RESEARCH BRIEF

A Global View of Creative Destruction

Based on BFI Working Paper No. 2019-133, "A Global View of Creative Destruction," by Chang-Tai Hsieh, Phyllis and Irwin Winkelried Professor of Economics, UChicago's Booth School of Business; Peter J. Klenow, Professor, Stanford University; and Ishan B. Nath, UChicago PhD student

KEY TAKEAWAYS

- ✓ Policymakers often focus on short-run trade deficits and surpluses when constructing trade policy
- ✓ However, the biggest benefit to trade comes from the flow of ideas and the innovations that occur when firms apply those new ideas
- ✓ When trade costs are low, creative destruction among firms increases, jobs are reallocated accordingly, and productivity increases
- ✓ Policymakers should consider the role of innovation—and the flow of cross-border ideas—when conducting trade policy

Trade policy has recently been in the news, with the focus on the costs to firms from higher prices due to trade tariffs. However, the focus on the effect of tariffs on prices misses perhaps the most important benefit from international trade: the transmission of ideas.

In their new paper, "A Global View of Creative Destruction," UChicago professor Chang-Tai Hsieh, Stanford University professor Peter J. Klenow, and UChicago PhD student Ishan B. Nath, analyze trade patterns between the United States and Canada before and after the Canada-US Free Trade Agreement (CUSFTA) of 1988 to reveal that trade liberalization increases creative destruction and speeds the flow of technology across countries.

Opening borders and minds

The authors list key facts about the flow of jobs across firms, and how these flows are affected by trade policy. They then show that these facts can be explained by model where trade facilitates the flow of ideas across countries.

The facts can be distilled to two key points:

1. **Large job flows.** The average job creation and destruction rate in manufacturing over five-year periods (from 1973-2012) is about 30 percent in Canada. The average job creation rate in US manufacturing is also about 30 percent (1973-2012), and the average job destruction rate in the US is about 5 percentage points higher. The large rates of job creation and destruction suggest that an important part of economics is when firms innovate on products of other firms. Innovating firms then gain jobs, while the firms whose products are taken over lose jobs.

Table 1 · Job Flows in Canada Before and After Canada-US Free Trade Agreement (CUSFTA)

Job Flows	Pre-CUSFTA	Post-CUSFTA
Job Creation Rate	30%	31%
Job Destruction Rate	25	33
Job Destruction from Large Firms	22	24
Job Creation from Exports	9	18

Notes: Pre-CUSFTA is 1978 - 1988. Post-CUSFTA is 1988 - 2003.

2. **Trade is a big driver of creative destruction.** This is particularly evident in Canada, which has a much smaller economy than the US and, likewise, shifts in trade policy have larger aggregate impacts. For example, Table 1 shows job creation and destruction rates in Canada before and after CUSTA. Job losses increased from about 25 percent to 32 percent, but job gains from exports doubled from about 9 percent to 18 percent. In the US, the job destruction rate increased about 6 percentage points after CUSTA (Table 2), but the US was also impacted by increased imports from China during that period, so these results cannot be attributed primarily to CUSTA. Also, all of the US job destruction was driven by large firms. Finally, productivity improves as trade grows and innovations occur.

These facts, and others listed in the full paper, attest to the power of ideas at work—specifically the exchange of ideas—according to the authors. In their model, ideas flow from country to country via trade. For example, a foreign technology may enter a domestic market where an innovating firm applies that technology to replace a product sold by a domestic firm. The domestic firm gets replaced (creative destruction), and job reallocation occurs. This creative destruction works both ways: Domestic firms can take over foreign markets for a product, and foreign firms can take over the domestic market.

This churning is impacted by the costs associated with trade; that is, if high tariffs or other barriers are erected between countries, then this makes it more difficult for a US firm that innovates to replace a foreign firm. Similarly, this makes it more difficult for a foreign firm that innovates to replace a domestic firm. The effect is that consumers in both countries do not have access to the best ideas. But more importantly, the ideas of the innovating firm are not shared with firms in the other country.

In such a world, firms do not benefit from foreign ideas; likewise, they have to depend on their own abilities to innovate and would find it harder to compete against foreign innovators in world markets. As an extreme example, imagine a country that effectively prevented the introduction of smartphone technology into their domestic markets; that country's cellphone manufacturers would find it very difficult to compete against the newer technology, and the country's consumers would not benefit from innovations in smartphone technology. In essence, innovation is "decoupled" between the two countries.

Table 2 · Job Flows in US from 1977 - 2012

Job Flows	'77-'87	'87-'92	'92-'12
Job Creation Rate	34%	33%	31%
Job Destruction Rate	32	31	38
Job Destruction from Large Firms	26	25	32
Job Creation from Exports	NA	2	2

Notes: Table is calculated from US manufacturing census micro-data. Job creation and destruction rows were calculated over five year periods. Large firms are above average employment firms in the initial year.

Conclusion

Creative destruction among manufacturers increased following adoption of the Canada-US Free Trade Agreement of 1988. In Canada, this churning occurred equally among large and small firms, and in the United States it was primarily evident among large firms. Armed with these and other facts, the authors constructed a model that describes this phenomenon. When trade barriers are low, foreign and domestic firms take over each other's markets more frequently, which stimulates long-run growth and improves productivity.

For policymakers, this work suggests that they consider the flow of ideas when developing trade policy, and not just focus on the short-term deficits and surpluses in traded goods and services. So important is this flow of ideas that the authors even speculate about the creation of a "Global Technical Change Accord" to help all countries benefit from this innovation exchange, akin to global climate change agreements meant to internalize negative pollution externalities. The authors also acknowledge the need for further research along many lines, including on the impact to workers from creative destruction, the impact of the shifting nature of trade agreements, and on the need for better evidence on knowledge spillovers.

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