



CEE Economic Monthly

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► China is increasing its share of the global car trade. More than half of Chinese current exports are electric cars. China's share in the EV market is growing steadily – mainly in the low-cost segment. We describe the prospects in the section: *China disrupts trade patterns in the automotive industry, yet is not the clear leader.*

► The expansion of China's EV market may result in another round of tariff increase by the EU and US. We estimated the gravity model to simulate potential effects. Our analysis suggests that increasing tariffs by 1 pp causes a decline in trade by approx. 1.3%. The negative effects grew over time during the period 2004-2017. More in section: *Gravity model: prospective US and EU tariffs should hinder its exports.*

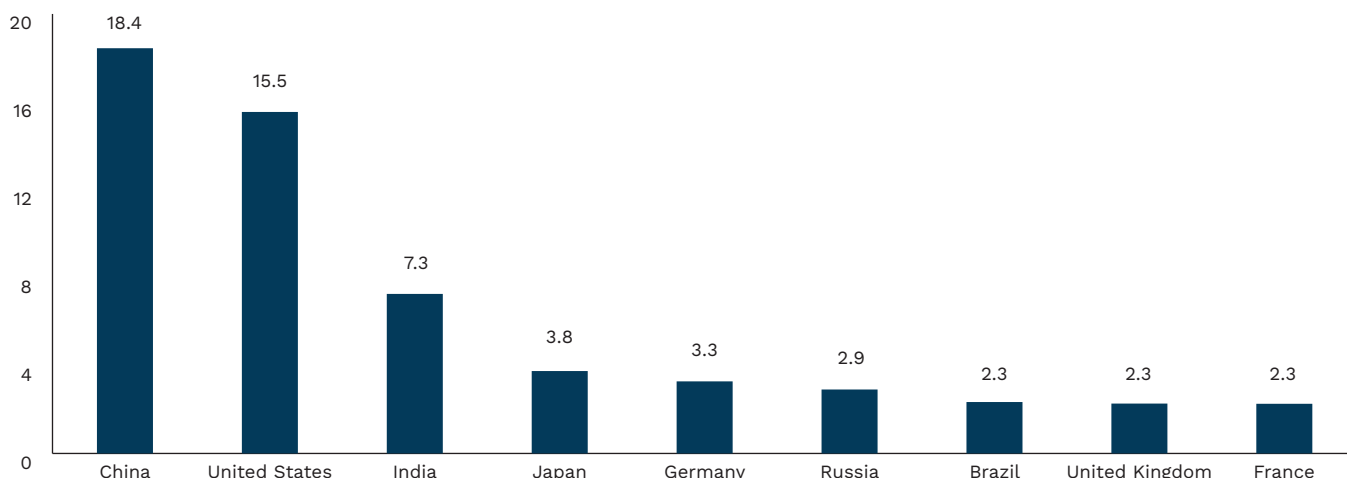
► The slowdown of the Chinese economy and the trade tensions with the EU should have an adverse effect on its equity markets. We modelled the response of the returns and volatility based on slower GDP growth. Unfortunately, these are only weakly correlated with activity. More in the section: *Financial Markets: Impact of the trade tensions still unresolved.*

► The oil market responded softly to a potential decrease in Iran's output due to ample spare capacity within OPEC+ and the potential intervention from the US Strategic Petroleum Reserve. However, the situation remains fluid. We present the outlook in the section: *The Iran-Israel conflict increases uncertainty in global energy markets.*

► The more frequent occurrence of extreme weather events is affecting public finances. Governments are more often implementing new rules relating to budget management. We present an overview in the section: *Green Public Finance Management frameworks – a summary.*

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Share of selected countries in Global economy in 2022 (PPP)



Source: [Statista](#).

China disrupts trade patterns in the automotive industry, yet is not the clear leader

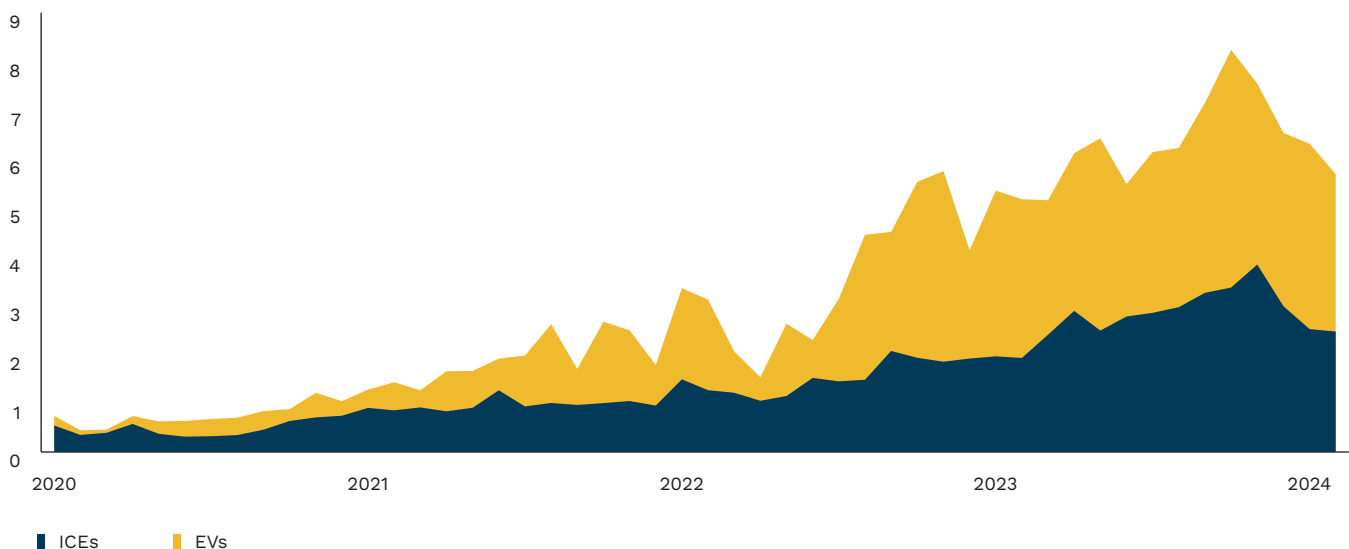
5.2 mn units

number of cars exported by China in 2023

► China is significantly increasing its share of the global car trade. This is the result of both foreign investment in the country and the development of domestic companies. More than half of current exports are electric cars, and the Chinese share of this market is growing steadily – mainly in the low-cost car segment. In addition, exports of cars from China to Russia have increased sixfold.

