

Globalization on Its Head

From Mauldin Economics' newsletter, 8 August 2016

If we had to describe the last 50 years of economic history in one word, *globalization* would be high on the list. Thousands of small, independent economies around the world fused into one nearly seamless whole. The things we use every day – food, clothing, vehicles, furniture, electronic devices, even the materials that compose our homes – now come from far and wide. We don't even notice. International trade over vast distances is now so normal that we forget it wasn't always so.

Here's how far globalization has gone: In cities and towns all over the United States, weekend farmers markets have sprung up, selling fruits and vegetables whose main attraction is that they are *local*. Eating food grown in your own region is now exotic and unusual. Our global diet served up at conventional grocery stores means our bodies and brains have been globalized, too.

Globalization ramped up slowly for a century or so before entering a new phase in the 1960s. I was born in 1964, so the explosion of the global economy roughly spans my lifetime. Mine is the first globalized generation. But if I reach 100, I suspect I will see children of a de-globalized generation.

That's my theory: We are going full circle.

Humanity spent the last 50 years globalizing. Now, thanks to certain technologies, that whole process is going in reverse. I think historians will mark the 2008 financial crisis as the turning point: Peak Globalization.

I don't say this because I *want* a de-globalized world. What any of us want or don't want is irrelevant. I believe the transition will happen whether any of us want it or not.

It will not happen in a linear fashion, though. The process that brought us to this point had starts, stops, and slowdowns. Reverse globalization will have ups and downs, too, but a new set of technologies will keep pushing it forward.

I'll tell you about those technologies in a minute. First, let's review what brought us to this point.

Low-Tech Boxes

Behold, the box that changed the world. Blessed are those who purchase its contents.

Thousands of steel shipping containers like this one cross the seas daily, carrying the merchandise you see in Walmart and Home Depot. They are the red blood cells of the globalized consumer economy. It would not long survive without them.

Back in the ancient Pre-Container Era, loading and unloading cargo ships was a time-consuming, labor-intensive process. Swarms of dockworkers labored around the clock carrying man-sized loads on and off ships. At the destination seaport, they would disperse goods to railroad boxcars and perhaps later onto trucks before those goods reached end users. The process was slow and inefficient, though it had the advantage of providing many jobs.

Those jobs started disappearing in the 1960s, thanks largely to Malcom McLean.

McLean, owner of a North Carolina trucking firm, had the idea of separating a truck's cargo space from the wheels and chassis, then loading the boxes onto ships. He converted two World War II tanker ships for this purpose and in 1956 took his first containerized cargo from Newark to Houston.

The idea itself wasn't new. The U.S. Army had shipped supplies for the Korea conflict in similar containers, but McLean saw containers' civilian potential. In 1960 he renamed his company Sea-Land Service Inc. and began refitting docks with the specialized cranes we now see in every port. Dockworker unions were not pleased, to say the least, but they couldn't slow down progress.

Seeing the value of standardization, McLean licensed his patents royalty-free to competitors worldwide. By the end of the 1960s container ships were crossing every ocean. Sea-Land had a thriving business taking military supplies from the US to Vietnam.

Would world trade have grown as it did without containers and container ships? Certainly not. Reduced shipping time and labor savings gave emerging-market countries a chance to compete in high-volume, low-margin products. These low-tech boxes really did change the world economy. Globalization would look quite different without them.

Big Ole Jet Airliner

Engineers envisioned jet engines in the 1920s, but working models didn't appear until the tail end of World War II. The world's first production commercial jetliner, the de Havilland Comet, took off in 1949. Pan American World Airways began regular Boeing 707 service in 1956 – the same year McLean's first container ships sailed.

Jet planes didn't just fly faster; their higher cruising altitude made them more fuel-efficient and longer-range. Prior to the 707, you could not fly nonstop from the US to Japan, or from Europe to the US West Coast.

Think how valuable nonstop transcontinental flight is to business travelers – like John Mauldin, for instance. He can board a plane in Dallas, deliver a speech in London or Hong Kong, and be back home within three days. Such trips are tiring and stressful, but possible. They were impossible fifty years ago.

Now, multiply by millions of businesspeople traveling the globe to build alliances, make growth plans, and develop new products. Yes, they did all these things before jetliners existed, but they did them much faster afterward. The first wide-bodied 747 flights in 1970 brought travel costs down even further, opening the door for mass international tourism.

