



A podcast about the economics of trade & policy
with Chad P. Bown

Episode 185. The historic collapse of Switzerland's watch industry

[Episode webpage](#)

June 18, 2023

Transcript

(lightly edited)



Chad Bown: Swiss watches are cool. When you arrive in Geneva, there are signs everywhere for these incredibly high-end Swiss watchmaking companies. You've seen them - Rolex, Omega, Breitling, and Tag Heuer, just to name a few.

Then you see the advertisements and billboards with all the celebrities, wearing those fancy, highly crafted Swiss timepieces – Charlize Theron, Cate Blanchette, and Serena Williams all sport them. Oh look – there is Brad Pitt, Roger Federer, George Clooney, and even James Bond.

The Swiss watchmaking industry has a long, long history – i.e., 500 years, worth of history. But in the 1970s, the Swiss watch industry was nearly wiped out. Almost overnight, tens of thousands of workers in Switzerland suddenly lost their jobs. The period is often referred to as Switzerland's "Quartz Crisis."

In this episode we are going to tell the story of the Swiss watch industry, the trade and technology shock that created the 1970s Quartz Crisis, and what today's policymakers can learn from that Swiss crisis for workers and for industrial policy.

To do all that, I will be joined by a very special guest.



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Tate Twinam: Tate Twinam at the College of William and Mary.

Chad Bown: Tate Twinam is an economics professor at the College of William and Mary. Tate is going to share some new research describing the impact on Swiss workers of a massive change to the watchmaking world.

Chad Bown: Hi, Tate.

Tate Twinam: Hi, Chad.

Chad Bown: You are listening to an episode of *Trade Talks*, a podcast about the economics of trade and policy. I'm your host, Chad Bown, the Reginald Jones Senior Fellow at the Peterson Institute for International Economics in Washington.

THE EPISODE

Chad Bown: Tate, let's start with the very basics. What is a mechanical watch?

Tate Twinam: A mechanical watch is basically telling time through a collection of gears and springs. These will oscillate driving gears, driving hands, which will keep track of time, and this has to be regulated in a precise manner. These watches typically involve on the order of a hundred or more components for each time piece.

Chad Bown: Tell us about the history of the mechanical watch industry in Switzerland and how it got started.

Tate Twinam: The mechanical watch industry in Switzerland is typically dated back to the 16th century.

Geneva was a major hub of global trade with connections all over the world. It also had a great deal of precious metal workers and jewelers who could make very high-end watches that were in demand by the very wealthy. Many of France's greatest watchmakers were Protestant and fled persecution and settled across the border in Geneva.

It was also the case that a number of laws were passed in Geneva — John Calvin issued these edicts banning the wearing of ostentatious jewelry as it was contrary to the Calvinist ethic. But there was an exception made for watches as these were practical devices.

This created a great opportunity for watchmakers because there were many underemployed jewelers, precious metal workers who could simply transition to making these high-end watches. The watch industry grew a great deal in Geneva, and demand for these high-end watches skyrocketed.



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Chad Bown: Geneva back then was a fairly sizable city, so why did watchmaking begin to expand outside of Geneva?

Tate Twinam: To protect their industry, watchmakers in Geneva started to form guilds to restrict supply. The high demand for these high-end watches meant that prices started skyrocketing, and there was basically just not enough supply. To get around the limitations on sourcing parts, the watchmakers in Geneva started to look to places where they could get components that were not protected by the guild, namely, outside of Geneva.

Adjacent to Geneva, following historic trade routes, was the Jura mountains arc. The Jura mountains arc was primarily agricultural, with some textile workers, but the area was mountainous and not very good for farming. Farming was very seasonal. The weather was very harsh. It was a lot of dairy farming, and things like that.

So you end up with lots of underemployed farmers living in these mountains. And while the construction of these high-end mechanical watch movements is very skill intensive, the production of components for them is not. This can be done by relatively unskilled workers. And so a lot of these farmers were essentially recruited into home production of watch components.

And this worked out very well because the entire family could take part in this. This was not male coded work. In fact, half of the watch workforce has typically been women. But this allowed for a big expansion of home production of watch components throughout the Jura mountains arc.

Chad Bown: How important was watchmaking to these town and cities sprinkled through the Jura mountains arc in that part of Switzerland?