► **China is rapidly increasing its share of car exports.** Domestic customs data suggests that China exported 5.2 mn cars in 2023 – but this was still 0.8 mn units short of taking over the leadership position from Japan (link). However, trade data is not entirely consistent – it varies depending on specifics such as product classification and the data provider. For example, the International Trade Center (ITC) indicates that in 2023 China exported cars weighing 6.7 mn tonnes – such a figure would also be clearly lower than exports from Germany (7.5 mn tonnes).

Figure 1.1. China's passenger car exports by technology (monthly, in USD bn)



Source: China General Administration of Customs via Macrobond.

Just 44%

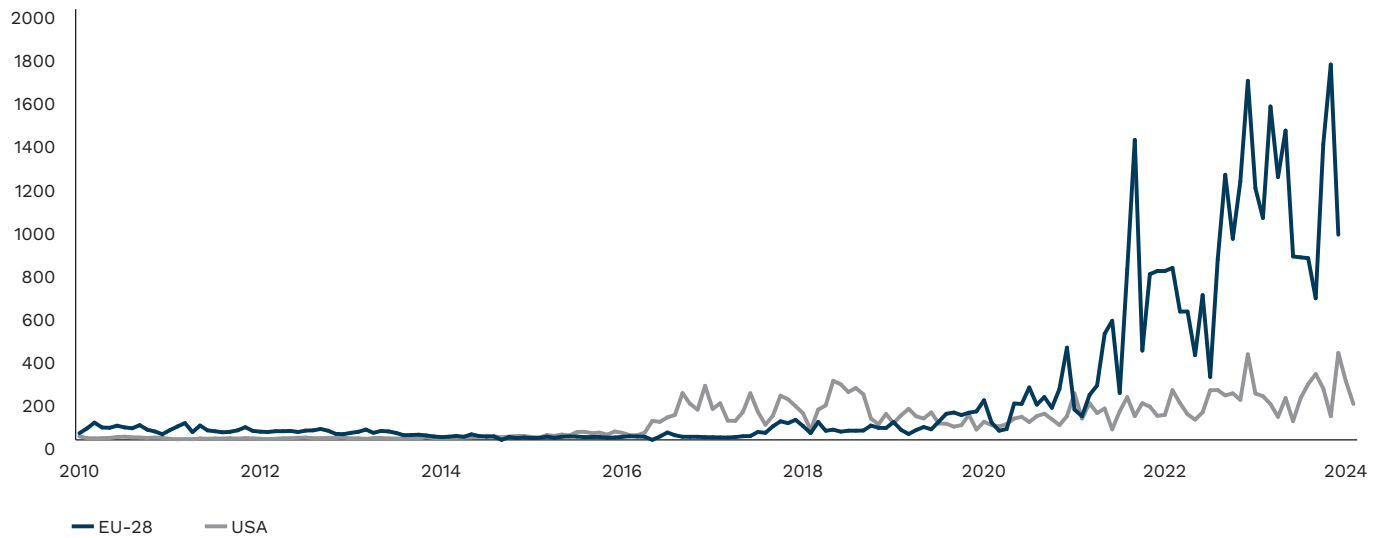
value of Chinese car exports in 2023 compared to Germany's in USD

► **The increase in China's share is mainly the result of three factors: exports to Russia, electric cars, and smaller units.**

1. **Exports to Russia.** ITC data shows that exports to Russia have increased sixfold in recent years – from 0,2 mn tonnes in 2021 to 1,2 mn tonnes in 2023. Thus, the share of Russian customers in Chinese exports has increased from 7.4 to 18.0%. This trade most likely relates to internal combustion (ICEs) cars and is a result of mitigating the effects of sanctions on Russia.
2. **Electric cars.** Chinese customs data suggest that China exports between USD 3 and 4 bn worth of EVs every month. Before the pandemic, the share of electrics was virtually nil – they now account for just over 50% of all electric car exports. A significant proportion of these cars goes to developing countries. In recent years, the European Union – as opposed to the US – has also become a significant importer (Fig 1.2).

