

Hot competition for the humble zipper

By [François Lévêque](#)

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Combine two rows of fine teeth that lock together, a slider and a tab, and all of a sudden you have a quick way of securely closing a bag, jacket or pair of pants - a zipper.



Image credit: Visual Hunt

These handy, everyday devices were [invented in the United States](#) more than a century ago but are now global. They are manufactured in many places, sewn or glued in place pretty much everywhere and used absolutely everywhere. But however humble and ubiquitous the zipper may seem, it currently carries a Japanese passport with a lot of Chinese visas. To learn more, let's zip through a historical overview, a few pieces of international-trade theory and a look at the ongoing market battle.

In your closet, advantage Japan

Take a sample of five items in your clothes closet and examine the tabs on any zippers. Odds are that at least one is marked with the letters YKK. It was made by a Japanese firm, currently the world's top zipper manufacturer, with \$10 billion in annual revenue and a [40% global market share](#) – pretty impressive.

So how did one Japanese company achieve this happy position? Does it have something to do the comparative advantages of Japan which, as British economist [David Ricardo](#) explained in 1817, give rise to trade between nations? Not really. The land of the rising sun never specialised in zippers or more broadly in light manufacturing. Above all, the success of YKK zippers is not due to exports. Instead, it's about a single firm investing abroad to set up factories. The company is now represented in 73 different countries through about [100 wholly owned subsidiaries](#).

A US invention in the home of blue jeans

If anywhere ever enjoyed a comparative advantage with respect to zippers it was the United States. That's where the device was invented and, after some difficulty, finally adopted. The saga of the US zipper is told in a [thorough but entertaining book](#) by Robert D. Friedel, professor of history of technology and science at the University of Maryland. He sees the zipper as the emblematic invention no one needs but which ultimately prevails, albeit laboriously.

Twenty-five years passed between 1893, when the original patent was filed, and its first actual use on rubber galoshes.

Here indeed was an innovation desperately seeking an application. For many years tailors and garment manufacturers happily made do with hooks, buttons and ribbons. They were cheap and easy to replace, with a wide range of colors and uses. But the need for speed and fashion's appetite for novelty finally prevailed to make the zipper an essential accessory.

Blue jeans are a perfect example of this process. Levi's brought out its first model with a zipper in 1947. The San Francisco-based firm was looking for a way to interest East Coast women, suspected of having doubts about the [rather visible button fly](#). So zippers (as they're called in the United States; in the UK they're known as zips) entered the fray as an alternative to fly buttons. We know now which one came out on top – just think of the sleeve of the Rolling Stones' LP *Sticky Fingers*.

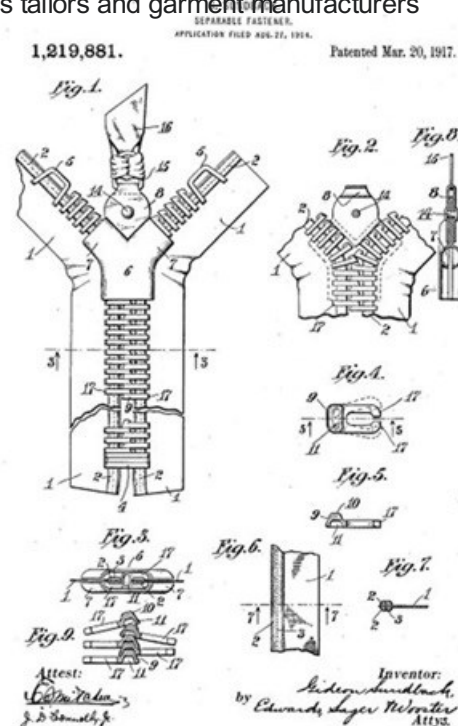
Talon tumbles

But maybe we should get back to the US and international trade. In the 1960s the incumbent zipper manufacturer, Talon, enjoyed a comfortably dominant position in its home market. Its name featured on [seven out of ten tabs](#). But a decade later it had lost half its market share and these days it barely rates just a few percentage points.

This was a classic case of a monopoly coming unstuck after resting too long on its laurels. It didn't do enough to improve productivity, so its prices were too high; it failed to innovate, consequently neglecting new applications such as handbags, luggage or outdoor gear; averse to risk, it exported little, despite the fact that textile manufacturing was fast relocating.

In short, it took the exact opposite course from YKK. Soon after the Japanese firm was incorporated, it started building its own machines to achieve faster, higher-quality production. It also went abroad, soon setting up subsidiaries in Malaysia, Thailand and Costa Rica. It first appeared in the US market in 1960, marketing zippers that were cheaper than Talon's and comparable, if not better. YKK's first US production unit followed 12 years later.

In a humiliating blow to Talon, the pressure suits worn by the first two astronauts to walk on the moon were fitted with YKK zippers. It was as if James Bond's zipper-unzipping magnetic watch in *Live and Let Die* hadn't been invented by the gadget-master Q, but by the R&D division at YKK.



[click to enlarge](#)

Home market, exports, direct investment

There are several lessons in international trade to be learned here.