Tate Twinam: Many of these cities and towns that started hosting these watchmaking clusters became very large hubs of watchmaking locally. It was a huge part of the commercial enterprise of the city. Some of these cities – like Neuchâtel, Saint-Imier, and La Chaux-de-Fonds – started developing larger watch workshops outside of just the family mold.

La Chaux-de-Fonds was referred to by Carl Marks in his work *Das Kapital* as a giant “watch manufactory.”

Chad Bown: What was it like to be a watch worker in Switzerland at this time?

Tate Twinam: The production of each of these individual components can typically be done by lower skilled workers. The assembly of these require much higher-skilled workers.

The production of watches was extremely decentralized. Typically, households would focus on producing a single type of components, and so a hundred different households might be involved in the production of a single time piece.



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Chad Bown: How did the Swiss industry change during the first half of the twentieth century?

Tate Twinam: At the end of the Second World War, Switzerland was in a great position to exert its dominance over the world market. It already controlled half of that world market and many of its competitors – i.e., France, Germany – had been devastated by World War II, likewise with the UK.

So exports from Switzerland increased dramatically through the 1950s and 1960s and the Swiss watch industry became the preeminent globally.

By the 1960s and 1970s, the Swiss production model had changed from the 1800s. You had more medium-sized firms, and a few large mega-firms, such as Rolex and Omega. But for the most part, it was still generally concentrated in small and medium enterprises of, say, on average 55 workers per establishment. And there are around 1600 watchmaking enterprises in Switzerland at this time.

The Swiss have been partly inspired by the Americans to engage in more mechanization with larger enterprises. But there was push back along several lines. Many of the watchmaking firms were family owned and the family wanted to keep them in the family. And this meant smaller establishments generally resisting being absorbed into larger enterprises.

Chad Bown: What was the Swiss government's industrial policy during this period? What did it do to keep these watchmaking companies both small and located in these rural areas in the Jura mountains?

Tate Twinam: The Swiss government had an interest in keeping the watch industry relatively decentralized and spread out throughout the Jura mountains. The watch industry represented a substantial component of these local economies, and so there was a concern that the centralization of these establishments in big firms in large cities would lead to economic decline and political instability in these more rural areas.

There was also a concern that a large amount of concentration of industrial workers in big cities would increase the power of trade unions, and this would naturally lead to communism.

The Swiss federal government supported the watchmaking groups through the formation of a cartel to prevent too much centralization and too much competition, and also to prevent too much outsourcing of production of watch components abroad. There was a big interest in keeping the production of watch components within Switzerland to avoid economic decline in these various regions.

The government's actions and the actions of the watchmaking cartel did help preserve the small and medium enterprise character of the industry and allowed lots of family-run firms to thrive. This, for the time, helped the political and economic stability of these rural areas and prevented excessive amount of trade union activity. It also generated a class of family capitalists who were invested in the system.



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The problem with all of this being that it left these rural areas overly exposed to this one particular industry and with a general lack of economic diversification. This, it turns out, would make them extremely vulnerable to a large competition shock in the future.

Chad Bown: So that is the state of the Swiss watchmaking industry by the 1960s and early 1970s. Let's turn to the Swiss watches themselves. At this time, what is happening to the prices and quality of Swiss watches?

Tate Twinam: The way to think about watches during this time period is they were expensive consumer durables, so not something that you would buy every day. You could imagine buying something like a Rolex Submariner for on the order of \$4,000 in today's dollars.

At the end of the day, these are very tiny components that have to be manufactured on a very micro scale. And if you want the watch to do anything more complicated – i.e., to act as a stopwatch, keep track of the date and have an alarm – this would add layers and components that have to be put together on an extremely micro scale. And even a very high-end watch is going to lose accuracy on a daily basis, on the order of two to three seconds a day. A lower cost mechanical watch that still costs perhaps over \$100 might lose as much as 30 seconds of accuracy a day.

If there were a way to keep more accurate track of time and you can do so at a fraction of the cost, there was going to be a market for that.

Chad Bown: What was the big technology shock for the watch industry?

Tate Twinam: The big technology shock to this field was the invention of the quartz watch movement in the 1960s. The quartz watch movement takes advantage of the quartz crystal's property that it will oscillate with a certain frequency if subjected to an electric current. And this frequency can be used to keep track of time far more accurately than a mechanical watch. A quartz watch movement just requires this crystal, and this electricity, and it can be produced at a fraction of the cost of even a low-quality mechanical movement.

