Since trade networks are global, economic analyses should be based on them. If microeconomic shocks propagate, the relative value chain position of industries could have different impacts on their economic output. We study a large set of global value chains and discriminate between industries' global up- and downstreamness.

We link these metrics to upstreamness and downstreamness in the previous year, \( X \).

Economic networks and macroeconomic fluctuations:
- Aronovitch, Carvalho, Oecd, and Tahiliani-Salhii (2012). Anale, 2017: Productivity shocks propagate not only to first-order, but also to second- or higher-order connected downstream sectors.
- McNerney, Savona, Caravelli, and Farmer (2022). Supply shocks that originate at primary inputs accumulate while propagating downstream (i.e., to customers).
- If macroeconomic shocks propagate, the relative chain position of industries could have first-order effects on their economic output.

We estimate upstreamness and downstreamness in the previous year, \( X \), and re-compute the input-output identities using the value-added weights, \( FMB \).

Trade linkages in asset pricing:
- Gejlman, Segal, and Wu (2020). U.S. firms with high upstreamness are more exposed to aggregate productivity shocks and thereby carry a risk premium.

We then iterate over (4) and compute the (weighted) average position in value chains as:

\[
D_{i,t} = \frac{1}{N} \sum_{j=1}^{N} \left( \sum_{k=1}^{N} \frac{a_{ij}}{a_{jk}} D_{j,t} \right) + 3 \times \sum_{k=1}^{N} \frac{a_{ij}}{a_{jk}} \frac{V_{i,t} - \lambda_{i}}{X_{i,t}} + \ldots.
\]

where \( D_{i,t} \geq 1 \) and larger values imply higher downstreamness of \( i \).

**Results**

### Main Findings
- Downstreamness is a key driver of expected returns around the globe, whereas upstreamness is not.
- The effect is found within and across countries.
- Industries that are farthest away from primary inputs earn approximately 5% higher returns per year than industries that are closest.

### Robustness
- We validate our empirical results by including various control variables, controlling for nonlinearities, equal-weighting firms within industries, and performing firm-level panel regressions.
- In all our specifications, only downstreamness significantly explains international expected returns.

### Interpretation
- Investors perceive supplier dependence in global value chains as an important source of risk and expect higher returns on investments in firms that have longer upstream value chains than others.
- The analysis suggests that supply-side shocks propagate through input demand chains and accumulate when passing suppliers, making downstream firms particularly risky for investors.