Just as important, the mere knowledge that they *could* reach the other side of the world so easily changed people’s thinking. They saw new possibilities and dreamed bigger dreams. Those dreams evolved into the millions of transoceanic trading relationships we now call globalization. Would it have happened in a propeller-driven world? Maybe – but it would look different.

Another key technology helped people *see* the other side of the world even if they couldn’t fly there. Communications satellites let broadcasters beam live television signals around the globe. The satellites emerged at about the same time as shipping containers and jetliners.

The Soviet Union launched Sputnik 1, the first artificial satellite, in 1957. All it did was emit pinging sounds, but progress followed quickly. In 1958 a US satellite called Project SCORE carried tape-recorded Christmas greetings from President Eisenhower to people around the world. Another US satellite, Syncom 3, was the first to achieve geostationary orbit and retransmit live signals. It enabled broadcast of the 1964 Tokyo Olympics to television viewers in the United States.

In one sense, this was nothing new. Americans had seen images from abroad before. Hollywood studios routinely filmed features in exotic locations. Newsreels had brought World War II to the home front. But the old reels conveyed events weeks or months in the past. Seeing events “live” was a quantum leap.

Just five years after Syncom 3 was launched, people around the world watched Neil Armstrong set foot on the moon. It was a seminal moment – and not only because humans had walked on the moon. For the first time, humanity watched history unfold *together*. This brought to people everywhere a profound change in perspective. “The world is watching” had been a figure of speech until then. Suddenly it was actually possible. If we could *see* globally, then it was reasonable to think we could live, work, play, and trade globally, too.

Doing all those things, whether globally or locally, costs money. A financial technology helped distribute capital around the world: the mutual fund. It didn’t go well at first. Problems in the Great Depression led to the Investment Company Act of 1940. The industry had better luck in the 1950s bull market, but was still relatively small.

In the 1960s Bernard Cornfeld popularized mutual funds via his ill-fated Investors Overseas Services, Ltd. The company would later collapse, but not before his thousands of door-to-door salespeople taught small investors how to participate in financial markets. By 1970 the US had almost 400 mutual funds with \$48 billion in combined assets. John Bogle launched the Vanguard Group and the first index funds in 1976.

Mutual funds grew even faster after 1978, when Congress added an obscure “section 401(k)” to the Internal Revenue Code. Benefits consultant Ted Benna saw that the provision allowed for a tax-advantaged retirement savings plan. Mutual funds were a natural fit with his 401(k) plan. Even better, they gave CFOs everywhere a way to get defined-benefit plan liabilities off the corporate balance sheet. They eagerly seized it.

Much of the cash flowing into mutual funds during this era found its way into multinational companies, who used it to develop new products for international distribution. It was more wind in the sails of globalization. The giant 1980s–1990s bull market both demonstrated and reinforced the worldwide economic growth wave.

What would our economy look like today if not for shipping containers, jetliners, satellites, and mutual funds? Would globalization have happened anyway? Probably, but it would not have looked the same.

When I say these innovations were critical, I don’t claim they were *sufficient*. All kinds of other events contributed, too: trade agreements, central bank actions, tax and regulatory policies, and more. They all went into the historical blender and gave us what we have now. Omit one key ingredient and the result might have been quite different.

Energy Untanked

Fifty years from now, what new technologies will have proven to be as critical as the ones we just reviewed? Which of today’s nascent innovations will be revolutionary?

We can only speculate – and John will do plenty of that in his forthcoming book. Meanwhile, I have four candidates to consider. The first one is renewable energy.

Solar, wind, and other non-fossil-fuel sources have become political footballs. They appear in debates about climate change, government subsidies, environmental regulation, and other touchy subjects. That’s unfortunate, because they aren’t inherently political. They are technologies we should judge on their own terms. Economically speaking, are they better alternatives or not?

“Better” is relative. Fossil fuels are the lowest-cost option in most of the US, in part because we’ve made a huge investment in their infrastructure. We have supertankers, port facilities, pipeline networks, railroads, storage farms, power lines, gasoline pumps, and so on. All of them

serve one purpose: moving fuel from the place where it is produced to the place where it is consumed.

This apparatus works surprisingly well, considering that it hasn't advanced a great deal in recent decades. It also points to the great weakness of fossil fuels: **We must move them in order to use them.** Transporting fuel to wherever it is needed (and keeping adequate amounts available at all times) is expensive and inefficient.

