

Telecoupled cascading environmental and socio-economic effects of migrant remittances

Topic: Input-Output Analysis: Trade and Global Value Chains policies (5)

Author: Yuqi LIU

Migrant remittances are a vital lifeline for over 800 million people and the largest external funding source for many countries. Given that modern consumption is mediated by complex supply chains, the impacts of remittances cannot be adequately captured using household-level outcomes alone. A supply-chain perspective is needed to identify where remittance-driven demand stimulates activity, who benefits, and where environmental pressures arise. This paper studies the wider economic and environmental consequences of remittances by tracing how additional household demand induced by remittance inflows propagates across industries and across borders.

The research question is fourfold. First, how strongly do remittance inflows translate into economy-wide production responses through inter-industry linkages? Second, how much employment and value added are supported by remittance-induced demand, and how much CO₂ is emitted along the associated supply chains? Third, how are these benefits and burdens distributed across countries and sectors, and what role does international trade play in reallocating impacts? Fourth, how have these remittance-related footprints and their efficiencies changed between 2000 and 2020?

The study uses multi-regional input-output accounting to model remittances as an exogenous income-driven demand shock. We convert remittance inflows into additional household final demand and propagate this demand through the production system to quantify remittance-induced output by sector and country. We then investigate three footprint indicators driven by remittances: employment, value added, and CO₂ emissions from production. To reveal cross-border spillovers, we decompose footprints into domestic impacts and trade-embodied components, distinguishing impacts embodied in virtual imports and virtual exports.

The data used combine national remittance inflow statistics with the Eora multi-regional input-output database at 26-sector resolution for 126 countries. We implement the calculations for five benchmark years, 2000, 2005, 2010, 2015, and 2020, which allows consistent comparisons over time and across country groups.

Results show that remittances function as a macro-relevant demand driver, not only as a private transfer. For 2020, remittances support on the order of about 60 to 65 million jobs globally and generate roughly 290 to 300 billion US dollars in value added along supply chains. The relative importance is highest in remittance-dependent developing economies where remittances represent a substantial share of GDP. In these countries, the share of national activity linked to remittances can be large enough that remittances effectively help sustain the operation of entire economic systems during periods of weak domestic demand. Sectorally, the largest employment and value-added effects are associated with service-oriented activities such as education and health, business services, finance, and other services, reflecting both direct household consumption patterns and strong upstream linkages. Environmental burdens are more concentrated in upstream and enabling sectors. Electricity, gas and water supply and construction account for a large portion of the remittance-related carbon footprint, consistent with energy and infrastructure requirements associated with expanded consumption.

International trade materially reshapes where impacts occur. High-income economies display a higher share of remittance-related footprints embodied in trade, consistent with relying more on production outside their borders. Developing economies, by contrast, bear most of the remittance-related emissions, even when some supply-chain stages serve demand elsewhere. This distribution highlights an environmental equity issue in globally fragmented production networks. Over time, carbon efficiency improves in a subset of large emerging economies, suggesting technological progress and structural change, while employment and value-added efficiencies show

more heterogeneous trajectories across remittance-dependent countries.

The novelty of this study is that it provides, for the first time, evidence on the multidimensional impacts of remittances from a global supply-chain perspective. By tracing remittance-induced demand through interconnected production networks, it quantifies employment, economic value added, and CO2 footprints, and clarifies where these impacts occur across countries and sectors. This supply-chain lens helps move beyond household-level outcomes to reveal the main sectoral transmission channels and cross-border spillovers of remittance-driven demand. The findings are particularly significant for developing countries, especially smaller economies, where remittances serve as an important macroeconomic stabilizer.