Chad Bown: Who was able to adopt this new quartz technology?

Tate Twinam: A number of researchers at Swiss watch companies, but also Japanese watch companies, had looked into various ways of producing electronic watches. Both had settled on quartz as being a valuable alternative.

A number of companies in Japan that had already been producing mechanical watches – e.g., Citizen, Seiko, and Orient – decided to embrace this new quartz technology. But they were able to do so at a mass scale because they had already created much more centralized production operations (for their mechanical watches) than the Swiss firms had.



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In 1969, Seiko released the Astron. This was the first production quartz wristwatch. It was not a budget watch. It was worth about the price of a new car at the time, but due to their more centralized manufacturing system, they were able to scale up production of quartz watches very quickly.

Prices for quartz watches dropped dramatically. And by the mid-1970s, one could be had for an order of magnitude less than a comparable Swiss watch.

Chad Bown: Quartz watchmakers in Japan especially figured out how to manufacture these new watches at low cost, and they could sell them at much lower prices than the highly crafted mechanical Swiss watches.

How did the other attributes of the quartz watch compare with those mechanical watches?

Tate Twinam: The quartz's movements were very robust to shocks, things like that. It was very easy to waterproof them. They relied on a battery, which had to be changed every couple of years, but aside from that they were much more robust than your typical mechanical watch.

The quartz watch movement was also easily adapted to include other functions. The advent of liquid crystal displays and LEDs allowed for screens that could illustrate all sorts of different information – e.g., alarm settings, date functions, chronograph, and stopwatch functions. This was now possible with these quartz movements, and these sorts of complications could be added at very minimal cost, whereas adding similar types of complications to mechanical watches increased the cost greatly. Semiconductors basically allowed for these watches to mimic the many possible functions of very high-end Swiss watches but at a fraction of the cost.

Chad Bown: I remember as a kid when I got my first watch, this was the early 1980s, I think it was a Casio digital. It had an alarm and it also played show tunes, and it had songs from “Hello Dolly” and “The Music Man” on it. It was my Christmas present. The upshot is once we moved beyond these mechanical watches, this 1970s technology was pretty exciting.

OK. What happened in Switzerland?

Tate Twinam: The quartz revolution had basically turned watches into a low-cost commodity. And this was a disaster in Switzerland. In Switzerland, this is referred to as “The Quartz Crisis.” Swiss firms were very ill adapted to respond to this big technological shock.

The Swiss industry, being still highly decentralized, did not have the ability to rapidly mass manufacture these new watches. It was also the case that these new watches were not very profitable to sell on account of their widespread competition from lower-wage nations. There was essentially no way for Switzerland to compete on a price basis with Japan and Hong Kong.



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Watch exports from Switzerland to the rest of the world peaked in 1974. A decade later they had fallen by half. At the same time, exports of watches to the rest of the world from Japan had skyrocketed to close to 140 million units, versus the 20 to 30 million units in the mid-1970s.

Chad Bown: How did the Swiss industry respond?

Tate Twinam: The immediate impact on the Swiss watch industry was fairly devastating. About half of the Swiss establishments closed and employment fell dramatically.

The consolidation that the watch industry had avoided in previous decades finally had to happen. Some of the largest watchmaking companies – like Omega and Longines – came together under the umbrella of the Swatch Group.

The way they avoided the problems that plagued the industry is that they tried to sell the Swatch as a premium product. So they were essentially selling a low-cost quartz watch, but at a premium because you could call it a Swiss watch.

Chad Bown: How did the Swiss companies change their business model to pivot toward this premium product?

Tate Twinam: For the Swiss companies that were going to adapt and survive this crisis, the business model had to change dramatically. They were basically selling a functionally obsolete product now, and they could not compete on cost, and they could not compete on accuracy.

So in order to have a mechanical watch still deliver something of value, it had to represent something else. The move for these brands was to pivot to upmarket. Rather than representing a tool, a watch is now going to represent status.

For example, the Rolex Day Date – this is not a watch you buy if you just want a good, accurate watch. It's a watch you buy because it's the President's watch ever since Lyndon Johnson wore it, and it's made of solid gold. You've seen it on plenty of movie stars and plenty of celebrities.