Now, think for a minute about the solar alternative. Today's technology lets you to put solar panels on your roof and power your home. You can install storage batteries to keep the lights and air conditioning on at night. Your solar panels can recharge the electric vehicle you drive to work and back.

All that is possible right now. If you care to spend the money, you can probably go completely off the grid without changing your lifestyle very much. That is especially true in the sunny southwestern states, Florida, and Hawaii. Few people quit the grid entirely because to do so is still expensive. That won't always be the case. Prices have been falling fast.

The equation is quite different in emerging-market nations near the equator. Decentralized, renewable energy sources are more cost-effective than fossil fuels right now in countries that don't already have a well-developed energy infrastructure. Much of Africa will never have an electric grid like ours because it will never need one.

A world economy in which we don't have to transport fossil fuels back and forth will look different. See all the red boxes and arrows on this Houston/Galveston map, via MarineTraffic.com? Those are oil, gas, and chemical tankers. The diamond-shaped ones are anchored, waiting their turn to load or unload. The map depicts globalization in action.

Get rid of fossil fuels and none of these ships will have to go anywhere. They won't consume fuel just to move fuel; they won't sink and make a mess; and they won't be terrorist targets. Our navy will not need to guard choke points like the Strait of Hormuz. OPEC will be irrelevant for most people.

That world is *possible* already, and it is getting increasingly *practical*. I believe a shift to renewables will happen even without government subsidies. In fact, I would like to see subsidies eliminated now. They do more to hold up progress than to encourage it.

Fossil fuels won't go away completely. They'll remain necessary in niche markets and applications. Nevertheless, I think the economic benefit of harvesting energy near the end user will grow more apparent every year. In time, energy will cease to be an international concern and become a purely local matter. That facet of globalization will just fade away. Cheap, abundant energy will be as normal as the corner gas station is now.

Plastic Doodads

As John noted in last week's letter, "[The Trouble with Trade](#)," until recently there were two categories of imported goods. Some were expensive, high-quality luxury products: sports cars, wine, fine cheeses, and chocolates. Others were cheap, low-quality products made mostly in developing countries. Japanese cars weren't a US status symbol in the 1960s or 1970s.

What do Americans think about imported goods now? We rarely think about them at all, even though we buy them every day. Globalization both raised the quality of foreign-made products and made them unremarkable.

Globalized manufacturing also had a dark side. Manufacturing jobs left the United States as companies moved production offshore. On the other end, gaining those jobs was a mixed blessing for developing countries. Millions of people emerged from deep poverty, but their cultures changed, and rampant, unregulated growth damaged the environment.

More importantly, all these new goods had to find their way from the factory to the buyer. Now, entire shiploads of containers stuffed with shrink-wrapped plastic doodads arrive in US ports every day. They have to be unloaded, sorted, and moved by truck or train to their destination. The logistics chains that do this are organizational miracles, but they consume valuable resources and time.

We wouldn't need this massive apparatus if it were cost-effective to produce finished goods in small quantities near the final buyer. 3-D printing technology is doing exactly that. Commercial-scale "additive manufacturing" uses a wide variety of materials to make both simple and complex objects.

Additive manufacturing's key advantage is its flexibility. The same equipment can make completely different products with just a software update and minor retooling. This capacity opens up a world of possibilities. Instead of specialized factories producing mass quantities of the same thing, local manufacturing centers can make only the quantity needed in the local area, as products or parts are needed.

Moreover, local manufacturing will enable much greater customization to fit local needs. Freed from a global process that forces them to sell monotonous, widely marketed goods, retail stores could use local manufacturers to produce exactly what local buyers want.

Will local manufacturing completely replace global supply chains? No, but it can still make a huge difference by reducing freight traffic. Consumers will have higher-quality goods at the same or lower prices, and the environment will stay cleaner.

Today's just-in-time logistics systems have already reduced inventory levels and contributed to broad deflationary trends. Localized manufacturing should accelerate this shift even further.

Instead of holding finished products in inventory, manufacturers will store raw materials: plastics, metals, minerals, wood, etc. Trade in finished goods will occur locally, in proximity to end users.

Virtual Airports

Communications technology was supposed to reduce the need for travel. Yet even with videoconferencing now widely available, globalized business professionals fly more than ever. Why?

One reason is that communications technology is still primitive. We can sit in front of a monitor across from another person in front of their monitor. We can see each other, hear each other, and view documents together. All this is wonderful, but it's still a far cry from face-to-face interaction.

