



Axel Botte
Head of Market Strategy
axel.botte@ostrum.com



Zouhoure Bousbih
Emerging countries strategist
zouhoure.bousbih@ostrum.com



Aline Goupil-Raguénès
Developed countries strategist
aline.goupil-raguenes@ostrum.com

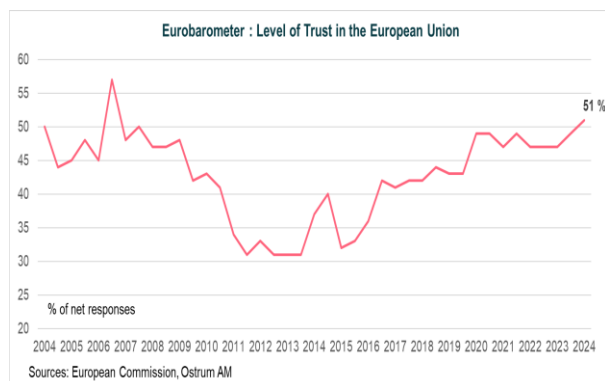
● **Topic of the week: Rare Earths: China Opens a New Front in the Tech War**
by Zouhoure Bousbih

- In response to the strictest export restrictions on electronic chips ever imposed by the United States, China has banned export licenses for gallium, germanium, and antimony to the U.S.;
- China holds a monopoly on rare earth supply, accounting for 85% to 95% of the global production of refined materials;
- This is not China’s first act of pressure; in 2010, it temporarily suspended exports to Japan due to a maritime dispute, causing rare earth prices to soar by over 500%;
- Since 2010, the United States and other countries have resumed their rare earth production and sought to diversify their supplies, but it remains insufficient to compete with China, which has flooded the world with low-cost rare earths;
- This recent pressure tactic serves as a warning of an escalation risk that could have serious consequences for global supply chains.

● **Market review: Christmas Cheer on Markets as Barnier government falls**
by Axel Botte

- United States: Contradictory signals with 227k jobs added while unemployment rises to 4.2%;
- OAT spreads tightening despite Barnier’s government fall amidst the promise of a budget;
- T-Note yields stabilize around 4.15-4.20%;
- Positive momentum in risky assets ahead of central bank meetings.

● **Chart of the week**



Citizen trust in the EU is at its highest level since 2007 (51%), according to the Eurobarometer from the European Commission.

This rate is higher than the trust they have in their national parliaments (37%) and their governments (33%).

Is the European Commission trying to send us a message?

● **Figure of the week**

331

This is the number of French deputies who voted for the motion of censure against the Barnier government, which lasted just 3 months, a record under the 5th French Republic.

Source: Bloomberg

- **Topic of the week**

Rare Earths: China opens a new front in the tech war

On December 3, China announced that it has banned the export of gallium, germanium, and antimony to the United States. These rare minerals are crucial in the manufacturing process of semiconductors, military equipment and for general industrial use. This announcement comes just one day after the United States tightened restrictions on the export of advanced chips to China. This new measure from Chinese authorities expands existing restrictions that have been in place since July 2023 on gallium and germanium, and since October 2023 on graphite. This serves as a warning for the upcoming D. Trump administration, which is expected to strengthen technological restrictions against China.

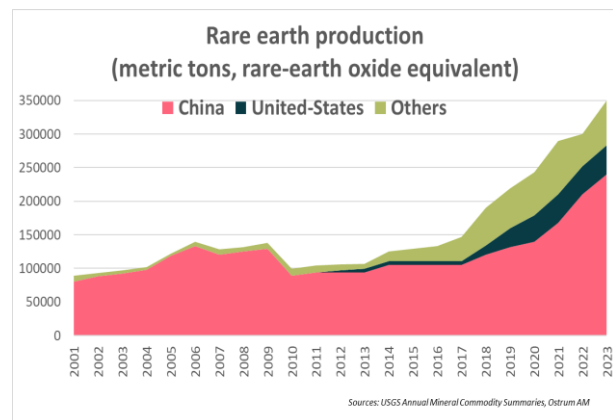
China’s Monopoly on Rare Earths: From Production to Processing

Rare earths are critical minerals in modern technologies, ranging from mobile phones to renewable energy. Although these minerals are abundant on the planet, economically viable deposits are rare, making them strategic raw materials.

A Monopoly on Production...

China holds a monopoly on global supply, accounting for 85% to 95% of rare earth production, as shown in the accompanying graph.