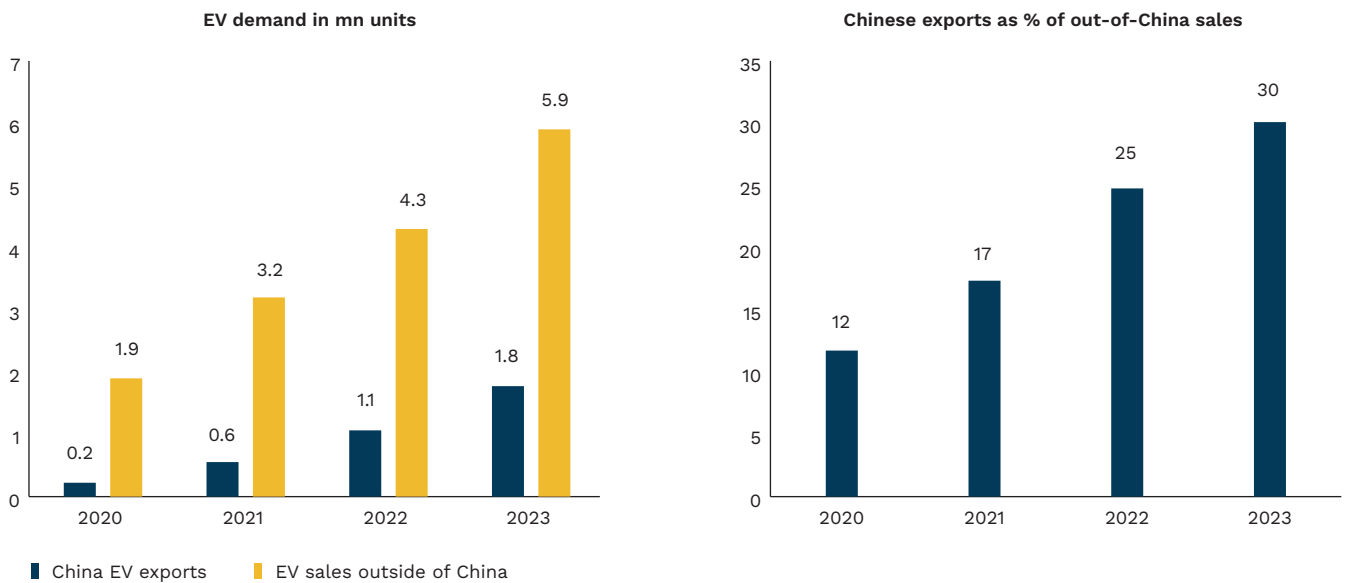
3. **Smaller units.** The increase in the production and export of cars in China is the result of both foreign investment (e.g. Tesla, German corporations) and the development of Chinese companies. **Domestic corporations are largely focusing on the volume EVs segment**, i.e. small and low-cost electrics with less technology, but also clearly lower prices. This is evident from the ITC data – while China’s car exports measured in tonnes are only 10% lower than Germany’s, their value in USD is as much as 56% lower. **In the value segment, China is far from being the world leader.**

Figure 1.2. Imports of Chinese passenger EV’s by western countries (monthly, in USD mn)



Source: UN COMTRADE and US Census Bureau via Macrobond.

Figure 1.3. China’s impact on the global EV market



Source: China General Administration of Customs via Macrobond and International Energy Agency.

► **Overcapacity in the Chinese automotive industry disrupts global trade patterns.** The IEA estimates that global sales of electric cars are growing rapidly – from 3.0 in 2020 to 13.9 mn units in 2023. The majority of new car sales take place in China, with 8.0 mn units sold last year. Thus, sales of electrics outside China rose from 1.9 in 2020 to 5.9 mn units in 2023. **Chinese exports, however, are growing noticeably faster than demand outside China** – hence their share in overseas demand has risen from 12 to 30% in four years.

► **The simple narrative of Chinese dominance in the automotive sector is wrong.** Western corporations focus more on development, competing with quality and modern technology – examples include the latest generations of electric batteries (e.g. [link](#), [link](#)). Much of Chinese exports, on the other hand, are focused on the low-cost car segment and already established technologies – the main challenge for Western countries is associated with protecting their markets from the low-cost push of Chinese products (e.g. [link](#)).

Gravity model: prospective US and EU tariffs should hinder its exports

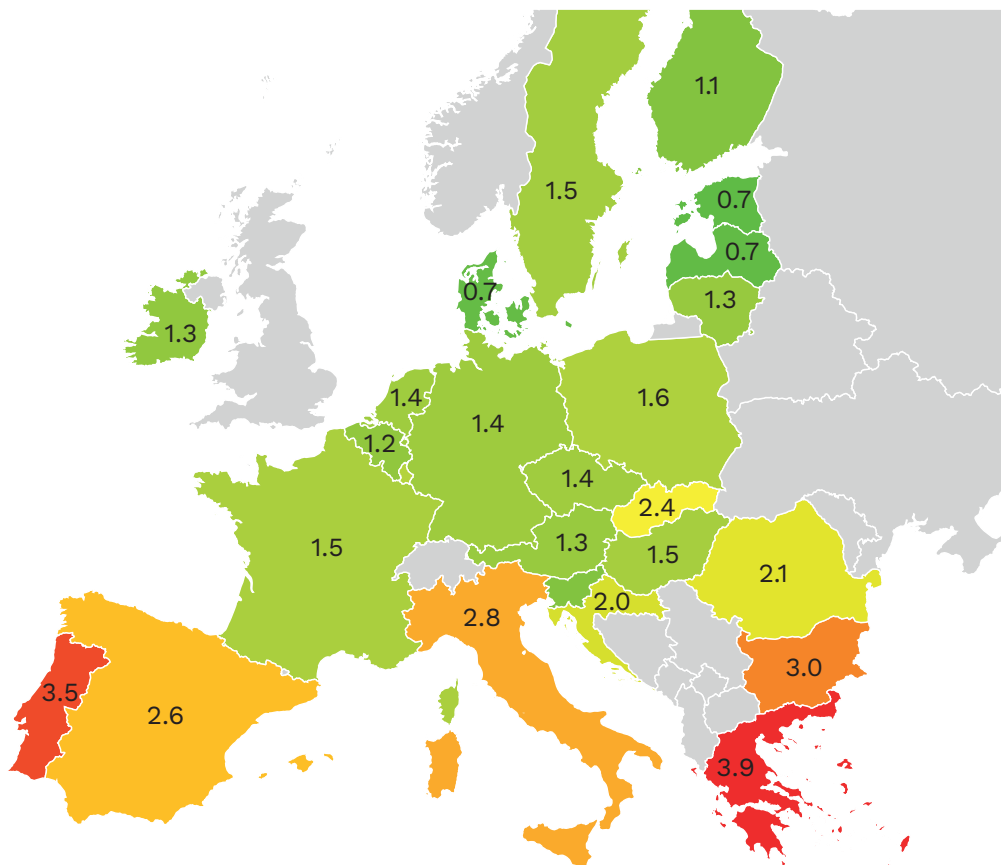
-1.3%

trade reaction to an increase in tariffs by 1% – average coefficient by AHS tariffs from gravity models for the years 2014-2017