Virtual reality and augmented reality technology promises to fill this gap. Right now, we can wear special devices and enter startlingly realistic fantasy worlds. The potential for entertainment and gaming is obvious. The suddenly and immensely popular Pokémon Go game is a form of augmented reality. People love it, but the more common VR/AR use may turn out to be routine business meetings.

Walk through any airport and the “road warriors” are easy to spot. They're veteran travelers like John, who jet between major world cities so they can... walk into a room and talk to people. They may spend more time going to and from meetings than they spend actually meeting. This is woefully inefficient.

With advanced VR/AR technology, people in different countries will be able to “meet” in a virtual conference room with the full sense of being physically together. Having access to subtle cues – facial expressions, tones of voice, sideways glances – will make these meetings seem almost real.

Something like the fabled Star Trek “holodeck” is decades away, but many road warriors would be happy to get 90% of the way there. Eliminating wasted travel time might easily double or triple their productivity.

VR/AR will let businesses operate efficiently without physical proximity to each other. The vast air transportation infrastructure, and all the energy and resources that go into it, will become less critical and will ultimately shrink. Meanwhile, workers and businesses will become more “present” to their local communities simply by virtue of spending more time at home.

Alaskan Bananas

Few sectors were more changed by globalization than agriculture. The US depends on low-wage, labor-intensive overseas farms for many important foods. Meanwhile, exports from our hyper-efficient grain producers feed millions of people in other countries.

As a result, consumers can now enjoy all kinds of non-native foods no matter where they live. If you are in Alaska and you like bananas, you can have them. The agricultural supply chain will grow them in Central America and bring them to your local store, for a price.

Bananas in Alaska are an extreme example, but the same process feeds practically all of us. Buy a hamburger anywhere in the United States and the lettuce on it likely comes from California. Why is this? Because areas of California have soil and weather perfectly suited to growing leafy vegetables. Bananas come from Central America for the same reason.

If we could re-create Central America indoors, Alaskans actually could grow their own bananas. To do this, they would need to regulate moisture levels, soil quality, temperature, and lighting at a cost that was competitive with bringing in foreign bananas.

The newest LED lighting technology brings this idea closer to reality. Scientists are learning how to deliver light at the intensity, frequency, and duration that optimizes growth. LED lights dramatically reduce the electricity required to do this. Paired with solar, wind, and other renewable energy sources, indoor banana farms are no longer hard to imagine – even in Alaska.

Carry that thought process a little further, and we can conceive of entire cities becoming self-sufficient for much of their fresh food. Produced locally in converted warehouses and vertical farms, the food would be truly fresh, too. Fruits and vegetables wouldn't spend days or weeks in transit between farm and city, nor would they need chemical pesticides and preservatives.

This won't work for everything we eat. Centralized production may still make sense for grains, meats, and some other foodstuffs. Regional production on land around cities will continue to increase, too. Nonetheless, when this technology reaches maturity, we won't move nearly as much food around the world. It will grow near the people who eat it. This change will likely be good for our health, but the economic consequences may be even greater.

Early in the Game

We've seen here that technology trends will nudge the world economy away from global integration and back toward local production and investment. Without container ships, jetliners, satellites, and mutual funds, globalization would have unfolded quite differently – and possibly not at all. Now, alternative energy sources, additive manufacturing, virtual and augmented reality communications, and sophisticated local food-production systems will take us back in the direction of regionalization and localization – and hopefully help to level the economic playing field for people worldwide.

Technology isn't the only factor, though. Much depends on central bank decisions, international trade agreements, electoral politics, and geopolitical factors.

That said, technological change is implacable. Useful innovations rarely disappear once they're invented. They can be suppressed or delayed but not eliminated. The globalized economy based on shipping stuff back and forth will make less and less sense as the technologies I've described continue to mature.

The political debate over manufacturing jobs is missing the point. Manufacturing is already coming back to the US, as are manufacturing jobs – but not in the numbers that once existed. Additive and robotic manufacturing technology will raise productivity far faster than humans can manage to do, and humans will be displaced.

Last week John quoted General Electric CEO Jeff Immelt saying that “wage arbitrage” is over. Robots do not care where you install them. They cost about the same and work at equal speed no matter where they are. Robotics will greatly reduce the incentive to make goods far from the end user simply to save on labor costs. The new incentive will be to produce in proximity to your customer. This will let you deliver faster and offer greater customization.

Technology is changing the foundational principles of globalization. That which loses its foundation eventually disappears – though its demise can take a long time. We are still very early in this megatrend.