Since 2010, when China suspended its rare earth exports to Japan following a maritime incident, concerns have risen in the United States and Europe about the possibility of China

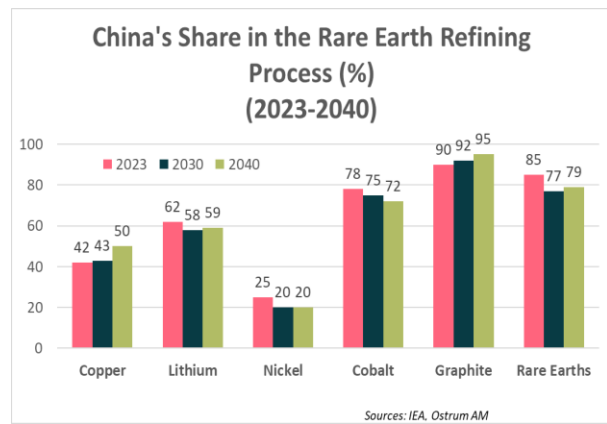


using its monopoly position as a diplomatic weapon. Despite the resurgence of global rare earth production after the 2010 crisis and efforts to diversify supply sources, China continues to dominate global rare earth production. The United States accounts for 12% of production, while other countries such as Brazil, India, Australia, and Malaysia together represent 19% of global production in 2023, far behind China.

...And on Refining

While China dominates rare earth production, it also controls the entire processing and refining process. In fact, the extraction and processing of rare earths have severe environmental and health impacts due to a combination of weak regulations, outdated

techniques and illegal mining. The accompanying graph illustrates the lack of diversification in the production of refined materials, which remains concentrated in China. It accounts for 42% of copper refining production, 62% for lithium, 78% for cobalt and 90% for graphite, all critical materials for renewable technologies.

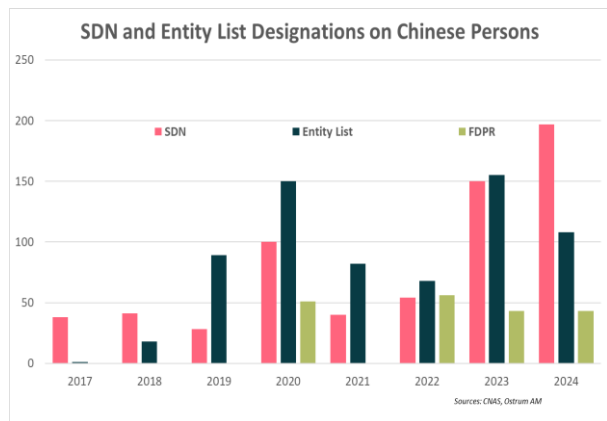


China represents 85% of rare earth processing, followed by Malaysia (23%). These two countries are the only ones in the world with significant refining capacity.

The United States Has Increased Pressure on China

The Biden administration has surpassed Trump in terms of sanctions against China.

As a sign of the fierce technological war between the two countries, the number of financial sanctions and export controls on Chinese entities or individuals under the Biden administration has exceeded those implemented by the Trump administration, as shown in the accompanying graph.



The Trump administration imposed Specially Designated Nationals and Blocked Persons (SDN) designations on 216 Chinese individuals and added 259 Chinese entities to the

Entity List. Notably, it was the first administration to apply a foreign direct product rule (FDPR) to a Chinese entity listed on the Entity List, marking an innovative expansion of this export control tool. By August 30, 2024, the Biden administration had added 432 Chinese individuals to the SDN list and 412 Chinese entities to the Entity List.

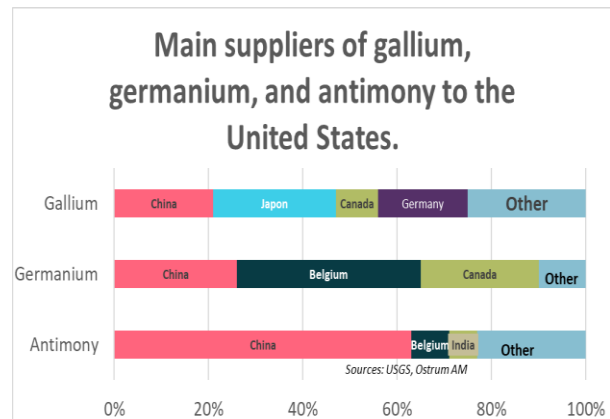
Washington has reignited tensions with Beijing.

The U.S. administration has escalated tensions with Beijing by imposing new export restrictions on electronic chips to China on Monday, December 2, and sanctioning numerous Chinese companies. These sanctions specifically target high-bandwidth memory (HBM) chips, crucial for the development of artificial intelligence, as well as various semiconductor manufacturing tools and software, including those produced by third-party countries such as Singapore and Malaysia. Washington has also added 140 Chinese companies to its "Entity List", thereby prohibiting trade with U.S. companies and those from allied countries. These are the strictest controls ever imposed by the United States to reduce China's ability to produce the most advanced chips it uses in its military modernization efforts.

