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CIO Strategy Bulletin

Trade Wars Are Real Wars, a G2 Update

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SUMMARY

- New US trade restrictions on Chinese technology were expected after the bipartisan CHIPS and Science Act of 2022 signed into law by President Biden on August 9. But the extent of the export controls was startling and included dramatic restrictions on US persons working to assist China's tech industry. This follows a speech by Katherine Tai, the US Trade Representative, that denounced China's "state-directed industrial dominance policies" and expressed the necessity of defending US national security interests via this aggressive industrial policy.
- Commentary and the broadly negative market reaction suggest these US sanctions will not only deeply constrain Chinese semiconductor firms, but reshape and potentially disrupt global supply chains.
- By value, China consumes more semiconductors than it imports oil, receiving 74% of worldwide semi production in 2019. Leading publicly traded global semiconductor firms from the US, Japan and South Korea generated 27% of their revenues from China in 2022. At the same time, Taiwan fabricates 65% of the world's semiconductors and almost 90% of the most advanced chips.
- We see this act as a major new "Little Fire" (see our [Oct. 9 CIO Strategy Bulletin](#)), further adding to the list of compounding issues affecting markets. These include, among others, rapidly rising interest rates, OPEC's petroleum supply constraints, marked escalation of the war in Ukraine and a Federal Reserve pushing the US toward recession. While semiconductors are essential for the economy of the future, the news bodes especially poorly for the sector that has already experienced a 43% drop in share prices this year.

Trade Wars Are Real Wars

The August 9 passage of the CHIPS and Science Act of 2022 is a bold response to China's own "Made in China 2025" legislation passed in 2015. This is President Xi's plan to make China a "technological peer" of the United States by 2050. President Biden's bipartisan bill to subsidize the domestic semiconductor industry follows President Trump's imposition of a 25% tariff on \$50 billion of goods across 1,100 categories of Chinese products. Both were responses to China's insistence on technology transfers as a condition for foreign investment and theft of intellectual property. The legislation – and particularly the administration's trade restrictions – will completely reset the competitive environment with China and initiates a true and lasting technology trade war.

According to an extensive [Stimson research report](#) (8/16/22), "Semiconductors and China's Silicon Shield," "China's dependence on Taiwan has been called the island's 'silicon shield' against a Chinese attack." China can produce only 6% of its overall semiconductors for domestic consumption and exports, and makes none of the chips that power advanced technologies like Artificial Intelligence. Meanwhile, TSMC accounts for a disproportionate share of China's semiconductor imports and owns 10% of China's domestic production via its Shanghai and Nanjing factories.

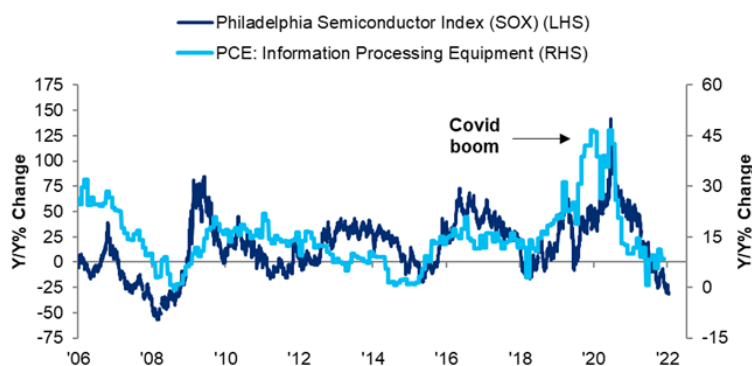
In contrast, US companies generate nearly half of global semiconductor revenues, but suffer from long supply chains and the ability of China to disrupt shipments easily should it choose to do so.

Now, if China is to achieve its ambition to produce the most advanced semiconductors, it will need to invent its own technologies to do so. The new export restrictions stop all Chinese purchases of advanced semiconductor equipment from US companies or their trading partners. It also severely limits support for and maintenance of Chinese semiconductor plants, exacerbating a severe shortage of technicians and engineers needed to expand its domestic chip production. All this underscores our G2 thesis, the accelerating bifurcation of Eastern and Western markets and the dis-integration of US/China economic ties.

