

Black Swans & Grey Rhinos

...and how to deal with them

May 2026

Simon Frost

FR  **ST**
PROCUREMENT ADVENTURER



Founder

Tom Bundgaard

 **Expana**



VP Price Forecasting

Janet Standing

 **Expana**



Advisory Board Member

Expana overview

Expana is the largest IOSCO-assured, market leader in independent global commodity data, price forecasts, and hedging advice.

Our new platform is built on the successes of our legacy brands, which paired independent price data alongside powerful cost modelling analytics and tools within customer workflows, supporting procurement, sourcing, and category management functions and driving significant cost savings.



200+ Years

of experience in global data collection

30,000+

collected and curated independent raw material prices

70 million+

Market data & commodity price points released each year

Top Brands

trust us to deliver the very best data

1000+ Forecasts

& 70+ hedging recommendations

25%

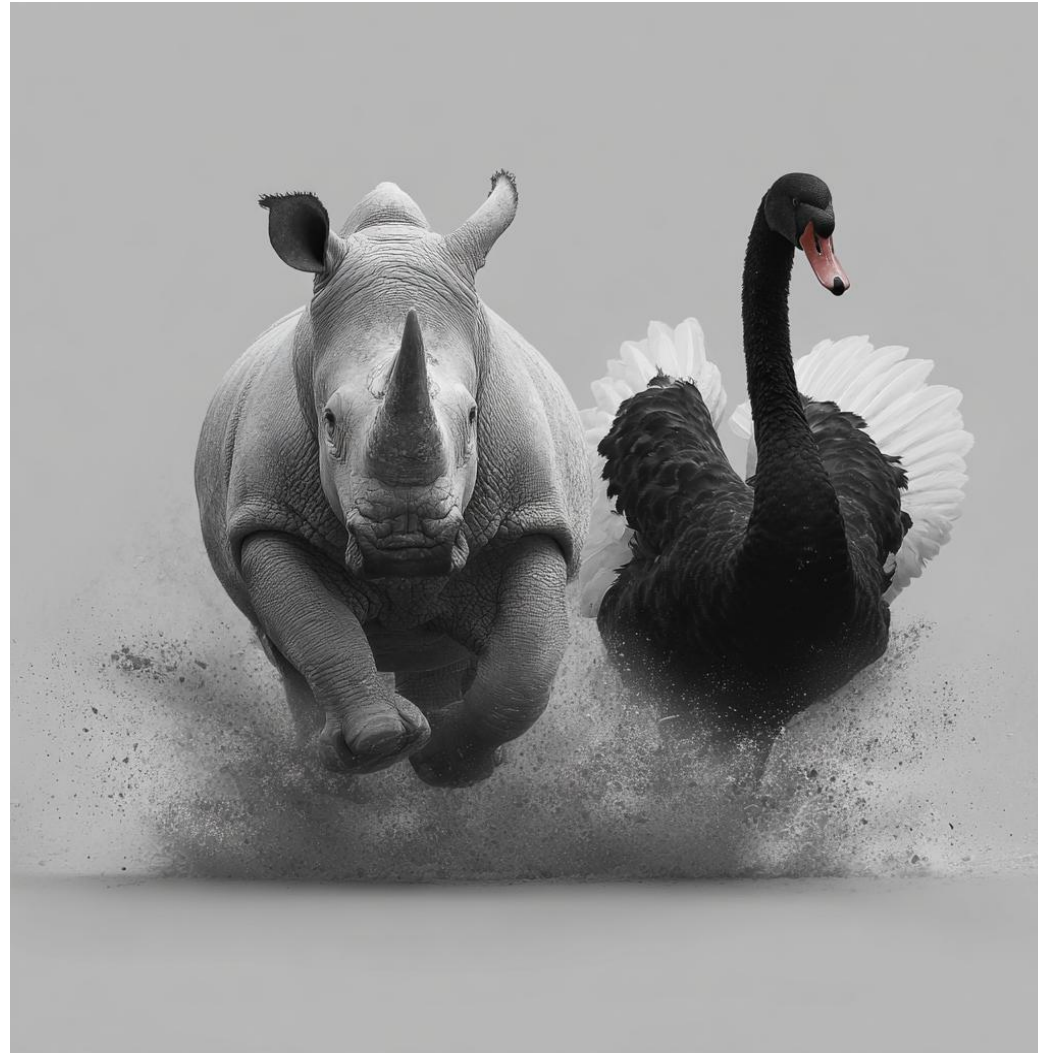
of Expana's food data are proprietary by usage

WHY

did we decide to do this webinar?