What are the Consequences for the United States?

Gallium and germanium are two minerals that have already been subject to export licenses by China (July 2023), requiring sellers to provide information about the buyer and their plans. Other restrictions targeted graphite in November 2023 and antimony in the summer of 2024. These minerals are crucial for the U.S. defense industry, particularly in next-generation missile defense and radar systems, as well as in electronic warfare and communication equipment.

The accompanying graph shows the main suppliers of these three types of minerals to the United States. China remains the primary supplier, followed by Canada, Germany, and Japan. Since the announcement of Chinese restrictions last year, gallium prices have increased by 80%, and germanium prices have more than doubled, without causing disruptions in global supply chains. This is because the export licenses are cumbersome to complete but ensure the supply of these minerals.



According to the US Geological Survey (USGS), a total Chinese export ban on these three rare earth elements could reduce the U.S. GDP by \$3.4 billion, which is not significant. However, this could lead to serious supply issues, as shown in the table below, according to Interos.

Impact on Rare Earth Element Supply Chain US & EUROPE

US Based Firms			Europe and UK FIRMS		
100+	3500+	102000+	9+	1600+	56000+
compagnies buy directly from Chinese tier-1 suppliers	compagnies buy directly from Chinese tier-2 suppliers	compagnies buy directly from Chinese tier-3 suppliers	compagnies buy directly from Chinese tier-1 suppliers	compagnies buy directly from Chinese tier-2 suppliers	compagnies buy directly from Chinese tier-3 suppliers

Sources: Interos, Ostrum AM

More than 100 U.S. companies source rare earths directly from Chinese suppliers at tier 1, while 3,500 do so indirectly at tier 2, and over 102,000 at tier 3. In Europe, nine companies (from the European Union and the United Kingdom) purchase directly from these suppliers at tier 1, 1,600 indirectly at tier 2, and more than 56,000 at tier 3. The main industry sectors involved in trading relationships related to Chinese rare earth elements include electronic equipment and components, machinery, software, as well as metals and mining.

China Sends a Warning to the New Trump Administration

By controlling its rare earth exports, China signals that it can implement real control over the flow of dual-use minerals, both civilian and military, which allows it to justify its restrictions under the Wassenaar Arrangement. This agreement gives States the right not to export products that could threaten their national security. There are alternatives, but the costs of refining rare earths are high, and China has long dominated their production

at low prices, which has limited extraction infrastructure elsewhere.

The risk of escalation is therefore high. China could use its monopoly on rare earths to flood the market with its products, hindering the rise of other countries, as it did with its low-priced rare earths. This is the case for graphite, a crucial material for electric battery anodes. A ban on exporting graphite could impede the growth of the European electric battery industry.

China has also urged its companies in the automotive, semiconductor, and Internet sectors to be cautious in purchasing American chips and to favor Chinese or third-country alternatives. With the inauguration of D. Trump approaching, this serves as a warning against a potential escalation that could have severe consequences for the global technology sector.

Conclusion

In response to increased American pressure, China has opened a new front in the technological war with the United States, focusing on rare earths. Its monopoly position allows it to use this as a diplomatic weapon. With D. Trump's inauguration approaching on January 20, China's sanctions also serve as a warning against the risk of escalation. China could then hinder the rise of other countries in the technological field, thereby reinforcing its hegemony.

Zouhoure Bousbih

- **Market review**

Christmas Cheer on Markets as Barnier government falls

The fall of the French government ultimately led to a tightening of the OAT spread, before market participants shifted their focus back to U.S. economic data.

French political risk has taken a backseat to economic publications as the primary driver of financial markets towards the end of last week. France is likely to pass a budget before year-end, albeit with significantly scaled-back fiscal consolidation ambitions. In the United States, inconsistencies in the monthly employment report have not altered the Federal Reserve's view of the economy, which is poised to reduce rates by 25 bps next week. Bond yields, hovering between 4.15% and 4.20% on the T-note, have been on a downward trajectory since the November elections. The European Central Bank is also expected to cut rates, benefiting all spreads—both sovereign and credit—this week, despite lackluster economic surveys. The dollar-yen exchange rate anxiously awaits the Bank of Japan's decision, fluctuating around the 150 mark. Bitcoin responded positively to the appointment of Paul Atkins to the SEC, breaking through the \$100,000 ceiling. Equities are rising, driven by the growth and quality factors.