You don't buy an Omega Speedmaster because you want a nice watch. You buy it because it was the first watch worn on the moon.

This sort of thing is common to many industries affected by trade shocks. Oftentimes facing lower cost competitors from abroad, the manufacturing functions of a firm will be outsourced to lower cost countries whereas the firms will retain, in higher wage countries, things like marketing, operations, and distribution and so on.

Chad Bown: How did the Swiss government change its policy to try to keep some of these watch-making companies competitive?



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Tate Twinam: Historically, a watch made in Switzerland would be just that – it would be made in Switzerland. However, eventually the rules were changed by the government to allow for a broader definition of “Swiss made.” Swiss made now means if 60 percent of the value associated with the watch is produced in Switzerland, and if the final assembly of the watch occurs in Switzerland, then that watch can be called Swiss made.

However, productions of things like bracelets, dials, crystals, and so on can occur in many different countries, and these components can just be imported into Switzerland.

Chad Bown: The Swiss government is now allowing imports of components, that’s the first thing. Second, Switzerland now has this massive decrease in demand for its watches globally because of the new competition from Japan and Hong Kong of these new quartz watches.

How did all of that impact the workers in the Swiss watchmaking industry?

Tate Twinam: In the short run, employment in the industry dropped dramatically – on the order of 60,000 people, or roughly two thirds. The shift towards more centralized production and the increase in imports of watch components from abroad led to a substantial change in the employment makeup of the industry. In Switzerland, industrial workers fell by half and home workers fell by 80 percent.

Most of the managerial workforce was retained. They were now responsible for marketing, branding, sales, and distribution. And all of these core functions needed to remain in Switzerland.

Nominal wage growth in the Swiss watch industry had previously tracked nominal wage growth across all manufacturing sectors in Switzerland. This decoupled after the onset of the crisis and wages declined in the industry.

Chad Bown: This is such an incredible story. But all of this is really just the background for your research, which is to look at the impact on those Swiss workers in the 1970s. Tens of thousands of people lost their jobs very quickly. This was a pretty concentrated shock geographically, in the Jura region of Switzerland.

What happened to all of those workers?

Tate Twinam: Many of them just packed up and left. There was an unprecedented decline in population across these cities and towns specializing in watchmaking. They, on average, lost around 8 percent of their populations between 1970 and 1980.

And a decline that large had not been seen in the previous hundred years. So there's pretty clear evidence that these workers migrated en masse. The migration response is usually pretty negligible. And so the big question here is why is the Swiss case so different?



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Chad Bown: Why was the Swiss case so different? In other contexts, workers often don't leave their communities when their jobs are suddenly lost, due to a new technology or because of trade.

For the example of Swiss watch workers, what potential explanations do you look into?

Tate Twinam: There are many possible explanations for why this case might have been different. The two that I focus on most closely are (1) the characteristics of the workforce (Are these the kinds of people that we would expect to be able to easily move?) And also (2) the characteristics of these cities themselves (How many other opportunities they might present besides watchmaking?) If this is the only game in town, then you can see why it might make a lot more sense to just leave town.

Chad Bown: Let's start with the workforce. What are some of the characteristics of these Swiss watch workers that might have made it easier for them to move to new cities and new jobs?

Tate Twinam: Homeownership is a big attachment to place. Homeowners are much less likely to move. It's also the case that homeowners in an area that is declining in population have a much more difficult time moving. If you own a home in a city and a bunch of people are moving out, that's a big negative demand shock for housing, but because housing is durable the impact of that negative demand shock is going to go 100 percent through the price channel. Those houses aren't going to disappear. They're just going to fall dramatically in price. This can have the effect of locking people in place. But Switzerland doesn't have a lot of homeowners. The homeownership rate in Switzerland is quite low.

Things like age can affect the cost of moving. Older folks are going to have possibly more established networks and higher mobility costs. Younger folks have a much easier time adapting to a new environment. A large fraction of the Swiss watchmaking workforce were younger people, and they were substantially more likely to relocate.

Education also matters. If you're more educated, you might have an easier time relocating for better employment prospects, and that is also the case for the Swiss watchmaking workforce.

Chad Bown: The Swiss workers in the watchmaking industry just had a lot of characteristics that would make it easier for them to move.