Because the world is having to deal with:

Grey Rhinos



Black Swans

The difference between them is:

	Grey Rhinos	Black Swans
Characteristics	<ul style="list-style-type: none"> • Obvious but ignored • Signals visible for months/years • Problem gets progressively worse • Big force difficult to stop 	<ul style="list-style-type: none"> • Crisis events • Usually unforeseen • Happen suddenly • Often unique
Examples	<ul style="list-style-type: none"> • Orange • Cocoa • Coffee • Tomato 	<ul style="list-style-type: none"> • Covid • Tsunami, Ash Cloud • Ukraine • Tariff trade wars
Causes	<ul style="list-style-type: none"> • Economic Shifts • Climate Change • Pests & Diseases • Population Growth 	<ul style="list-style-type: none"> • Freak weather or natural disaster • Geopolitics • Logistics disaster • Industrial disaster

They cause significant challenges:

✘ Forecasting & Budgeting

✘ Cost Risk

✘ Supply Risk

✘ Quality Risk

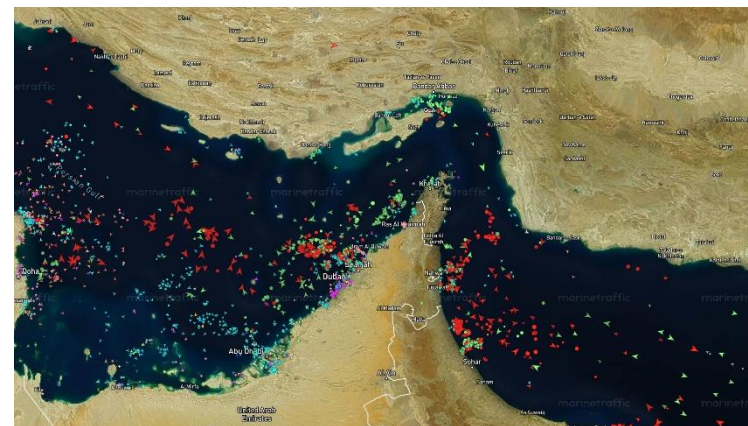
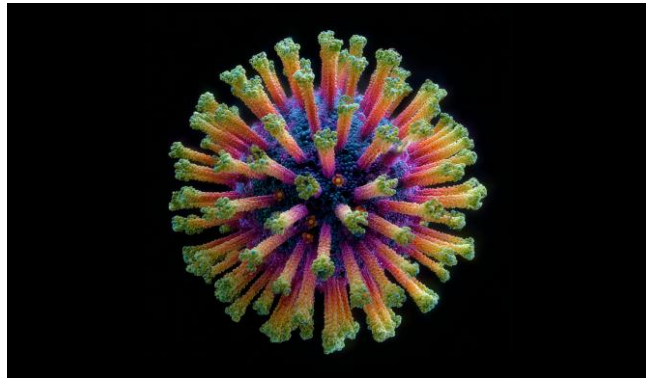
✘ Turbulence Risk (winners and losers)

= HUGE Business Disruption and MAJOR business risk

There are several important questions:

1. How can you **prepare**?
2. What **signals** do you get?
3. How do you **decide** what to do?
4. What **actions** do you need to take?

1. Understanding Black Swans



Every year, one or more Black Swan Events occur:

Mexico Earthquake	1985
Chernobyl	1986
Black Monday Crash	1987
Piper Alpha	1988
Exxon Valdez	1989
Iraq/Kuwait War	1990
Collapse of Soviet Union	1991
Mt Pinatubo erupts	1992
Black Wed/ERM Crash	1994
Mexico Peso Crisis	1995
Kobe Earthquake	1997
Asian Financial Crisis	1998
Russia debt default	1999
Turkey Earthquake	2000
Dot-com Crash	2001
9/11 Attack	2002
Argentina debt crisis	2003
SARS	2004
European Heatwave	2005
Iraq War 2	2007
Indian Ocean Tsunami	2009
Hurricane Katrina	2010
Global Financial Crisis	2011
H1N1 Influenza Pandemic	
Arab Spring	
Deepwater Spill	
Haiti Earthquake	
Icelandic Ash Cloud	
Eurozone debt crisis	
Fukushima Nuclear	
Tohoku Tsunami	
Crimea Annexation	
Ebola	
Chinese stock turbulence	
Brexit	
Wanna Cyber Ransome	
US/China Trade War	
Australian Wildfires	
Saudi Aramco attack	
Covid	
Negative Oil Price	
Afganistan falls	
Suez Canal blockage	
Pakistan Floods	
UK Gilt Crisis	
Ukraine War	
Israel/Hamas Escaltion	
Red Sea shipping attacks	
Silicon Vally Bank Failure	
Turkey Earthquake 2	
Crowdstrike global IT outage	
Tarriff Trade War	
Straits of Hormuz	

Black Swans can be classified into ~9 different buckets:

1
Climate &
Extreme Weather

2
Cyber/Tech

3
Energy Shock

4
Financial Crisis

5
Industrial
Environmental

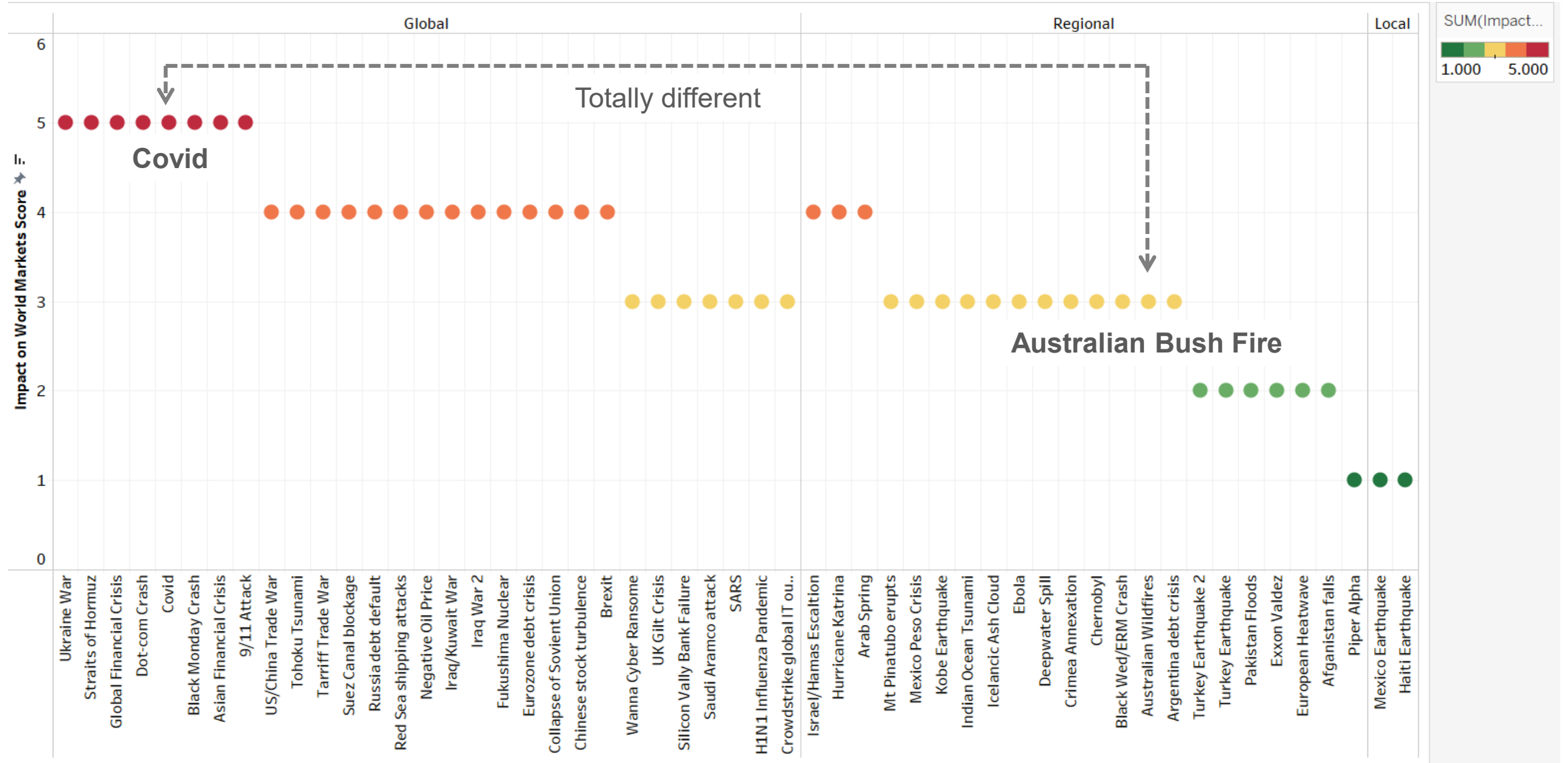
6
Natural Disaster

7
Pandemic
Health Crisis

8
Supply Chain
Disruption

9
War
