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Current Issues in Property and Casualty

Swiss Asbestos Cases Highlight Tail Risk Health Costs May Spike Across Europe Well After Bans

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Switzerland's rising caseload of asbestos victims may be instructive for insurers. Facing rising medical (health) and pension costs from asbestos-related diseases, Switzerland became one of the early adopters of an international ban of the material throughout the European Union (EU). Switzerland agreed to a ban in 1989, while an official EU ban didn't become effective until a July 26, 1999, directive was put in place. Yet despite ending the industrial use of asbestos, Switzerland is still paying the price: Victims of its related diseases typically do not show symptoms until 20 to 50 years after exposure, representing significant tail risk. Overall costs from diseases could total more than CHF1 billion in Switzerland alone, burdening state insurance funds—and perhaps corporate balance sheets—for years to come.

The country's disease-related case load will likely peak later this decade, and because of Switzerland's early banning of asbestos, the experience there may offer some perspective on what may transpire in countries slower to ban asbestos. Costs in Switzerland have mounted: From 1984 to 2009 alone, insurance payments for asbestos-related cases totaled CHF641 million; 75% of the costs are due to payments to survivors' pensions, according to Suva, the state accident and disease insurance fund that handles occupational-related health claims. The overall cost in 2009 reached CHF54 million (down from 60 million in 2007), with an average overall cost per victim of more than CHF300'000 in the past decade.¹

While the asbestos burden for Switzerland has largely fallen to the state insurance fund in the form of medical (health) and pension benefits, how other EU jurisdictions will handle this problem is difficult to predict. Many variables, including legal, economic, and social factors, will affect not only the way asbestos costs are calculated, but also who the responsible payors ultimately become. We hope the Switzerland example can be educational and instructive in this regard.

Despite dangers, asbestos still in use

Even though most European nations have banned asbestos, the health and pension costs won't peak for many countries until the 2030s or later. Even though bans have recently been put in place, several European countries (as displayed in Figure 1) continue to see asbestos consumption.

Figure 1:
European Union Countries to Ban Asbestos
(consumption in metric tons)

Country	Year of Complete Asbestos Ban	Documented Consumption Post-Asbestos Ban	Documented Consumption 2000-2007**
Poland	1997	6,839	1,452
Spain	2001	2,521	29,382
Yugoslavia*	2001	12,770	19,890
Czech Republic/Slovakia	2004	1	10,395
Hungary	2004	480	6,959
Portugal	2004	356	16,648
Romania	2004	12,351	73,420
Total		35,318	158,146

* Post-1995, Yugoslavia is made up of Croatia, Macedonia, Serbia, Slovenia, Bosnia, and Herzegovina

** Documented consumption rates only available through year-end 2007

Continued mining of asbestos worldwide complicates matters further, as asbestos production is thriving in some regions. In 2009 alone, approximately 2.1 million tons of asbestos was mined and produced worldwide. The largest producers include Russia (1.0 million tons), China (380,000 tons), Brazil (288,000 tons), Kazakhstan (230,000 tons), and Canada (150,000 tons).² The World Health Organization says that 125 million people still encounter asbestos in the workplace, and the United Nations' International Labor Organization estimates that 100,000 workers die each year from asbestos-related diseases.³ The global asbestos phenomenon leaves European multinational corporations vulnerable to future claims from countries in which they do business.

Switzerland as a model

While it's difficult to estimate overall costs in Europe, countries that consumed large quantities and have banned the material can serve as a model for predicting overall death rates.

Switzerland can help insurers predict claim activity in other countries because it has health data on its workers going back to 1918 and for asbestos-related cases since 1939. As of 2009, 1,389 employees had died from asbestos-related diseases in Switzerland.⁴ Suva found high concentrations of disease from workers in construction and construction supply businesses, such as companies specializing in renovations and demolition work. Other industries that used the product include car manufacturing and electronics.

While Suva only accounts for workers' cases in Switzerland, the agency's data provides a clear view of the severity of the problem with asbestos-related diseases. Secondary cases, where victims become exposed through contact with asbestos from workers or by working in contaminated buildings, are another threat.