► Prospective increases of US and EU tariffs on China will have an adverse effect on global trade. We extended the gravity model developed in [December 2023 CEE Monthly](#) to simulated results of tariff rate increases between countries based on the [World Bank's WITS database](#). Our analysis suggests that increasing tariffs by 1 pp results in a decline in trade by approx. 1.3%. The negative effects of tariffs grew over time during the period 2004-2017.

► In 2018 Donald Trump imposed tariffs on steel and aluminium. The World's average weighted tariff rate paid to the USA increased from 1.7% in 2017 to 13.7% in 2019. The effectively applied tariff rates on trade with the US differs across EU countries due to their specific trade structures. WITS data suggests that in 2021 the Southern Europe countries – such as Italy, Spain, Portugal, Greece and Bulgaria – paid the highest (AHS) tariffs to the USA. Those countries, together with France and Austria, paid the highest rates in 2019, after Trump's tariffs were imposed.

Figure 2.1. Effectively applied weighted average tariffs on EU countries' exports to USA in 2021



Source: World Bank.

► **To assess the effects of the increase in tariffs we estimated the gravity model.** We extended our model by adding the bilateral tariff rates. We utilised the data from WITS database. In our model we included effectively applied tariff rates (AHS). In addition, tariffs are trade-weighted by country, reflecting the actual tariff burden of traded goods.

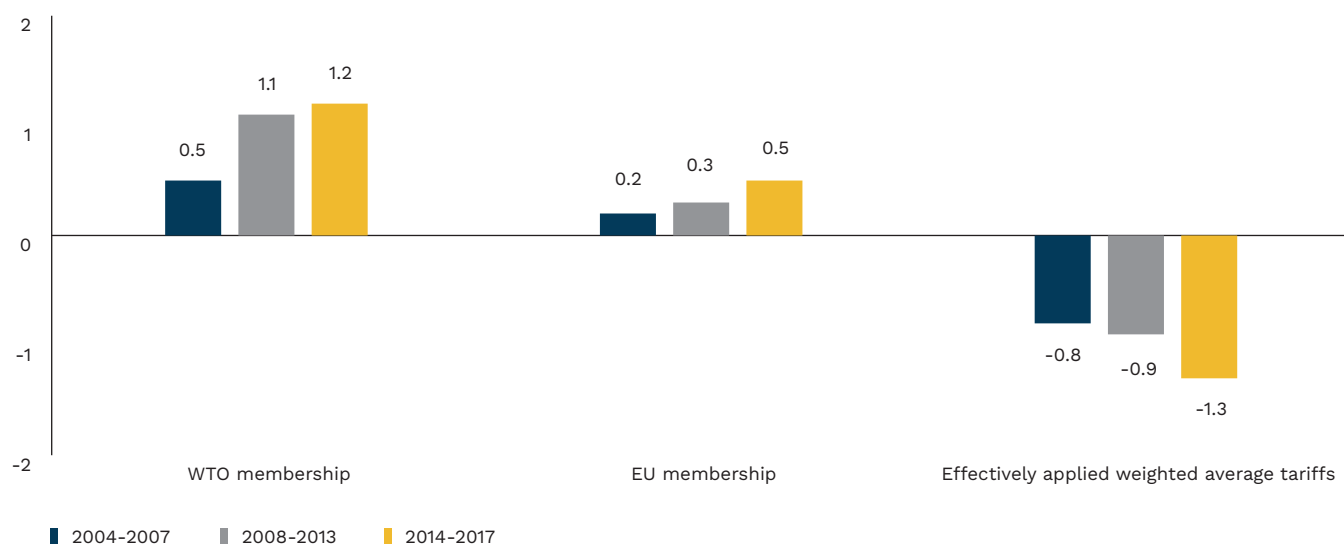
Table 2.1. Gravity model parameters – estimates from the gravity model for year 2017

Variable	Estimate	Std. Error	T value	Pr(> t)
Intercept	-16.40	0.31	-52.52	0.00
$\ln(\text{Distance})$	-1.39	0.03	-43.40	0.00
$\ln(\text{GDP}_{\text{domestic},t})$	1.43	0.01	129.58	0.00
$\ln(\text{GDP}_{\text{partner},t})$	1.10	0.01	96.82	0.00
Effectively applied weighted average tariffs	-1.07	0.20	-5.41	0.00
Dummy variable: Common border	0.39	0.15	2.65	0.01
Dummy variable: WTO membership	1.32	0.06	20.60	0.00
Dummy variable: EU membership	0.43	0.11	3.98	0.00
Dummy variable: Common legal origins	0.73	0.10	7.62	0.00
Dummy variable: Common language	0.63	0.05	13.10	0.00

Source: calculated by PEI based on USITC and World Bank data.

► **Our model suggests that the negative effect of tariffs grew over time.** We estimated the model for each year between 2004 and 2017. Then, we calculated average coefficients for three periods: before the financial crisis (2004-2007), during its fallout (2008-2013) and after (2014-2017). The results show an increase in negative tariff effects over time. The gravity model suggests that an increase in tariffs by 1% resulted in a decrease in trade by 0.8% prior to the crisis and by 1.3% after the crisis.