This is not just an economic trade war. President Biden noted in his talk at Lockheed Martin's Javelin missile plant that each anti-tank missile used by Ukraine contains 200 semiconductor chips. The supercomputers used to design Chinese hypersonic missiles contain American-designed chips made by TSMC. And a review of American defense policies notes that foreign chips are a major vulnerability to US military production as systems like the F-35 Lightning II aircraft require thousands of advanced chips for each aircraft. The need to produce such chips in the US is funded, in part, by the new legislation for both supply chain and technology security reasons.

None of this is likely to directly impact China's ability to assemble existing consumer electronics products. At the same time, retaliatory action from China could come at a vulnerable moment for the US and world economy. The semiconductor industry is already suffering from falling consumer electronics purchases that were artificially elevated during the COVID lockdown period (see figure 1).

Figure 1: Philadelphia Semiconductor Index vs Real US Consumer Purchases of Information Processing Equipment



Source: Haver Analytics as of Oct. 13, 2022. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Past performance is no guarantee of future results. Real results may vary.

When the Chips Are Down

As we study the potential implications of these new US restrictions on Chinese use of high-end semiconductor technology, we see several substantial near-term risks and a long-run opportunity.

It is clear from early expert commentary and the broadly negative market reaction that sanctions will not only hurt Chinese semiconductor firms, but it is likely that global supply chains could face disruptions as these new rules take full effect.

The vast majority of chips China imports for domestic final use or as intermediate inputs are older generation technologies not covered by the new restrictions. That said, firms that service advanced chipmaking can charge higher margins for cutting-edge equipment and software, and there remains a great deal of uncertainty around how these rules will actually be enforced.

In the short term, global chip supply chains will likely face increased friction. For example, semiconductor firms have already begun pulling their US personnel from Chinese semiconductor fabrication plants to avoid running afoul of US regulations. We expect most of the equipment covered by the new regulations to be retooled and redeployed outside of China, perhaps even in the United States.

As US chipmakers navigate the changed regulatory landscape, they will seek out new non-Chinese customers, but this will be a slow process during a global economic downturn. As strategic competition builds, China will double down on its efforts to become a world leader in semiconductor production. The central government has already invested more than over \$150bn in the semiconductor sector, much more than the promised subsidies contained in the CHIPS Act. In the coming years and decades, a new tech race, paralleling the space race during the Cold War, will lead to advances in areas like quantum computing which will make even today's superior chips obsolete.

We ultimately foresee more than enough global demand for cutting-edge chips outside of China that equipment firms will find new homes for their businesses in coming years. In this cross-section of digitization and a G2 world, we expect to find investment opportunities on both sides of the competitive divide.

Quite simply, semiconductors are the “brains” of the modern economy. While the sector may face both a cyclical decline and disruption at the same time, there can hardly be future economic progress without the critical industry.

Rising Global Risks From New “Little Fires”

The drumbeat of new “Little Fires” (see our [Oct. 9 CIO Strategy Bulletin](#)) continues, but feels more ominous. Consider the following recent events:

- OPEC cut its oil production targets before restoring output to pre-COVID levels. A spokesman for the Biden administration said Saudi Arabia is “aligning itself with Russia.” There would be “consequences,” Biden said, without citing specifics.
- Russia attacked Ukrainian targets nationwide, bombing Kiev for the first time in months. It said all infrastructure targets in Ukraine were potential targets after Ukrainian-aligned forces severely damaged the bridge connecting Crimea to Russia. Security experts foresee further escalation of the conflict. The Russian attacks include greater use of Iranian armed drones. According to news reports, Russia is seeking to acquire as many as 2,400 Shahed-136s to sustain attacks on urban centers in Ukraine as a replacement for its reduced supply of ballistic and cruise missiles.
- China entered a wider lockdown period to suppress COVID – and presumably political dissent from COVID restrictions – ahead of its 20th Party Congress beginning this weekend.
- The Fed provided its policy views in the minutes of its September 20-21 meeting. A “few” FOMC participants noted the possibility that the economy might slow more than desired, “heightened by factors beyond the Committee's actions, including the tightening of monetary policy stances abroad and the weakening global economic outlook.” However, “many” participants emphasized that “the cost of taking too little action to bring down inflation likely outweighed the cost of taking too much action.”