First, comparative advantage, once sought between rival nations, now operates between firms. Why do some only serve their home market, whereas others export and others still open subsidiaries abroad?

In the mid-1970s Professor John Dunning, of Reading University, provided an initial insight at a symposium in Stockholm. Drawing together [several strands of economic theory](#) he proposed an eclectic matrix for analysing foreign direct investment by multinational corporations such as YKK. He focused on several factors, including the advantage of holding various specific assets.

For our champion zipper manufacturer, one of these assets was its machine-tool know-how. Unlike its competitors, the Japanese firm based its expansion on developing its own materials and equipment. From the outset it designed its own tools and fed them proprietary materials. It only purchased plastic pellets and a [mixture of alloys of its own invention](#).

YKK operates along similar lines to Michelin, the France-based tire manufacturer, closely guarding the secret of its manufacturing processes and making constant improvements. This is a situation completely at odds with one in which the same suppliers serve the same customers. In the latter case, the customers share the same intermediate consumption and machines, leaving no scope for differentiation with regard to these factors and hence no scope for comparative advantage.



Image credit: [joeszilvagy](#) on [Visualhunt.com](#) / [CC BY-NC-SA](#)

The second insight we owe to Professor Marc J. Melitz of Harvard University. He developed an [entry-exit model](#) for firms operating in the same industry but with varying degrees of productivity. On the basis of this difference they fall into one of three categories: the most efficient serve the home market and export; the slightly less efficient ones only cater for the home market; the least efficient go out of business.

But the ranking shifts according to hindrances to international trade, notably transport and information costs, and import tariffs. When the effect of such obstacles declines, pushed down by technical progress or the opening of borders, new firms will export, whereas a further cohort of poor performers will go to the wall, their sales on the home market captured by the remaining, more efficient firms.



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Jeremy Seekings and Nicolai Nattrass 25 Feb 2019



Melitz demonstrates new gains from liberalising trade: reallocation, in the same industry, of production by the least-efficient firms to their most efficient competitors. In other words, globalization, which enlarges the potential market, has the effect here of increasing average productivity in a given industrial sector. For example, the market share lost by Talon and taken up by YKK uses less labor and less capital to manufacture one meter of zipper.

Under equivalent competitive conditions this will benefit the consumer because the price will be lower. Which is indeed the case in Melitz's model. The same competitive regime prevails regardless of how open international trade may be. At equilibrium all the firms cover their average unit cost and none of them behave strategically. The firms go on operating as separate entities, as in a situation of perfect competition.

Yet international trade generally encourages the emergence and consolidation of powerful firms with substantial market share, or in other words oligopolies which coalesce and gather strength. So it changes the intensity and competition regime.

Toward a global duopoly

The zipper business has gradually evolved from one dominated by national champions, each initially entrenched on their home ground then challenged by imports from the most enterprising of their foreign rivals, to a market in which a dominant multinational, YKK, coexists with a competitive fringe comprising several hundred, mainly Chinese companies.

In recent years the competitive situation has shifted again, through consolidation of the zipper industry in the People's Republic of China. There are now a dozen or so firms, all with three-letter names. Some, such as YCC or YQQ, make no secret about trying to closely mimic their big Japanese rival.

One of their number, SBS, is listed on the Shenzhen stock exchange and stands out for its size and ambition. It leads the pack in terms of the number of patents it has filed, overall output and the share ([about 25%](#)) it exports. It makes no bones about being out to [beat YKK](#).

So a global duopoly is taking shape. But this has in no way reduced the intensity of competition. The two companies eagerly dispute each other's position in various market segments. SBS is shifting up-market with better-quality metal or even plastic zippers. It already supplies customers such as Adidas or the French sports retailer Decathlon, which will not accept zippers that jam after only 1,000 cycles.

But it will take SBS a long time to outdo YKK's comparative advantages. Operating close to its customers thanks to subsidiaries all over the world, the Japanese firm also wields considerable technological clout, due to its R&D centres, machine and engineering group, and production plants. At the same time YKK, which holds a 40% share of the global market by value but only 20% by volume, has [decided to move out of its comfort zone](#) – in the middle and upper echelons of the market – and dispute its rival's supremacy over the budget end of the market.

No one knows how this contest will pan out. The most likely outcome would be a duopoly, if only because the big firms using large volumes of zippers do not want to have to come to terms with a single supplier.

But at a time of open trade warfare and exacerbated economic nationalism, it would be a mistake to rule anything out. Not even a tweet announcing dissuasive tariffs on the import of Chinese zippers to the United States on some highly strategic pretext, nor yet the expulsion of YKK from Chinese markets on the grounds of domestic security, industrial espionage or infringing SBS patents. Particularly if the zipper one day becomes a connected object capable of gathering data on a wearer's movements.

Of course, one way of avoiding a zipper war would be to go back to good, old buttons.

Cambridge University Press has just published a new book by François Lévêque, [“Competition’s New Clothes: 20 Short Cases on Rivalry between Firms”](#).

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