Figure 2.2. Gravity model average coefficients over years – tariffs, EU and WTO memberships



Source: calculated by PEI based on USITC and World Bank data.

► **Including tariffs in the model diminished the effect of WTO membership and increased benefits from EU.** The model suggests that WTO membership increases the trade between countries by 96% on average. This estimate is slightly higher than the one that we obtained in the model without tariffs – in that model WTO membership increased trade by 125%. Simultaneously, the positive effect on EU trade is higher than in the model without tariffs. Following the financial and European debt crisis it accounted for 45% higher trade, compared to approx. 25% in the model without tariffs. Both positive effects increased over time, which corresponds with the increase of negative effects of tariffs. The average positive effect of EU membership on trade increased from 17% before the financial crisis to 45% after, while the WTO increased to 120% from 46% prior crisis.

Financial Markets: Impact of the trade tensions still unresolved

19.1

coefficient of variation of MSCI equity indexes rates of returns in China

► The potential slowdown of the Chinese economy and the trade tensions with the European Union should have an adverse effect on the emerging equity markets. We modelled response of the yields and volatility in response to slower GDP growth in European and Asian emerging markets. The case of China is complicated – financial returns and volatilities are weakly related to economic activity.

► We analysed the behaviour of MSCI equity indexes in the emerging markets in Europe and Asia. Our object of interest are the total monthly returns from the widest benchmarks (IMI), which cover both the small, medium, and large caps. All returns are expressed in USD. The analysed countries and basic facts about rates of returns are presented in Table 3.1. The analysed sample spans from January 2010 to March 2024. In the case of Romania and Vietnam the indexes were introduced with historical data up to November 2012.

Table 3.1. Descriptive statistics of the monthly returns of MSCI equity indexes (IMI)

Europe – emerging markets				Asia – emerging markets			
Country	Mean	Std. Dev.	CV	Country	Mean	Std. Dev.	CV
Turkey	0.4	9.5	23.0	China	0.3	6.5	19.1
Poland	0.5	8.3	17.3	Malaysia	0.3	4.6	15.5
Hungary	0.6	8.8	14.0	Indonesia	0.5	6.3	13.6
Czechia	0.6	6.6	11.6	Vietnam	0.7	6.8	9.6
Romania	1.3	6.0	4.5	Philippines	0.7	5.9	8.7
				India	0.8	6.3	7.9

Note: CV stands for coefficient of variation. This is the ratio of standard deviation to mean return. Higher CV denotes that equity investments in the country are riskier.

Source: PEI calculations based on the Macrobond data.

11.6-17.3

range of coefficient of variations of MSCI equity indexes in the CEE region

► **The CEE equities offer lower returns compared to ASEAN countries but better than China.**

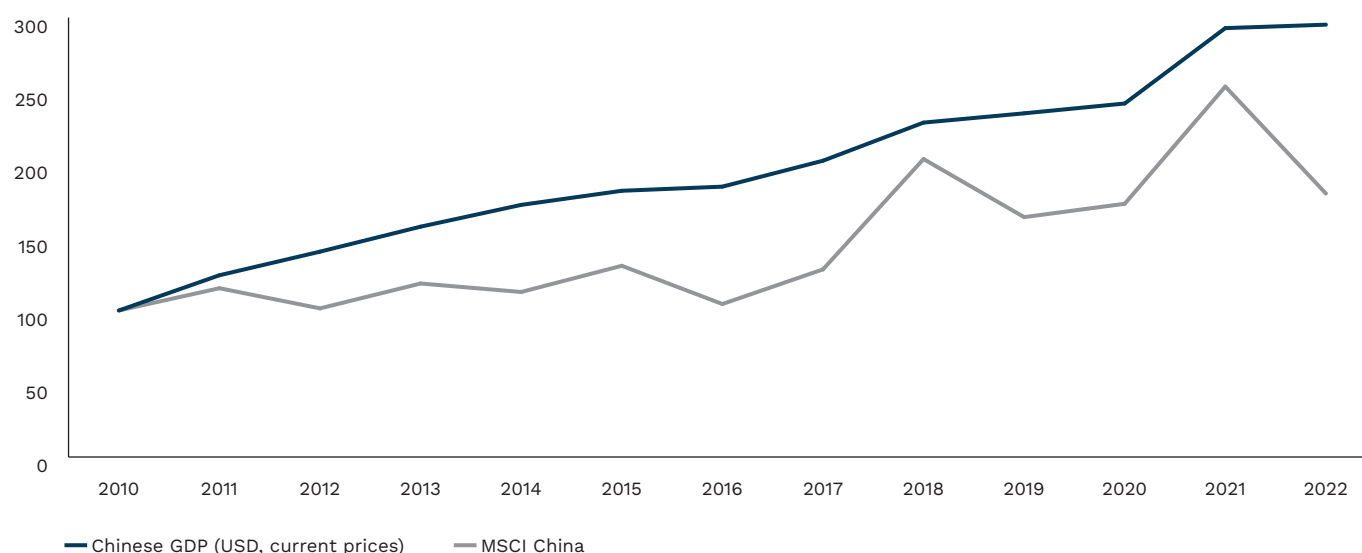
Tracking the MSCI index in the Visegrad group on average yields 0.5% return per month with 11-17 higher dispersion measured by a standard deviation. In the ASEAN countries and in India the returns are higher, with relatively lower variation. On the other hand, the Chinese market stands out negatively due to structural problems of the real estate sector.