Geopolitical

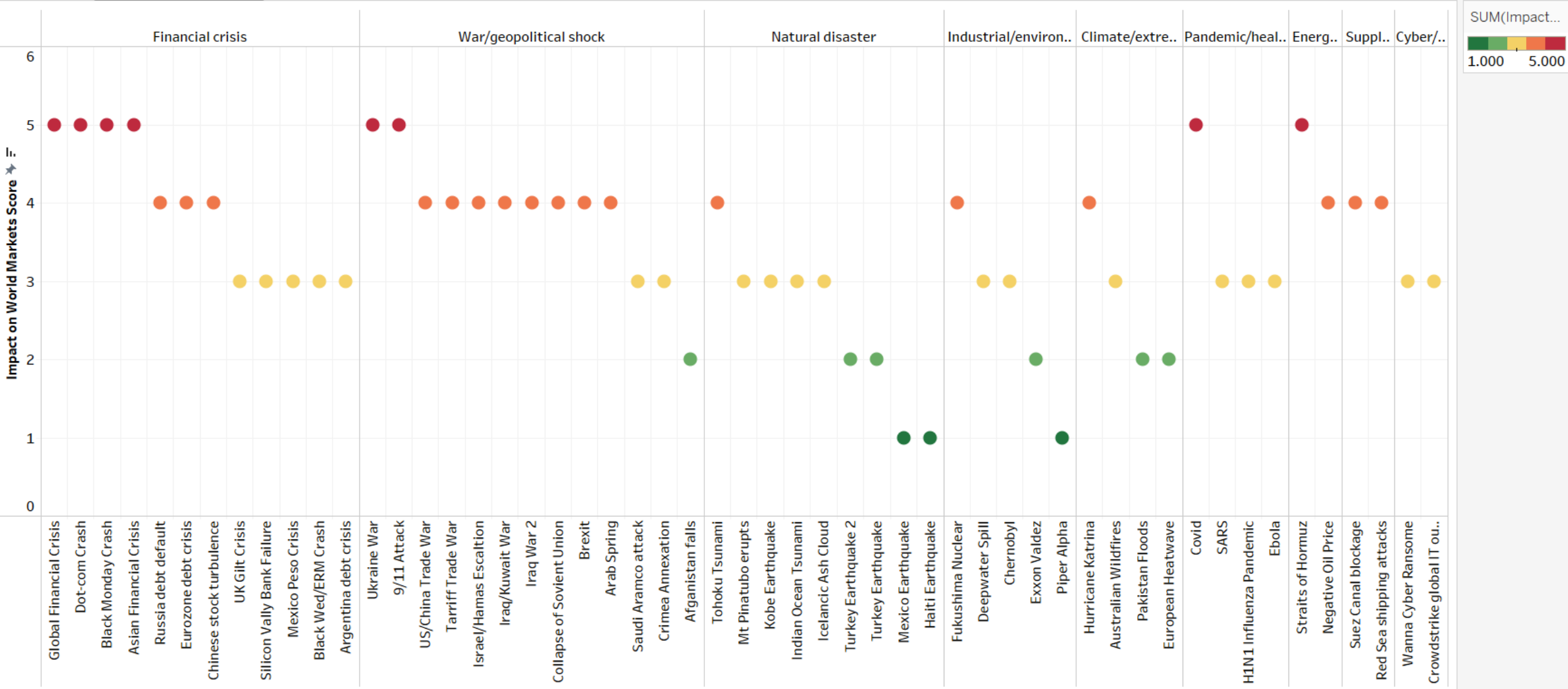
It helps to classify the event on Market Impact and Geographical Reach:



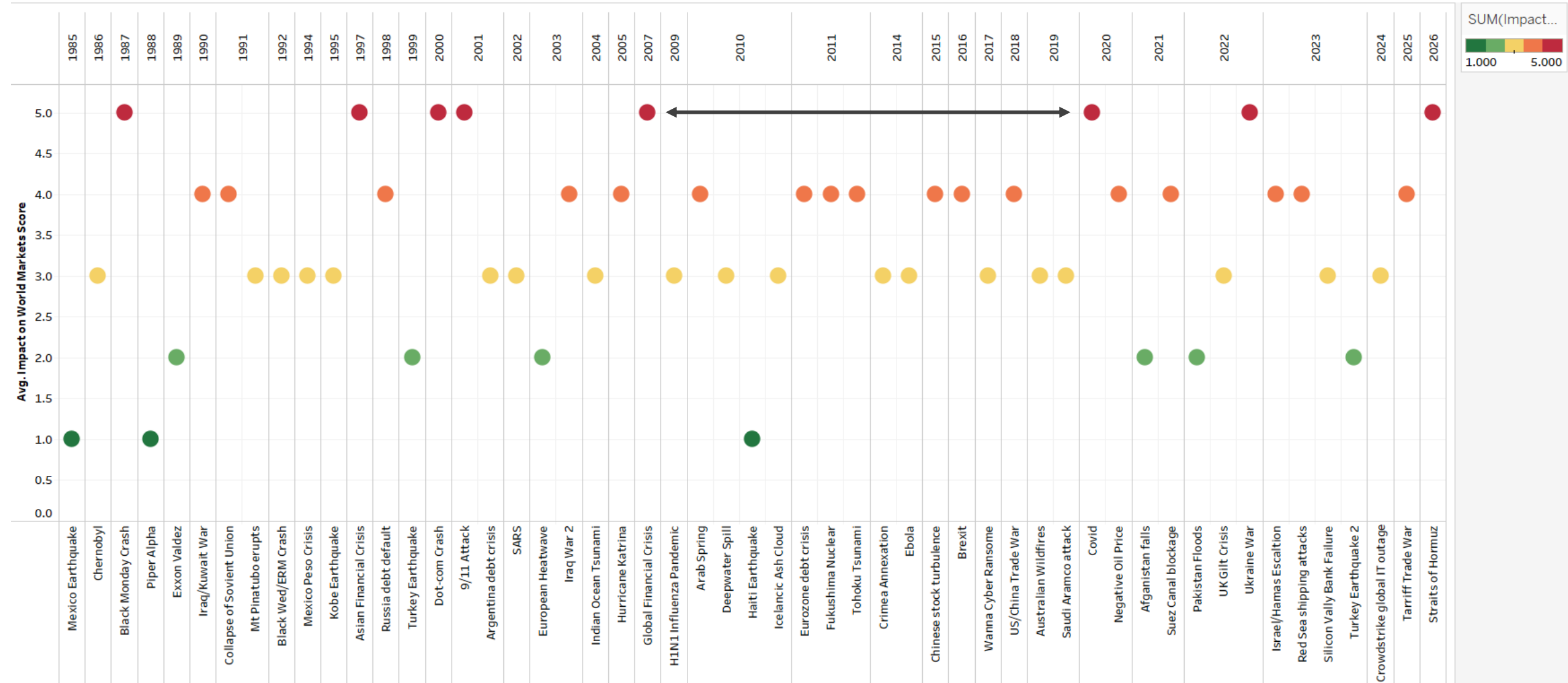
Certain types of black swan are more frequent than others:

