality and state capacity continue to pose significant challenges. The authors further argue that addressing these relative income traps will require targeted policies to dismantle structural barriers, foster productivity growth, and promote technological adoption.

[Working Paper and External Presentation: Bilateral Trade in Services and Exchange Rates: Evidence of Dominant Currency Pricing](#)

Nan Li and Sergii Meleshchuk authored a working paper titled [Bilateral Trade in Services and Exchange Rates: Evidence of Dominant Currency Pricing](#), which estimates the exchange rate elasticity of bilateral trade in services, offering indirect evidence of producer currency pricing and dominant currency pricing in services trade. The study introduces a novel dataset of bilateral trade flows in services, encompassing 12 broad service sectors across 245 countries, including low-income nations, from 1985 to 2022.

The findings reveal that, like manufacturing trade, the value of services trade is more strongly linked to US dollar exchange rates than to bilateral exchange rates, though this relationship varies by service category. Focusing on tourism, where proxies for trade volume are available, the authors find that bilateral exchange rates have a greater impact on tourism volumes compared to US dollar exchange rates. Additionally, in the context of global supply chains, the study shows that downstream US dollar exchange rate movements – rather than downstream bilateral exchange rates – affect demand for service imports via forward linkages.

The paper was presented at the European Central Bank seminar on October 29, where participants expressed strong interest in future collaborations to enhance services trade data collection. They also emphasized the critical role of the services sector in low-income countries.

[Working Paper: Global Contagion of Financial Reforms](#)

Nan Li, Chris Papageorgiou, Tong Xu, and Tao Zha coauthored a working paper titled [Global Contagion of Financial Reforms](#), which presents a comprehensive database of domestic financial reforms across 90 countries, including low-income countries, spanning from 1973 to 2014. Leveraging this extensive dataset, the authors estimate a structural model that incorporates key factors identified in the literature to explain the global contagion of financial reforms.

The paper's findings reveal two major insights: i) geopolitical influence and cross-country learning were the primary drivers behind the significant rise in financial reforms globally during the 1990s; and ii) reversals of financial reforms in developing countries after the global financial crisis were largely driven by shifts in beliefs about the effects of these reforms on economic growth.

[Working Paper: Economic Diversification in Developing Countries – Lessons from Country Experiences with Broad-Based and Industrial Policies](#)

In the working paper titled [Economic Diversification in Developing Countries: Lessons from Country Experiences with Broad-Based and Industrial Policies](#), authors Corinne Delechat, Giovanni Melina, Monique Newiak, Chris Papageorgiou, and Nikola Spatafora examine the importance and impact of broad-based and industrial policies on economic diversification in developing economies. Drawing on a comprehensive literature review, case studies, and IMF analyses, the study highlights a strong correlation between economic diversification and improved macroeconomic performance, such as faster economic growth and higher incomes per capita.

The research identifies factors influencing economic diversification, including macroeconomic stability, infrastructure quality, workforce skills, credit access, regulatory environment, and income equality. Six case studies – Costa Rica, Gabon, Georgia, India, Senegal, and Vietnam – demonstrate that successful diversification strategies require sustained long-term commitment and effective broad-based policies. The paper also emphasizes the role of industrial policies in addressing market failures to support diversification. However, these policies need to be carefully designed and effectively implemented. Common lessons from the case studies include the importance of maintaining macroeconomic stability, investing in human capital, and fostering competition. Sector-specific mechanisms like Special Economic Zones should be used cautiously, focusing on addressing bottlenecks and minimizing fiscal costs.

External Presentations: Changing Global Linkages – A New Cold War?

Andrea Presbitero and Petia Topalova presented the FCDO-financed paper '[Changing Global Linkages: A New Cold War](#)', co-authored with IMF First Deputy Managing Director Gita Gopinath and Chief Economic Counsellor Pierre-Olivier Gourinchas, at several high-profile events. These included:

- A workshop on Fragmentation in Trade and Financial Flows at the US Federal Reserve Board in Washington D.C. in September
- The BIS/WTO/PIIE Conference on Fragmentation in October
- The European Commission's Annual Research Conference in Ispra, Italy, in November
- The 2024 Global Challenges Workshop on Industrial Policy and Trade Disruption at Bocconi University in November
- The Annual Meetings of the Southern Economic Association in Washington D.C. in November

The presentations discussed emerging signs of fragmentation in trade and investment flows across geopolitical blocs, drawing parallels with the Cold War period. They also emphasized the differing role of non-aligned economies – many of which are emerging markets and low-income economies – in the current period, contrasting it with their role during the Cold War.