► **We attempt to answer the question of whether China's slower growth is affecting Asian equity markets.**

The modelling of the long-term equity returns is a complicated task. The most standard approach requires identification of the risk-free rate and calculation of the equity premium (e.g. [Ibbotson and Chen, 2003](#)). The fundamental model requires identification of variables, affecting performance. Theoretically, the most obvious choice is GDP per capita and GDP growth. However, the research here is ambiguous – you can find examples where economic results are negatively correlated with stock market results ([Ritter, 2005](#)). Secondly, research papers highlight the importance of consumer behaviour and risk aversion ([Bansal et al, 2010](#); [Malloy et al, 2009](#)). Thirdly, literature highlights the importance of the international flows and marketing risks. Finally, there are a few caveats – there is a well-documented short-term link between oil prices and equity performance, which distorts the interference in long-term performance ([Conrad et al., 2014](#)).

► We used a standard regression model to measure the estimated impact of GDP growth rates on MSCI returns. The analysis suggests that in Central and Eastern Europe, MSCI index returns tend to lag economic activity data by one or two quarters – behaviour is strongly driven by expectations of future performance. For China, however, the situation is quite different. Firstly, the aggregate total return index has risen by 180% since 2010, almost twice as slowly as GDP (295%). Secondly, the profile is much more volatile, as shown in Figure 3.2. This problem is probably related to the quality of Chinese statistics. Nevertheless, the impact of slower growth remains ambiguous.

Figure 3.1. Effectively applied weighted average tariffs from EU countries' exports to USA in 2021



Source: World Bank, Macrobond.

Table 3.2. Does volatility of MSCI equity indexes lower with the convergence?

Country	Answer	Country	Answer
Poland	No	Vietnam	No
Turkey	Weakly	China	Weakly
Czechia	No	Malaysia	Weakly
Hungary	No	India	Yes
Romania	Weakly	Indonesia	Yes
		Philippines	No

Source: PEI calculations based on the Macrobond data.

► We do not see any significant impact of the potential growth of GDP or the GDP per capita level on lowering volatility. We introduced an equation describing volatility in the standard GARCH(1, 1) model augmented with the additional regressors to the variance equation presented by the formula below

$$\sigma_{i,t}^2 = \omega + \alpha_1 \varepsilon_{i-1,t}^2 + \beta_1 \sigma_{i-1,t}^2 + \gamma * GDP_t + u_{i,t} \quad (1)$$

► The parameters corresponding to the GDP per capita level or potential growth rate usually have a weak impact on the final market volatility. The influence was statistically not significant in most of the CEE emerging markets and has played a minor role in others. In the case of Asia, we notice clear positive effects for India and Indonesia only. For China, the case is again complicated – the relationship is weak.

The Iran-Israel conflict increases uncertainty in global energy markets

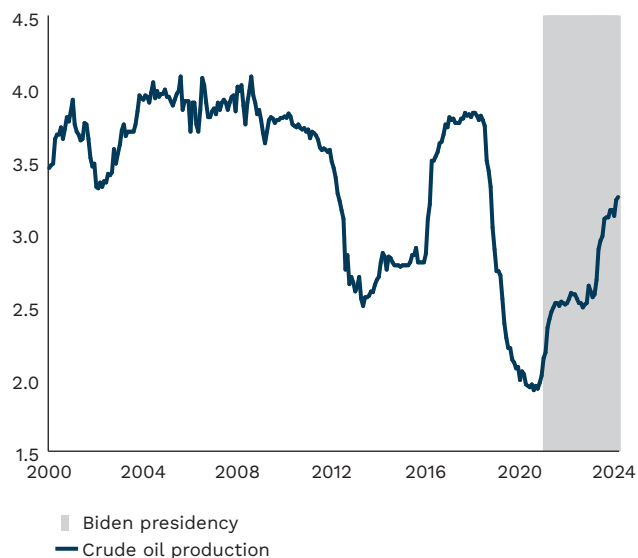
► **There is no crisis in the oil market, yet Iran’s recent attack on Israel has heightened investor uncertainty.** On Monday, April 15, 2024, oil prices declined because of the limited impact of the missile attack. Concerns about a potential decrease in Iran’s oil output have been mitigated by the ample spare capacity within OPEC+ and the potential intervention from the Strategic Petroleum Reserve (SPR). However, the situation remains fluid, and any escalation of the conflict could result in further incidents, such as the closure of the Strait of Hormuz. Such developments would have significant repercussions, not only for Poland, which relies heavily on imports of raw materials from the Middle East but also for the global economy, given the potential for an increase in commodity prices.

► **The short-term oil supply remains secure.** In March 2024, Iran’s oil production reached 3.25 mn barrels per day (mbd), constituting 3% of the global supply—its highest output since October 2018, facilitated by the loosening of U.S. sanctions under the Biden administration. However, the potential reintroduction of more stringent U.S. sanctions and an escalation of the conflict could diminish Iran’s oil production. To compensate for any potential shortfall in supply in the short term, two strategies could be employed: increasing OPEC+ production or using SPR. The OPEC+ cartel has about 5 mbd of spare capacity, or 5% of global supply, after several production cuts. Moreover, despite the fact that US strategic oil reserves are the lowest since 1983 and half the size of a decade ago (364.2 mbd as of Aug 5, 2024), they remain a key hedging tool for the oil market. Nevertheless, any use of these reserves would likely require replenishment in the second half of the year.