You also said that you looked at the industrial concentration of these watchmaking cities and towns. How diversified were they? Were there jobs available in other manufacturing sectors nearby? What did you find?

Tate Twinam: Looking at concentration within the industrial sector, what we see is that in these watchmaking cantons, particularly Jura and Neuchâtel, the main watchmaking cantons, levels of concentration in watchmaking specifically were extremely high.



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The cantons that specialized most in manufacturing and, in particular, watchmaking were the ones that ended up losing the most workers over the course of this crisis.

If you're going to survive a trade shock like this, you need there to be other opportunities, other sectors to absorb these displaced workers. Many of these cities and towns had initially grown in a way that was centered around watchmaking, and if that was still the major industrial sector and the alternative was becoming a dairy farmer, there might not be much appeal to remaining in these cities and towns.

Chad Bown: Swiss watch workers also moved because there were few other local opportunities.

Now, stepping back from your research, there are other potential explanations for why the Swiss quartz crisis was just different from some other trade shocks that researchers have studied, where they found that workers didn't move. Can you talk us through some of those differences.

Tate Twinam: The Quartz Crisis is an unusual one and it differs markedly from some of the trade shocks that have been most talked about. If you think about something like the "China shock" – there, we get a big rise in imports to the US from China. This is going to hurt a lot of US companies that are now facing more competition, but there are two ways that it's also going to help a lot of US companies.

One, some of these US companies might be using intermediate inputs that they can now source more cheaply from China. They're going to become more efficient, more profitable. Two, there's also going to be firms that now have a much bigger export market due to a decline in Chinese trade barriers.

The firms that benefit from this rise in trade with China can now potentially absorb workers who have been laid off from other firms that suffered from import competition.

In Switzerland, there was none of that. The Quartz Crisis did not create any opportunities. It only created losers, basically. Given the lack of existing alternative opportunities and the fact that the Quartz Crisis did not generate any new opportunities for those workers who were displaced from watchmaking, there was basically no choice but to leave. And that's exactly what they did.

Chad Bown: From the perspective of the workers, it is important for policymakers to know whether they are confronting something like a China shock or a Swiss quartz shock. Knowing that helps policymakers identify the best way to assist workers. Are there local opportunities, if the workers can just be retrained to take up a new job? Or are there no local opportunities, so what workers really need is mobility assistance to get them out of their mortgage and into a new city where there will be new opportunities?

Tate, as my last question for you, I wanted to go back to Switzerland's earlier industrial policy of the mid-20th century that seemed designed to keep these manufacturing companies small and rural. Are there lessons to be learned from the Quartz Crisis for those policies?



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Tate Twinam: Taking a longer view, knowing what the response will be to something like the Quartz Crisis can tell us what kind of policies governments should be pursuing in terms of promoting industrial diversification and resilience. Historically, policies in Switzerland were used to promote a decentralized, small scale watchmaking industry in these rural areas that didn't have much else going on. In the short run, this was great because it provided manufacturing employment. In the long run, it created a vulnerability because there was no industrial diversification to fall back on if watchmaking fell through. I think an upshot of my results here is that economic diversity is strength.

Chad Bown: Tate, thank you very much.

Tate Twinam: Thank you for having me.

GOODBYE FOR NOW

Chad Bown: And that is all for *Trade Talks*.

A huge thanks to Tate Twinam at the College of William & Mary. Do check out Tate's new research paper titled "Trade competition and migration: Evidence from the quartz crisis." I will post a link to his article, recently published in the *Journal of International Economics*, on the episode page of the *Trade Talks* website.

And by the way, if any of those Swiss watch companies that still exist are looking to sponsor a trade nerd podcast – I have had my eye on one of those divers watches from Jaeger-LeCoultre, or maybe a Vacheron Constantin.

Thanks to Melina Kolb, our supervising producer. Thanks to Sarah Tew, on digital. As always, thanks to Collin Warren, our audio guy.

Do follow us on Twitter or Mastodon, we're on @Trade__Talks. That's not one but two underscores, @Trade__Talks.

<insert super funny double underscore joke here>. ■

Read more...

Tate Twinam. 2022. "[Trade competition and migration: Evidence from the quartz crisis](#)," *Journal of International Economics* 138: 103653.