We make special note that the current “necessity” of rapid monetary tightening reminds us of Fed Chairman Powell’s Congressional testimony of Sept. 24, 2020 – in reverse. At that time, he said the risks of “overdoing” easing were smaller than the risks of taking less robust actions to boost the economy. “Even if policy actions ultimately prove to be greater than needed, they will not go to waste,” he said.¹ Unfortunately, the consequences of “overdoing easing” were to exacerbate supply/demand imbalances and augment inflation. The policy “in reverse” may, in fact, cause a larger economic retrenchment than needed to stem inflation over a reasonable period.

Unintended Consequences and Markets

This week, the New York Times columnist Thomas Friedman cited Henry Kissinger who said, “Never fight Russia and China at the same time.”² The decision of the US administration to limit US content in China’s computing industry – particularly advanced semiconductor equipment – was expected. But the extent and timing of the announcement, coming just before the Party Congress, was provocative.

Last week, President Biden invoked the Cuban missile crisis to describe the nuclear weapons threat from Russia.³ The Cuban Missile Crisis was a 35-day standoff in October/November 1962 between the US and Soviet Union over the stationing of nuclear weapons close to the US mainland. It stands as a powerful historic example of *binary* geopolitical risk, and is widely considered the closest the world ever came to a nuclear exchange since the end of World War II.

Within the short period of grave nuclear risk, which could have ended very differently, US equities dropped less than 10% and then regained those losses and made new highs. (Note: Financial market volatility in the early 1960s was at a significantly lower scale than what we witness today.) The world economy grew strongly from 1963-1969. The US economy grew 4.3% on average during the period,

¹ US News September 24, 2020.

² “We Are Suddenly Taking on China and Russia at the Same Time,” October 12, 2022.

³ New York Times, October 6, 2022

including a recession that began a full eight years later. With one short bear market to absorb, investors enjoyed robust equity market returns over most of the remaining decade.

The path of economic progress isn't straight and continuous. Most often, recessions and recoveries drive financial market cycles. In fact, 90% of geopolitical shocks since and including WWII have not generated turning points for economic activity (see figure 2).

Figure 2: Selected History of Geopolitical Conflicts, Shocks and Market Reaction

Geopolitical Event	Date	S&P 500 (% since event date)			Crude Oil (% since event date)			MSCI World ex USA (% since event date)			DXY Dollar Index		
		Initial Reaction	30 days	90 days	Initial Reaction	30 days	90 days	Initial Reaction	30 days	90 days	Initial Reaction	30 days	90 days
Pearl Harbor	12/7/1941	-6.87	-2.90	-12.02									
Cuban Missile Crisis	10/19/1962	-3.78	7.61	17.16									
JFK Assassination	11/21/1963	-2.81	3.06	8.28									
US Bombs Cambodia	4/29/1970	-15.30	-6.43	-4.94	0.00	0.00	0.00	-10.45	-17.01	-16.07	-0.20	-0.23	-0.51
Arab Oil Embargo	10/18/1973	-16.26	-5.61	-15.11	67.44	72.09	287.04	-14.68	1.96	-18.53	6.98	4.68	12.31
USSR Invades Afghanistan	12/24/1979	-2.27	5.37	-7.78	8.33	8.33	8.33	3.94	3.94	11.85	-1.06	-0.71	5.91
US Bombs Libya	4/15/1986	2.95	-1.39	0.16	-3.91	8.70	-15.65	0.00	6.19	8.16	-4.15	-4.80	-5.30
US Invades Panama	12/15/1989	-2.06	-3.73	-3.43	2.82	5.08	-6.21	0.00	3.67	-7.04	0.31	-1.69	-0.44
Gulf War	12/24/1990	-4.16	0.09	12.10	17.75	-20.67	-31.32	1.75	1.75	15.96	-0.21	-3.61	4.90
World Trade Center Bombing	2/26/1993	-0.31	1.67	2.04	-0.18	-3.44	-5.81	0.00	8.52	18.62	0.18	-1.15	-4.79
911	9/11/2001	-11.60	0.45	4.34	-4.09	-17.68	-31.98	-8.48	3.24	5.48	-1.08	0.29	1.85
US Invasion of Iraq	3/20/2003	2.49	2.06	15.57	-8.16	-5.86	-6.54	1.53	4.58	22.05	0.84	-1.85	-7.89
Russian Annexation of Crimea	2/26/2014	1.16	0.68	3.62	-3.77	-2.43	-0.92	-2.42	-0.45	3.25	-0.40	-0.31	-0.10
Russian invasion of Ukraine	2/24/2022	-3.11	5.54	-8.44	19.04	17.26	18.98	-8.76	-0.36	-7.10	2.99	2.70	5.89
North Korea Related													
Korean War	6/23/1950	-12.80	-8.67	1.20									
Operation Paul Bunyan	8/18/1976	-3.15	1.64	-4.32	0.00	0.00	0.00	0.00	-0.26	-7.60	0.07	-0.57	-0.12
2006 Nuclear test	10/9/2006	0.90	2.60	4.60	-1.46	1.09	-7.43	0.46	4.33	8.09	0.43	-1.32	-2.21
2009 Nuclear test	4/25/2009	-1.28	5.09	13.05	-3.73	19.56	36.56	-2.32	12.28	21.21	0.52	-5.54	-7.04
2013 Nuclear test	2/12/2013	0.02	2.88	7.53	-0.27	-8.18	-12.49	-0.99	1.15	5.73	0.59	3.12	3.96
2016 Nuclear test	9/9/2016	-2.55	-0.81	2.97	-3.38	14.12	16.54	-2.06	-0.81	-0.72	-0.01	1.36	6.05
2017 Escalation	8/7/2017	-0.24	-0.64	4.44	2.19	7.00	21.65	-0.26	-0.49	3.60	0.23	-1.22	1.62
Missile test over Japan	8/28/2017	0.08	2.69	6.43	-0.83	10.37	23.06	-0.25	1.80	5.45	0.05	1.25	0.62