3.25 mbd

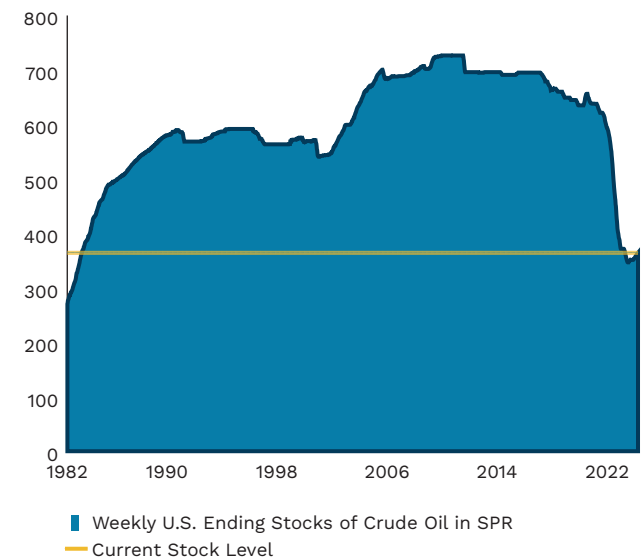
– Iranian oil production output in March 2024, 52% more than in January 2021 before Biden presidency

Figure 4.1. Monthly crude production in Iran in 2000-2024 (mbd)



Source: Bloomberg and IEA.

Figure 4.2. Weekly volume of US stocks of crude oil in SPR in 1982-2024 (mn barrels)



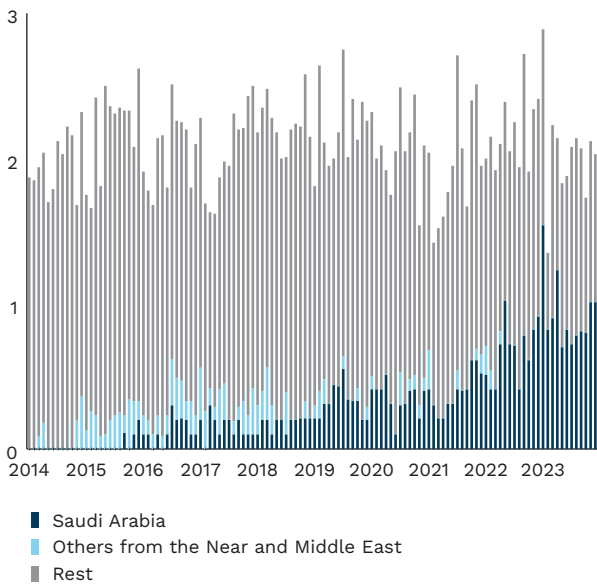
Source: EIA.

17%

Poland's gas imports in 2023 from Qatar (threatened by the blockade of the Strait of Hormuz)

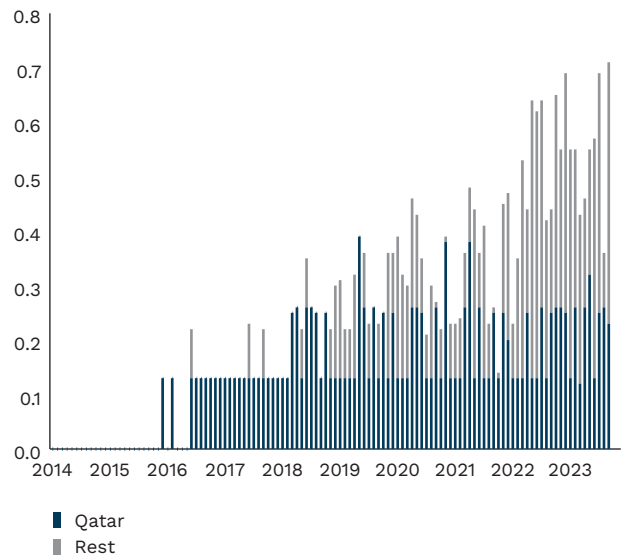
► **The most significant threat to the global energy supply would be the blockade of the Strait of Hormuz (SoH), which, though currently deemed unlikely, would have profound global implications.** The closure of this crucial Iranian strait could disrupt the flow of a substantial portion of the world's energy: 25-30% of global oil trade (20 mbd) and all LNG exports from Qatar and the UAE (20% of global LNG trade) pass through the SoH. The International Energy Agency (IEA) notes that only 4.2 mbd of the pipeline capacity is available to reroute crude oil to circumvent the SoH. Moreover, there are no alternative routes for transporting LNG. According to Steno Research, commodity prices are correlated to supply chain pressures, suggesting that increased tensions in the Red Sea and SoH can significantly boost energy prices. The escalating conflict in the Middle East particularly heightens the risk to Polish commodity supplies. In 2023, Saudi Arabian oil accounted for 45% of Polish total oil imports, and Qatari gas made up 17% of its total gas imports and 40% of its LNG imports. A potential blockade of the SoH would disrupt these critical shipments, thus calling for the search for alternative sources of energy.

Figure 4.3. Poland's monthly crude oil imports in 2010-2023 (thousand tonnes)



Source: Eurostat [nrg_ti_oilm].

Figure 4.4. Poland's monthly LNG imports in 2010-2023 (bn cubic meters)



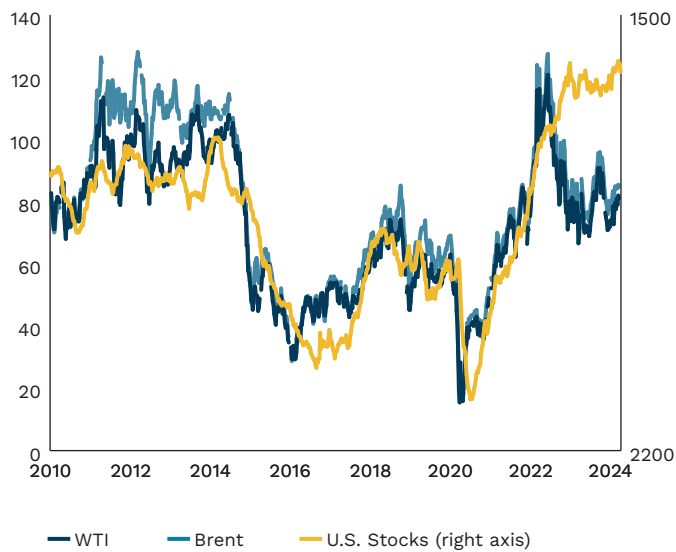
Source: Eurostat [nrg_ti_gasm].