More common

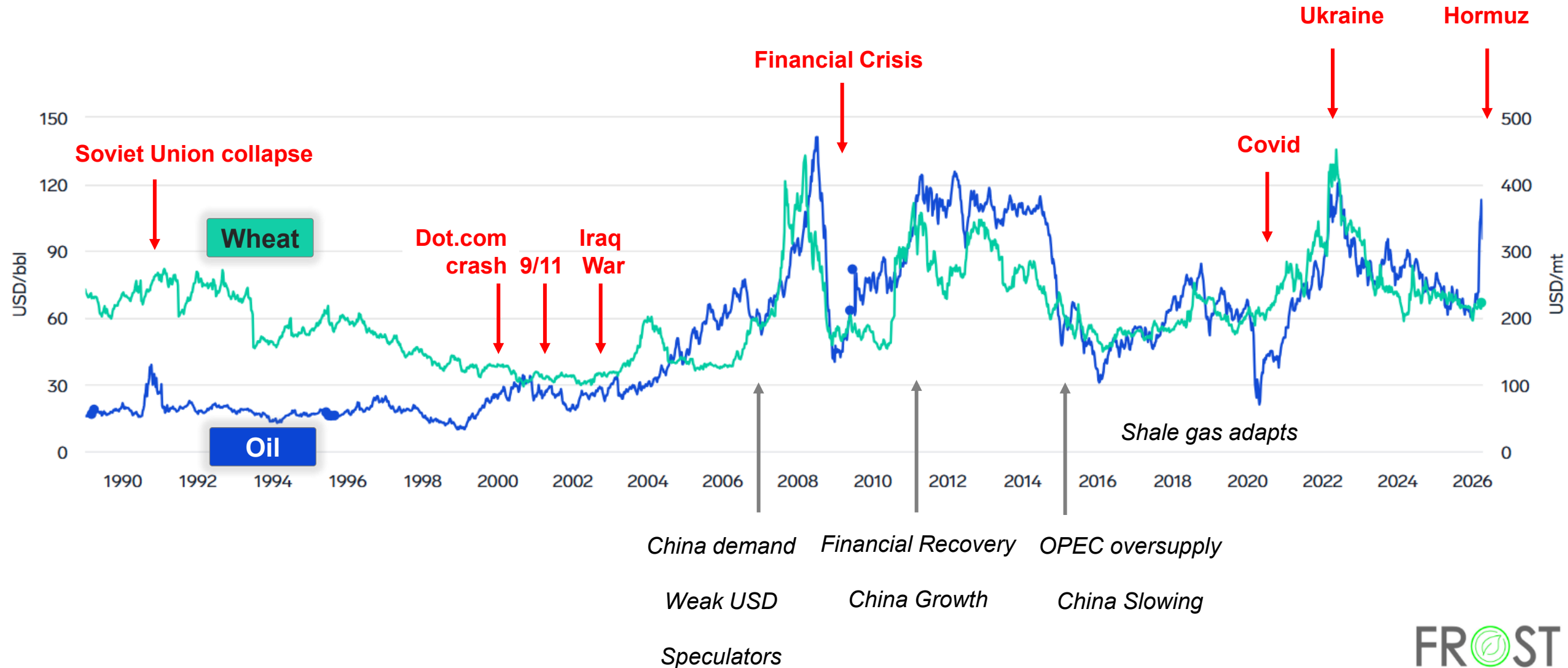
Less common



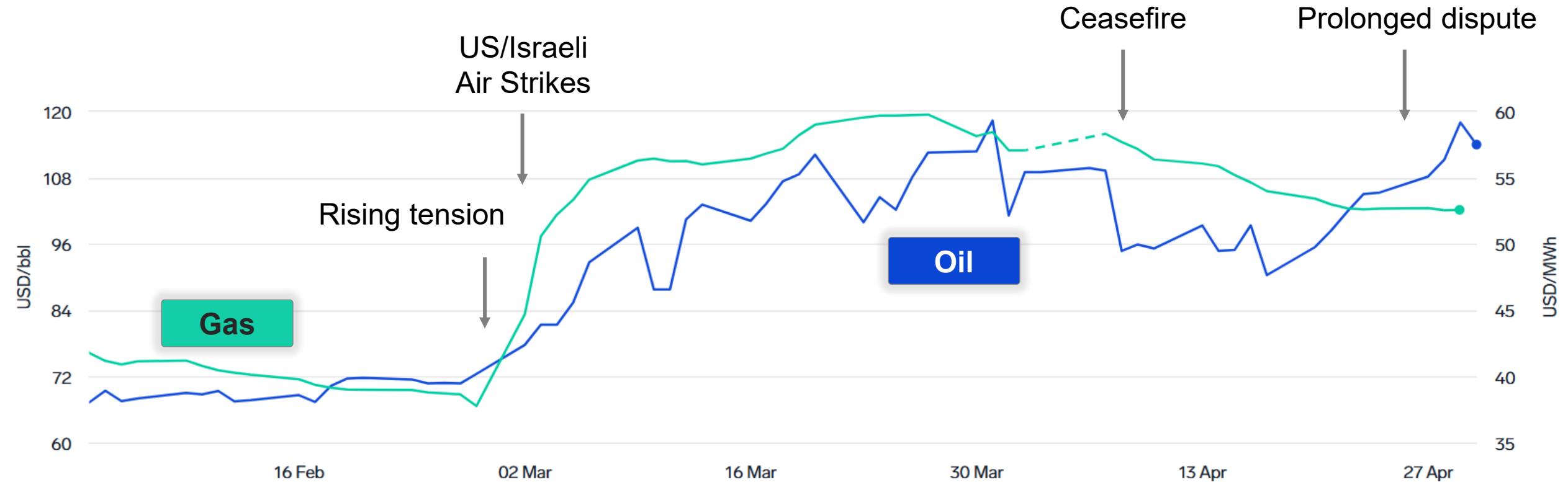
The 'biggies' may only occur every ~2-10 years:



Different black swans impact the market in different ways:

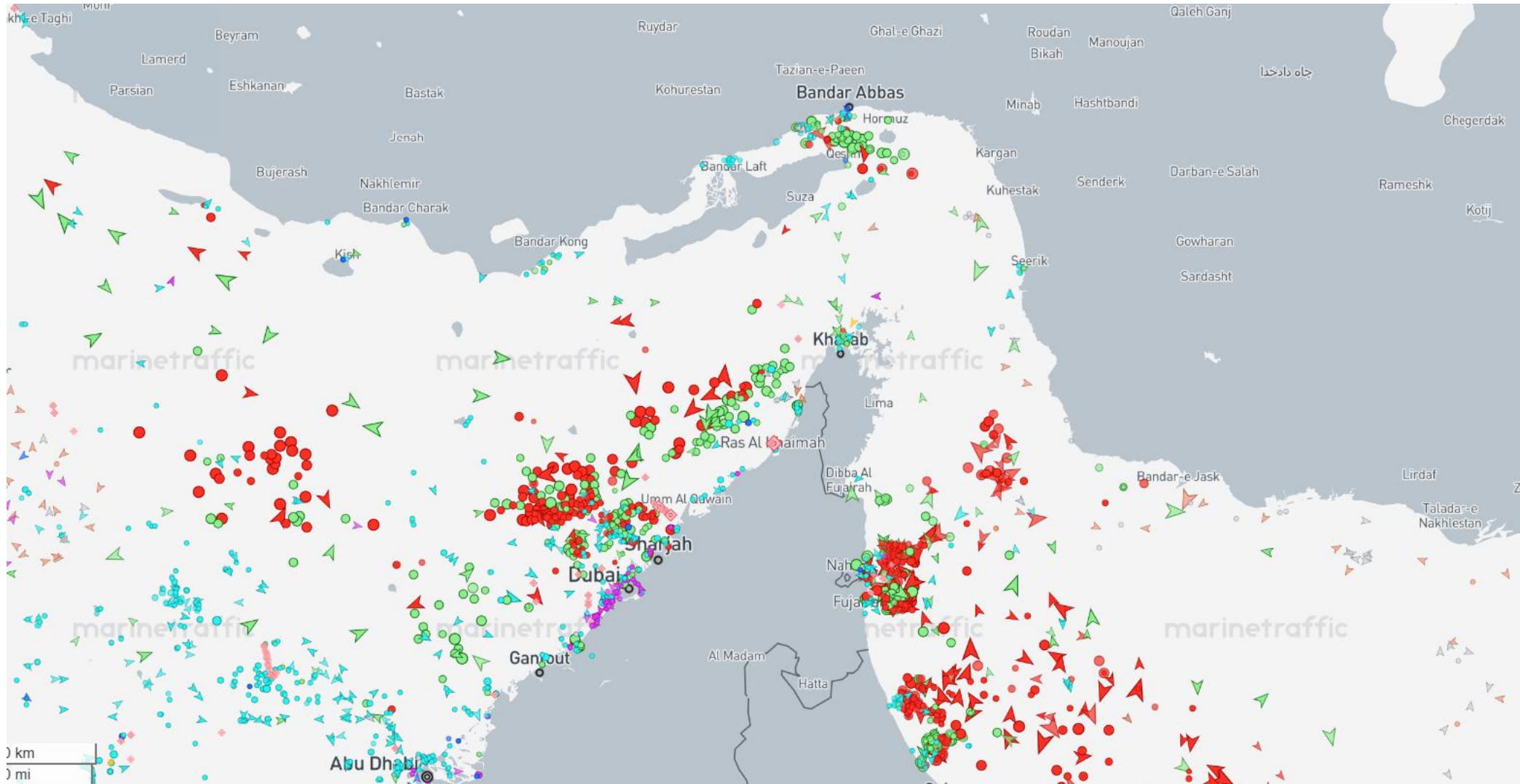


Even though the supply and price risk continue, the prices have remained in a 'fairly' narrow banding:



2. Macro Economy All Commodities Index

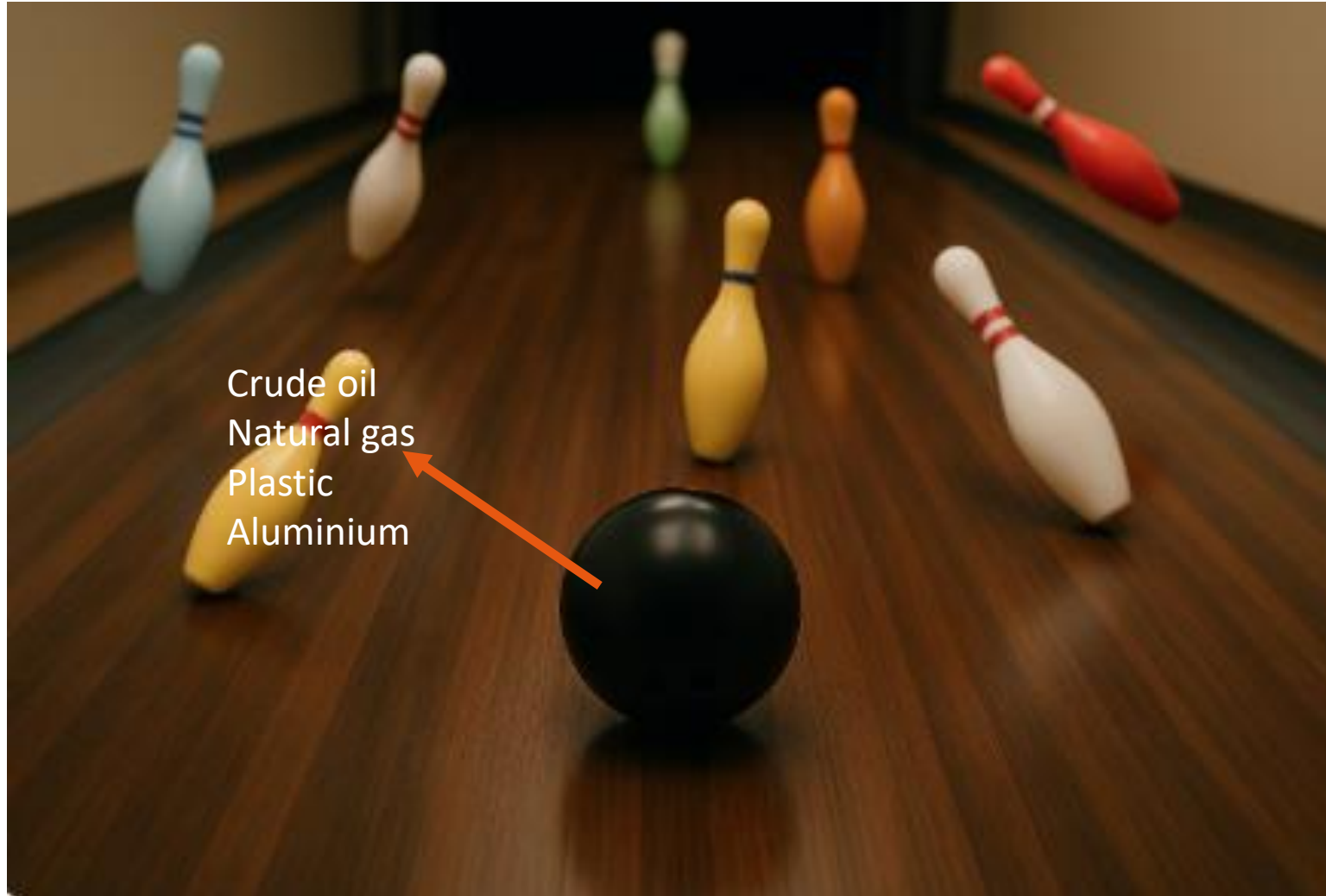
Let's review the Black Swan event of the Middle East Crisis...