Switzerland started consuming significant quantities of asbestos in the early 20th century, with use rising steadily until it peaked in the 1970s at an average of 18,000 metric tons per year. Consumption hit a high of 23,000 metric tons in 1978.⁵ The average per-year rate dropped to 8,025 metric tons in the 1980s as Switzerland gradually banned the substance late in that decade, before its complete prohibition. Yet the damage was done: Switzerland had consumed 522,000 metric tons all told over almost a century of use.⁶

The first asbestos-related diseases recognized by Suva date back to the 1930s, when the agency recorded victims with asbestosis, a respiratory disease in which the lungs are damaged, inflamed, and scarred from breathing in asbestos fibers and dust. The condition is caused by intense and prolonged exposure to asbestos over several years.

In recent decades, mesothelioma, a cancer that develops in the lining of the lungs, has become the most common condition among these workers, despite the disease's rarity in the rest of the population. The disease outcomes in Switzerland highlight both the severe nature of the injuries and the latency impact to those held responsible to pay. Other asbestos-related diseases include pleural plaques—a scarring of the lining of the lungs—and lung and larynx cancer. The rising incidence of asbestos-related cases over the years has finally led to several nations agreeing to ban the use of this deadly material.

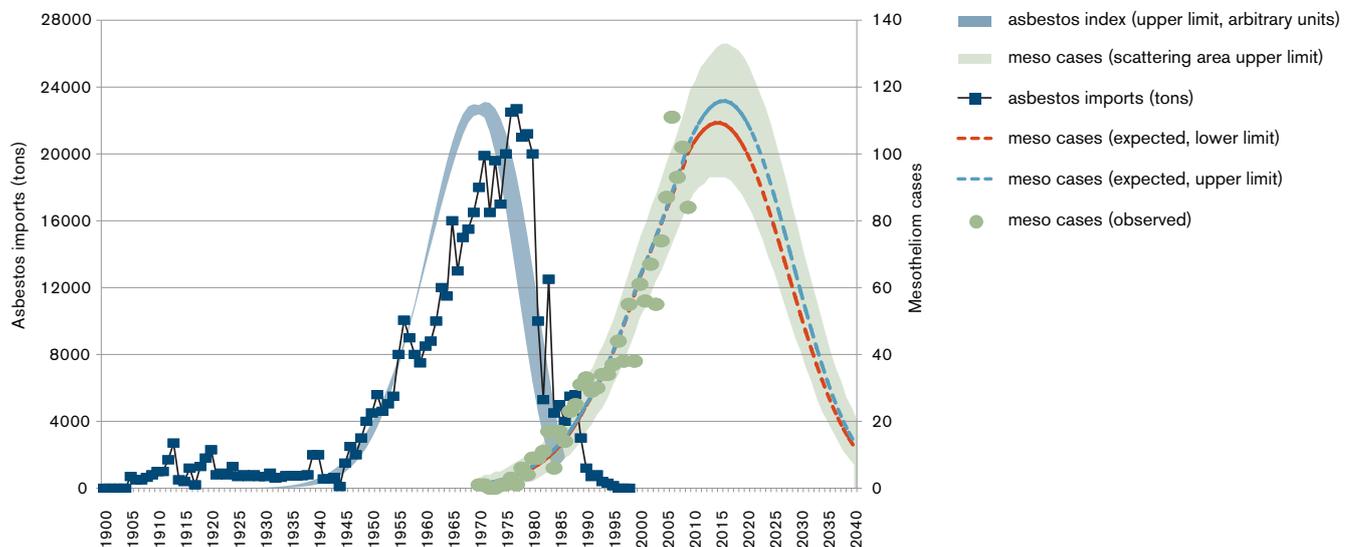
Because of the latency effect of diseases appearing in victims and the fact that Switzerland was one of the first countries to ban the use of asbestos, Switzerland could likely be one of the first countries to see a peak in cases. The most likely period of latency is 45 years, with a standard deviation of 10 years, according to Suva predictions.⁷

Mesothelioma as an indicator

Mesothelioma has accounted for the bulk of health- and medical-related costs in Switzerland, thus monitoring these cases can give a reasonable picture of tail risk. Costs related to mesothelioma alone totaled CHF556 million (of the total CHF641 million) for the period 1984 to 2009; accordingly, cost per case during this decade exceed CHF450'000.⁸

To be sure, just estimating the number of mesothelioma cases and their costs in the future is a difficult endeavor. How many more cases will occur? The factors influencing the incidence include how many fibers infiltrated workers' lungs, the individual risk of suffering the disease, and how many years of latency should be expected. For mesothelioma, the risk can be determined through observation: There's a direct relationship between exposure to asbestos fibers and mesothelioma incidence, even for very small doses.⁹

Figure 2:
Asbestos Consumption and Forecasts of Mesothelioma Cases



Source: Stefan Scholz. "Occupational Diseases" ¹⁰

The disease started appearing in the 1970s, when 20 cases were reported. This shows the latency effect of asbestos: Suva started tracking asbestos workers in 1939, with mesothelioma showing up about 30 to 40 years later. There were 160 cases in the 1980s, 370 in the 1990s, and almost 800 in the 2000s. The rapid rise of mesothelioma cases tracked the rise in consumption 30 to 40 years earlier.