External Presentation: The DIGNAD Model – Applications and a New Toolkit

Azar Sultanov and Zamid Aligishiev presented the [Debt, Investment, Growth, and Natural Disaster \(DIGNAD\)](#) model and its applications – an FCDO-financed product – at the [MathWorks Finance Conference 2024](#). They introduced a new toolkit designed to analyze the macro-fiscal implications of climate shocks and emphasized the role of economic policies in mitigating risks by fostering resilience-building in developing economies.

The conference, held in a virtual format, attracted approximately 1,400 registrants, and was widely promoted on social media platforms.

Presentation: Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes

Gabriela Cugat presented the country application '[Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes](#)' during the poster session at the IMF Small Developing States Week. The country application is detailed in Annex VI of the [2023 Article IV Consultation](#). The event began with opening remarks by IMF Deputy Managing Director Bo Li, followed by a high-level panel with senior IMF staff.

The poster session showcased analytical work on the challenges and opportunities faced by Small Developing States, fostering knowledge exchange and collaboration across the institution. The Vanuatu country application highlighted the potential role of direct taxation in shaping a new medium-term revenue strategy. Model simulations underscore the importance of balancing efficiency with distributional outcomes and emphasize the need to reduce the size of the informal sector to enhance fiscal sustainability.

External Presentation: Fragmentation of Trade in Services

Robert Zymek and Nan Li presented work on fragmentation of trade in services during a virtual session to 10 FCDO staff

members. The session featured an update on the development of the Bilateral Trade in Services (BiTS) database, which is expected to be released in 2025. The BiTS database aims to enhance country coverage, time span, and granularity compared to existing databases, enabling novel analyses of services trade including in low-income countries.

The presentation also shared early findings from analyses using the BiTS database. For a sample of advanced, emerging, and low-income economies, the data shows no clear evidence (thus far) of geoeconomic fragmentation in bilateral services trade – a notable contrast to trends observed in goods trade.

External Presentation: Do Capital Inflows Spur Technology Diffusion? Evidence from a New Technology Adoption Index

Gabriela Cugat presented the FCDO-financed paper '[Do Capital Inflows Spur Technology Diffusion? Evidence from a New Technology Adoption Index](#)' at the George Washington University, the LACEA/LAMES Annual Meeting, and the Southern Economic Association Annual Meeting. Co-authored with Andrea Manera, the paper introduces the Embodied Technology Imports Indicator (ETI), a novel measure of technology adoption spanning 181 countries from 1970-2020.

The ETI leverages patent data from PATSTAT and trade data from COMTRADE to quantify the technological intensity of imports, with a focus on developing economies. The study explores the relationship between capital flows and technology diffusion in emerging markets and low-income countries. Using a local projection difference-in-differences approach, the authors find that changes in capital flow regulations lead to a 7-9 percentage point increase in technological intensity over 5-10 years. This is accompanied by a 28-33 percentage point rise in gross capital inflows and a 9-12 percentage point increase in Real GDP per capita (in PPP terms). The findings underscore the important role of capital flow regulations, particularly FDI, in promoting technology adoption in developing countries.

External Presentation: Knowledge Diffusion Through FDI – Worldwide Firm-Level Evidence

The FCDO-financed paper '[Knowledge Diffusion Through FDI: Worldwide Firm-level Evidence](#)' by Jae Bin Ahn, Chan Kim, Nan Li, and Andrea Manera was presented at the European Commission's Annual Research Conference 2024, generating great interest from the audience.

The research examines the impact of FDI on knowledge diffusion by analyzing firm-level FDI activities on cross-border patent citations. The results reveal notable heterogeneity in FDI spillovers: host countries with higher innovation capacities or greater technological similarity to the investing firm benefit more from FDI-related knowledge diffusion. Conversely, countries with lower absorptive capacity capture fewer gains.

