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The Emerging Market Adviser

Overview: *The Iceman Goeth*

The ice trade was a well-respected industry at the turn of the 20th century. Its genesis coincided with the onset of the Industrial Revolution when much of the population began moving into urban settings. As cities grew, food preservation became an issue. Fresh meat and produce needed to be preserved in order to prevent spoilage and disease. Advances in transportation mitigated the problem by reducing delivery time for farm products. Railroads and steam ships brought fresh produce and fish to large city markets. They delivered live cattle to cities, such as New York, where they were herded into meat packing districts for slaughter and processing. Still, chilling the meat, fruits and greens would extend its shelf life. In the early 1800's, a young Bostonian, named Frederic Tudor, began harvesting lake ice and storing it in specially-insulated houses to preserve the frozen water into the summer season. Soon, New England pond ice was being delivered to the major cities across the U.S., and even into the Caribbean. The Norwegians followed suit and began doing the same in Europe. By the end of the 19th century, the ice trade was a stalwart of the U.S. economy, employing more than 90,000 workers. This was in a country that had a fifth of its current population. There were ice cutters, ice merchants and the ubiquitous iceman. These burly men would drive their horse-drawn wagons throughout the city, delivering heavy frozen blocks so that they could chill iceboxes. The ice trade was a respected profession, making fortunes for many individuals and providing steady employment for many more. It boosted international trade by allowing merchants to ship chilled food products across long distances. It permitted Argentina, Uruguay and Brazil to ship beef across the Atlantic and sell it in London food stalls. The Chicago beef processing industry flourished, primarily due to advent of the ice trade.

However, as the ice industry was booming, scientific advances in thermodynamics and kinetics were unlocking the secrets of mechanical refrigeration. The constant relationship between gas pressure and volume led to techniques that allowed engineers to manipulate temperature. By the start of World War I, military food supplies were being rushed to the front in chilled ship holds and railroad cars. This removed the need for heavy ice blocks. During the post-war economic boom, appliance companies rolled out mechanical refrigerators and ice-making machines that eliminated the need for pond ice. Almost overnight, the ice industry disappeared. Relegated to daguerreotypes and a reference in Eugene O'Neill's play, it became little more than a historical footnote. The 90,000 displaced workers were absorbed into the labor force, or became part of the frictional unemployment pool often referred to by economists. The same is about to happen to the manufacturing sector. The advent of robotics and artificial intelligence will soon allow factory workers to join the ranks of the iceman. Many pundits and commentators argue that this presages the start of global class warfare. It will widen the gap between the rich and the poor, and it will lead to social chaos.

Actually, the global manufacturing labor pool has been on the decline for some time. Less than 50 years ago, manufacturing jobs accounted for a quarter of the U.S. workforce. Today, it is less than 10%. The same trend is happening around the world. Advances in mechanization and greater precision are reducing the need for human labor. The endless rows of Chinese factory workers hunched over electronic circuit boards are becoming a distant memory. This does not mean that humans will be taken out of the productive process. More people will be needed to design, maintain and update the robots that will soon dominate the factory floor. Hence, there will be more demand for higher skilled, and higher compensated, engineers and software designers. In other words, it will increase the demand for a higher educated workforce. A visual illustration of this process is seen in the endless row of derelict factories and warehouses that lined the west side of Manhattan, which are now home to the design lofts that are transforming the tech industry. Of course, there will be sad stories along the way, as some individuals fall into the void, euphemistically known as frictional unemployment. That is where social safety nets and worker education programs come into play. They can help sustain the displaced laborers as they reinvent themselves. Therefore, don't weep for the iceman. He cometh and goeth, but the person never goes away.