The Suva model uses this observed data, combined with birth years of patients, their respective life expectancy, and estimated fiber exposure, to determine the exact time of latency. Combining this with census data and data concerning the history of the insurance portfolio, Suva estimates annual mesothelioma cases to peak in 2016, at 115 cases. The calculations are based on the number of years of employment, the exposure during employment, the risk of disease after exposure, and the probability of survival—basically those who live long enough to die from the disease. The age of the worker at first exposure is as important as life expectancy. The insurance fund's model projects an average rate of 113 cases per year this decade, falling to 90 in the 2020s, 36 in the 2030s, and nine in the 2040s. The significant decrease after the 2020s assumes no further exposures occur. Suva predicts that there will ultimately be 3,500 to 4,500 mesothelioma cases in Switzerland. Estimations are updated on a regular basis by Suva, whenever latest data are available.

Disease rates to persist

To be sure, EU nations (both state-run funds and insurance organizations) should examine closely the ramifications of asbestos consumption, both past and present. Switzerland provides an instructive example for other EU nations potentially facing similar issues. Diseases claiming exposure to asbestos will impact nations for decades, including the unknown of how many will die from secondary exposure. Getting a handle on potential costs will be imperative, as shifting political and legal climates might also transfer some of the expense to insurers. At the very minimum, insurers must plan to account for increasing disease rates. A better idea of what awaits down the road will help insurers best prepare for asbestos-related health problems likely to persist well into the middle of this century.

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Once Embraced, Asbestos Now Showing Its Deadly Side

The term asbestos is used to describe a set of six silicate minerals that occur naturally. The silicates are thin, fibrous crystals. The ancient Greeks named the material "asbestinon," meaning "unquenchable" or "inextinguishable." Use of asbestos became widespread during the Industrial Revolution. In the early 20th century, Austrian Ludwig Hatschek patented a process for combining asbestos fibers with cement. By the mid 20th century, asbestos was commonly used in commercial products such as insulation, fireproofing, textiles, spackling and patching compounds, gaskets, tiles, wallboard, siding, and roofing.

The potential sources of exposure to asbestos fibers are widespread, though the greatest come generally from occupational workers. People at risk include those who work with asbestos-containing products in aircraft, ships, and automobile brakes. Also at risk are asbestos-abatement or building-demolition workers, miners and millers, textile workers, and transport workers. Construction workers may be exposed to asbestos materials, as well as firefighters and rescue personnel who are exposed to heavily damaged asbestos-containing materials in the course of rescue operations.

Today, asbestos has been linked to several diseases of the lung. Mesothelioma, a cancer that develops in the lining of the lungs, is the most common and lethal disease. The cancer generally takes 20 to 50 years to appear after exposure. Aggressive mesothelioma tumors quickly metastasize and spread to other parts of the body. Proper treatment can often slow down the disease and improve a patient's outcome. Yet there is no cure for the disease at this time. Lung cancer and asbestosis, a respiratory disease in which the lungs are damaged, inflamed, and scarred, also rank high as the most common pathologies.

- 1 Scholz, Stefan. Occupational diseases. UVG Accident Statistics 2003-2007, pp. 63-66. Suva.
- 2 U.S. Geological Survey. Mineral industry surveys (July 2009), Mineral commodity summaries (January 2011).
- 3 <http://www.charlotteobserver.com/2010/07/21/1574007/lobbyists-push-using-asbestos.html> [Link does not work. Need citation]
- 4 Scholz, *ibid.*
- 5 Scholz, *ibid.*
- 6 Scholz, *ibid.*
- 7 Scholz, *ibid.*
- 8 Scholz, *ibid.*
- 9 Scholz, *ibid.*
- 10 Scholz, *ibid.*, p. 65.

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