Documentation: Semiconductor Demand Study (SIA & OECD Sources)

My Goal

The purpose of this study was to consolidate accurate global semiconductor demand data from official sources (SIA and OECD). Since no structured datasets were available, I relied on manual extraction from published reports and official websites, complemented by AI assistance and human review. My objective was to produce a transparent, reliable dataset that captures both quantitative sales trends and qualitative strategic context.

Approach Taken

1. Manual extraction from official sources

I gathered monthly global semiconductor sales data for 2025 directly from **SIA market reports**, including values in billions of USD, year-over-year changes, and month-over-month variations. Each entry was linked to its official source for auditability.

2. Contextual enrichment from OECD

I extracted qualitative insights from **OECD publications**, focusing on value-added distribution, demand sectors, and systemic risks. This provided the strategic backdrop to the raw sales figures.

3. AI + human synthesis

Because no downloadable datasets existed, I used AI to structure the extracted information into clean tables and narratives, while manually verifying accuracy against the original sources. This hybrid approach ensured both efficiency and reliability.

4. Documentation of strategic context

I included OECD's warnings about geographic concentration, resilience risks, and diversification attempts. This contextual layer makes the dataset more than just numbers—it connects market performance to systemic vulnerabilities.

Key Insights

Strategic Context

- Geographic concentration: 75% of value added is concentrated in five countries (USA, Korea, Taiwan, Japan, China), creating systemic vulnerability.
- Risks: Geopolitical shocks (US–China tensions, risks in Taiwan) and dependence on limited suppliers.
- Limited resilience: The OECD highlights exposure to global disruptions due to this concentration.
- Trend: Europe and India are attempting diversification through subsidies, but they remain marginal in global share.

Implications

- Corporate dependence: Global firms rely heavily on this concentrated supply chain.
- Policy response: Governments are pushing reshoring and subsidies (e.g., US CHIPS Act, EU Chips Act).
- Market outlook: The projection of ~$1 trillion in global sales by 2026 depends on the capacity of these five countries.

Data Sources:

Semiconductors | OECD

Market Data – Semiconductor Industry Association