-0.1%

daily decrease in Brent crude oil price on April 15, 2024, despite Iran's attack on Israel

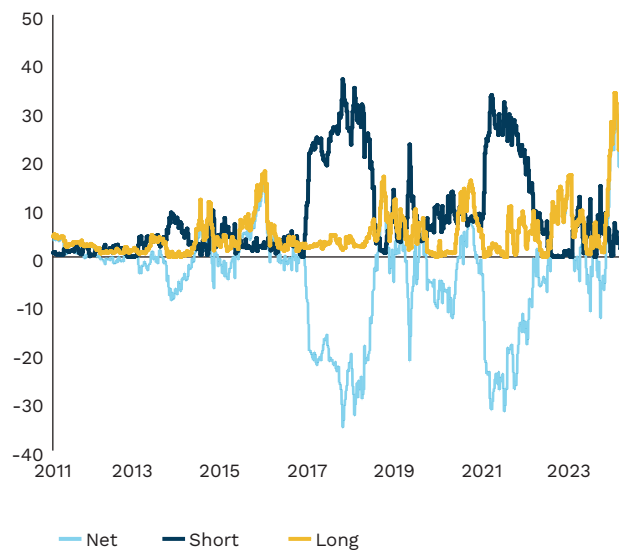
► **Considering the relatively stable oil supply, the prospect of future price movements comes into question.** Goldman Sachs has indicated that they do not anticipate a clear upside to oil prices. Similarly, commodity analysts at ANZ Research believe that a near-term surge in oil prices is unlikely, given that a high geopolitical risk premium has already been factored into prices. This underscores the volatility of the current commodity market, where fundamentals suggest a further increase in prices. For instance, European gas prices at the TTF hub have risen by almost 20% since mid-March. Despite the end of the heating season and high gas storage levels, these prices are the highest since the beginning of January 2024, driven by a potential tightening in the LNG market. In the oil market, the low level of U.S. stocks of total oil and petroleum products, coupled with a positive speculative net position (indicative of a predominance of long positions, which assume rising prices), suggests higher future prices. Currently, traders remain relatively calm, but an escalation of conflict in the Middle East could significantly heighten uncertainty in global energy markets in the coming months.

Figure 4.5. Oil prices (USD/barrel, left axis) vs US stocks of total oil and petroleum products (thousand barrels, right axis)



Source: EIA, ICE.

Figure 4.6. Speculative net position – Brent crude oil (in thousand lots)



Source: CFTC COT.

Green Public Finance Management frameworks – a summary

► The more frequent occurrence of extreme weather events is affecting public finances. Governments are more often implementing new rules relating to budget management. The article presents a short summary of green budgeting policies.

► **Green Public Financial Management (PFM) practices are a part of public finances.** Budgeting public funds sensibly requires us to consider and prioritize them appropriately. Every fiscal policy has an impact on the climate. The actions of governments directly or indirectly affect the climate, and responsible policies should take into account the ongoing changes. Many international organizations propose appropriate 'green financial management' precisely within the framework of PFM. In green public financial management, the aim is to ensure that climate changes are considered at every stage of fiscal and budgetary policy, from design to implementation, to ensure that they work towards, rather than against, achieving climate goals.

► The IMF defines PFM as follows: Green PFM is the integration of a climate-friendly perspective into PFM practices, systems, and frameworks – especially the budget process – to promote fiscal policies that are responsive to climate and environmental concerns. Green PFM is rather about adapting existing practices to make them more climate sensitive.

► As part of appropriate management, the IMF proposes actions in five areas:

- Climate-aware planning. Including: National and sectoral public investment planning; Spatial planning-land use regulations and building codes; Centralized guidance and support for planning.
- Coordination. Including: Coordination across central government; Coordination with sub-national governments; Coordination with and oversight of public corporations.
- Project appraisal and selection. Including: Project appraisal with climate change; PPP framework and allocation of climate risks; Project selection with climate change.
- Budgeting and portfolio management. Including: Tagging of climate-related public investment expenditures; Ex post reviews of climate outcomes; Asset management and maintenance with climate change.
- Risk management. Including: National disaster risk management strategy; Ex ante financing mechanisms to manage climate risks; Fiscal risk analysis with climate change.

► **Countries are slowly integrating climate change considerations into budgeting.** The World Bank's 2021 report indicates that only 19 countries worldwide have implemented some form of climate budget tagging. The pace at which these solutions are implemented is likely to increase.

► **In the Netherlands, there is a nationwide system in place for managing energy transformation. National and regional energy suppliers are working with local governments on more than 30 regional transformation strategies to help achieve national zero-emission targets. These regional strategies aim to ensure coordinated action on renewables. To this end, a national platform has been set up to facilitate the whole process and act as a facilitator. It develops a clear implementation framework for all stakeholders, builds a common data and information base, supports building the capacity of the stakeholders, and develops communities of practitioners to share knowledge and experience.**

► **Since 2021, France has been publishing a green budget as an annex to the budget law.** Provides an assessment of the ‘green’ impact of all state budget expenditure, including tax expenditure. Not only does it reflect climate change concerns, but also other environmental issues such as biodiversity protection and pollution control. And not only does it assess environmentally beneficial expenditure, but also those with negative impacts.

The Polish Economic Institute

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