In the United States, employment data remains challenging to interpret. The truth likely lies somewhere between the 227k jobs added from the establishment survey and the 355k job losses reported in the household survey. The unemployment rate ticked up to 4.2% in November, despite a significant drop in labor force participation, while hourly wages held steady at a 4% annual increase. Other indicators confirm that layoffs remain modest, although the pace of hiring is slowing. Additionally, the ISM services index fell by four points to 52.1 in November, with companies widely expressing uncertainty regarding forthcoming tariff policies. Furthermore, China has already announced retaliatory measures aimed at reducing its exports of gallium and germanium, reminiscent of actions taken in the summer of 2023. Chinese economic surveys showed slight improvement.

Fixed income markets continue to factor in monetary easing, a sentiment that recent data does not seem to undermine. The ECB is set to cut rates by 25 bps, disregarding wage tensions or the mechanical rebound in inflation expected at year-end. Bi-monthly data from the PEPP indicates that the ECB's summer support for OATs reversed in October-November. The spread on French bonds (75 bps) has fallen back below the 80-bp threshold following Marine Le Pen's statements suggesting a budget will be approved. Auctions have been well received, but the trend remains one of widening spreads against swaps for long maturities (30 years at 141 bps). In this context, the Bund, near 2.10%, remains below its equilibrium value, which we estimate at 2.36%. The Italian BTP, like other peripheral bonds, is in demand, benefitting from net repayments at year-end. Credit markets remain stable, supported by sustained demand for this asset class. High-yield bonds have tightened significantly, and the crossover index indicates that this trend is set to continue. As for equities, monetary easing is particularly advantageous for growth stocks (Nasdaq up 3%). In Europe, banks and the growth-quality combination are finding favor in the market.

Axel Botte

● Main market indicators

G4 Government Bonds	09-Dec-24	1 wk (bp)	1m (bp)	2024 (bp)
EUR Bunds 2y	1.99%	+9	-19	-41
EUR Bunds 10y	2.1%	+7	-27	+8
EUR Bunds 2s10s	10.7bp	-2	-7	+49
USD Treasuries 2y	4.11%	-7	-15	-14
USD Treasuries 10y	4.17%	-2	-13	+29
USD Treasuries 2s10s	6bp	+5	+1	+43
GBP Gilt 10y	4.26%	+5	-17	+73
JPY JGB 10y	1.05%	-3	-18	-63
€ Sovereign Spreads (10y)	09-Dec-24	1 wk (bp)	1m (bp)	2024 (bp)
France	76bp	-13	-5	+22
Italy	107bp	-16	-12	-60
Spain	64bp	-10	-7	-33
Inflation Break-evens (10y)	09-Dec-24	1 wk (bp)	1m (bp)	2024 (bp)
EUR 10y Inflation Swap	1.9%	+1	-9	-23
USD 10y Inflation Swap	2.43%	-1	-14	+2
GBP 10y Inflation Swap	3.44%	-8	-20	-9
EUR Credit Indices	09-Dec-24	1 wk (bp)	1m (bp)	2024 (bp)
EUR Corporate Credit OAS	100bp	-8	+0	-38
EUR Agencies OAS	61bp	-5	-1	-9
EUR Securitized - Covered OAS	57bp	-3	+7	-22
EUR Pan-European High Yield OAS	318bp	-21	-3	-81
EUR/USD CDS Indices 5y	09-Dec-24	1 wk (bp)	1m (bp)	2024 (bp)
iTraxx IG	53bp	-4	-1	-6
iTraxx Crossover	289bp	-12	-1	-24
CDX IG	47bp	-1	0	-9
CDX High Yield	289bp	-5	-9	-67
Emerging Markets	09-Dec-24	1 wk (bp)	1m (bp)	2024 (bp)
JPM EMBI Global Div. Spread	331bp	-5	-4	-53
Currencies	09-Dec-24	1wk (%)	1m (%)	2024 (%)
EUR/USD	\$1.056	0.687	-0.836	-4.3
GBP/USD	\$1.275	0.862	-0.863	0.2
USD/JPY	JPY 151	-0.717	2.124	-6.4
Commodity Futures	09-Dec-24	-1wk (\$)	-1m (\$)	2024 (%)
Crude Brent	\$71.9	\$0.1	-\$1.7	-3.3
Gold	\$2 655.4	\$16.5	\$42.8	28.7
Equity Market Indices	09-Dec-24	-1wk (%)	-1m (%)	2024 (%)
S&P 500	6 090	0.96	1.58	27.7
EuroStoxx 50	4 987	2.89	3.83	10.3
CAC 40	7 470	3.22	1.79	-1.0
Nikkei 225	39 161	1.68	-0.86	17.0
Shanghai Composite	3 403	1.15	-1.44	14.4
VIX - Implied Volatility Index	13.44	0.75	-10.04	8.0

Source: Bloomberg, Ostrum AM

Additional notes

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