S&P 500	Initial Impact %	30 days %	90 days %
Average all events	-3.7	0.5	2.2
Average ex WW2	-3.5	0.7	2.8
Average ex WW2 and Oil Embargo	-2.9	1.0	3.7

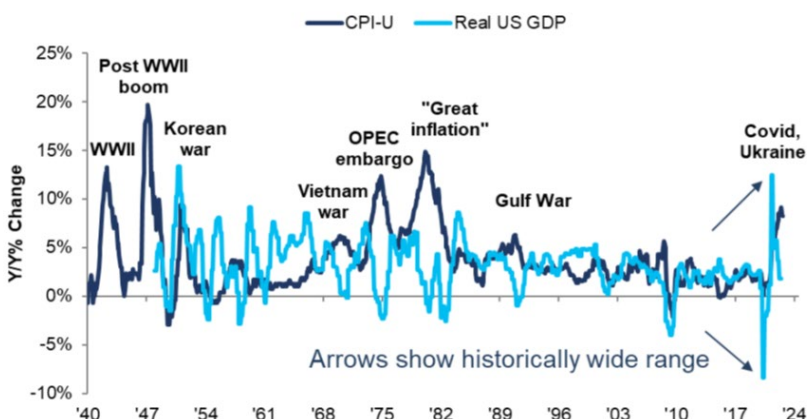
Source: CGWI and Bloomberg as of October 2022, and OCIS. Past performance is no guarantee of future results. Real results may vary. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only.

The Exceptions Are Very Costly

What about the exceptions? World War II was a grave human catastrophe that stands out for its long-term impacts on the global economy. The OPEC oil embargo of late 1973 proved to be a growth-constraining shock, catalyzing higher consumer prices and a world-wide recession. The present Russia/Ukraine conflict has similarities to the Gulf War of 1990. Each of these events had significant negative regional impact and notable global effects. In every case, central banks were unable to immediately offset the inflationary impact of supply shocks no matter what their hoped-for inflation targets (see figure 3).

Arguably the risks we face today are more complicated than prior regional conflicts. Overlapping shocks are more likely when central banks are tightening against a weakening global economic outlook. A stronger alliance between Russia and China would be untimely and might generate new fronts of conflict. We fear this is precisely what the US is risking with its restrictive technology actions. These increase "joint probability risk," raising the likelihood that a trigger event will cause a cascade of impacts that ripple across world markets and the economy.

Figure 3: US growth, inflation, supply shocks and wars




Source: Haver Analytics as of October 13, 2022. Past performance is no guarantee of future results. Real results may vary.

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