Presentation: The Allocation of Talent and Income Differences Across Countries

Robert Zymek presented preliminary findings from his forthcoming working paper at the CREI 30th Anniversary Conference, a closed-door external seminar attended by around 50 academics, and at an internal seminar attended by approximately 30 IMF economists. The research combines economic theory with individual-level labor market data to develop a novel measure of barriers to occupational access for women across countries.

The research reveals that women face higher barriers to accessing certain occupations in emerging and low-income economies compared to advanced economies. These barriers hinder participation and productivity, preventing women from fully utilizing their comparative advantages. The analysis estimates that reducing female occupational barriers to U.S. levels could result in double-digit income gains for low-income countries.

Course: DIGNAD: User's Guide to the Model and Toolkit

On November 1, a course introducing the FCDO-financed product [Debt, Investment, Growth, and Natural Disaster \(DIGNAD\)](#) model and toolkit was delivered to IMF staff. The toolkit enables users to evaluate debt sustainability risks in the aftermath of natural disasters, while addressing the need to rebuild public infrastructure within a robust general equilibrium framework. It also enables analysis of ex-ante policies, such as building climate adaptation infrastructure, enhancing fiscal buffers, or improving public investment efficiency. This makes it a valuable tool for economists conducting tailored analyses of macro-fiscal impacts of natural disasters and resilience-building investments.

The half-day course was attended by 35 IMF economists and received highly positive feedback.

On September 25, the IMF Research Department hosted a workshop for six researchers from the African Economic Research Consortium (AERC) network, representing Sub-Saharan Africa (SSA). The researchers, hailing from Benin, Cameroon, Senegal, Sierra Leone, and Zimbabwe, presented their research on a diverse range of topics:

1. Microfinance Institutional Size and Trade-off between Financial Performance and Outreach: A Quantile Regression Approach
2. A Stochastic Frontier Estimation of Tax Efficiency in the Economic Community of West African States (ECOWAS)
3. Natural Resources and Economic Growth in Sub-Saharan Africa: Does Corruption Matter?
4. Is Exchange Rate a Shock Absorber or a Source of Shocks: Evidence from South Africa
5. Mis-invoicing in Benin's International Trade: An Analysis from Mirror Statistics
6. Investigating the Sources of Asymmetric Growth and Inflation Shocks in the WAEMU Region

Following the presentations, each AERC researcher was paired with an economist from the IMF Research Department for one-on-one discussions to provide further feedback and guidance on their work.

IMF Article: Back to Basics: Total Factor Productivity

Robert Zymek authored the article [Back to Basics: Total Factor Productivity](#), in the September 2024 issue of the IMF's *Finance & Development Magazine*. This article offers a non-technical introduction to the concept of Total Factor Productivity (TFP), explaining its significance in understanding international income disparities and its role as key driver for economic growth.

The piece outlines stylized facts about international differences in TFP levels and growth rates, highlighting lessons from economic research on how to enhance it. The article particularly focused on how low-income countries can close the productivity and living standards gaps with advanced economies.

IMF Article: Eliminating the productivity Drag

The article [Eliminating the Productivity Drag](#) by Nan Li and Diaa Noureldin was featured in the September 2024 issue of the IMF's *Finance & Development Magazine*. The piece explores the global slowdown in productivity growth and proposes policy interventions to address this challenge, highlighting resource misallocation — where capital and labor are not optimally distributed among firms — as a key factor hindering productivity.

To improve resource allocation, the article advocates for structural reforms, including reducing regulatory barriers, enhancing labor market flexibility, and liberalizing financial markets. The authors emphasize that fostering environments where productive businesses can thrive, coupled with the adoption of emerging technologies, can pave the way for renewed economic prosperity.

The views expressed in this newsletter are those of the contributors and do not necessarily represent the views of the International Monetary Fund (IMF), or UK's Foreign, Commonwealth and Development Office (FCDO). For more information, please contact MacroResDev@imf.org or visit the IMF-FCDO Macroeconomic Research for Development [website](#).