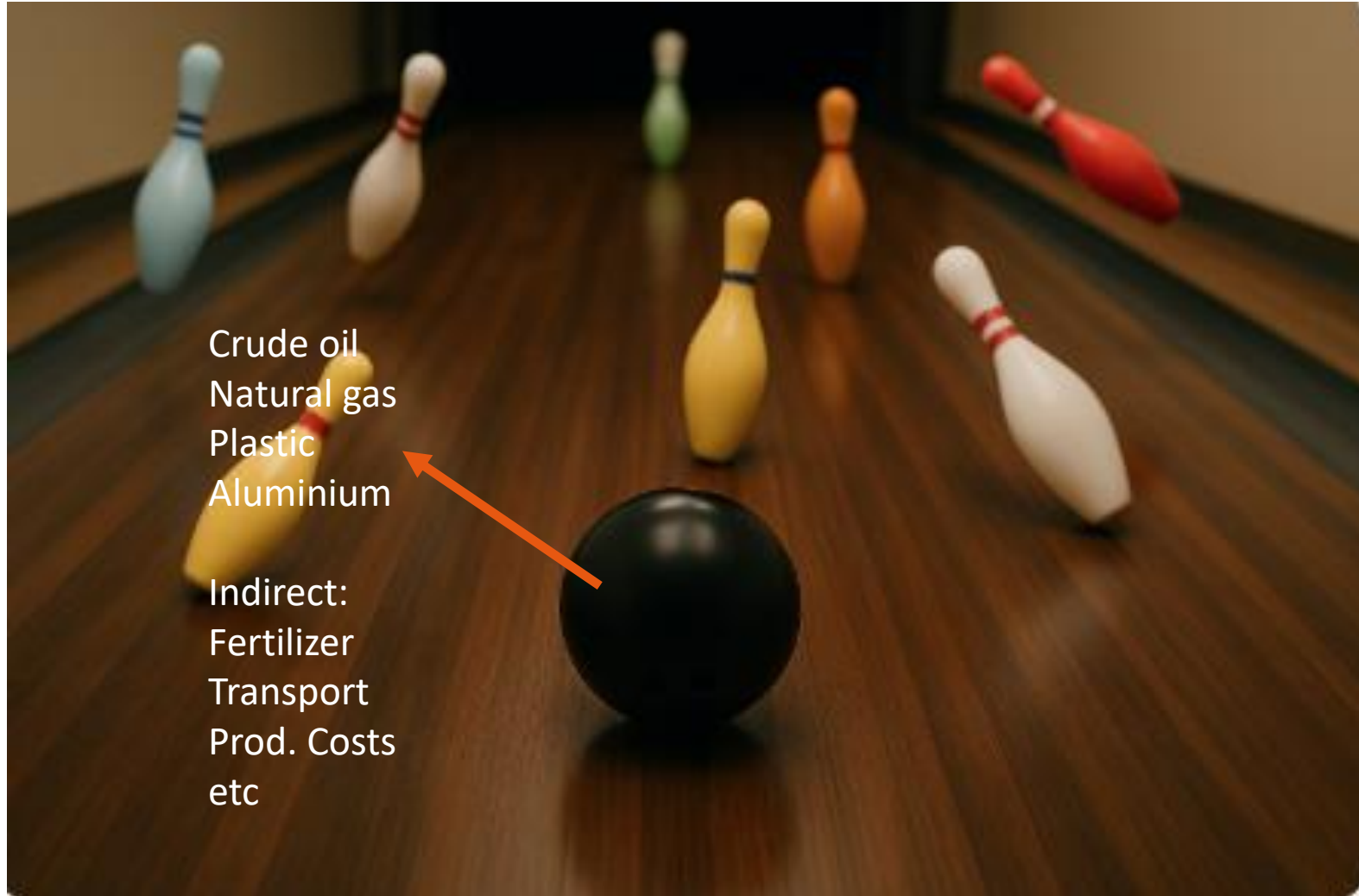
One event can trigger a chain of events



The story starts with oil:



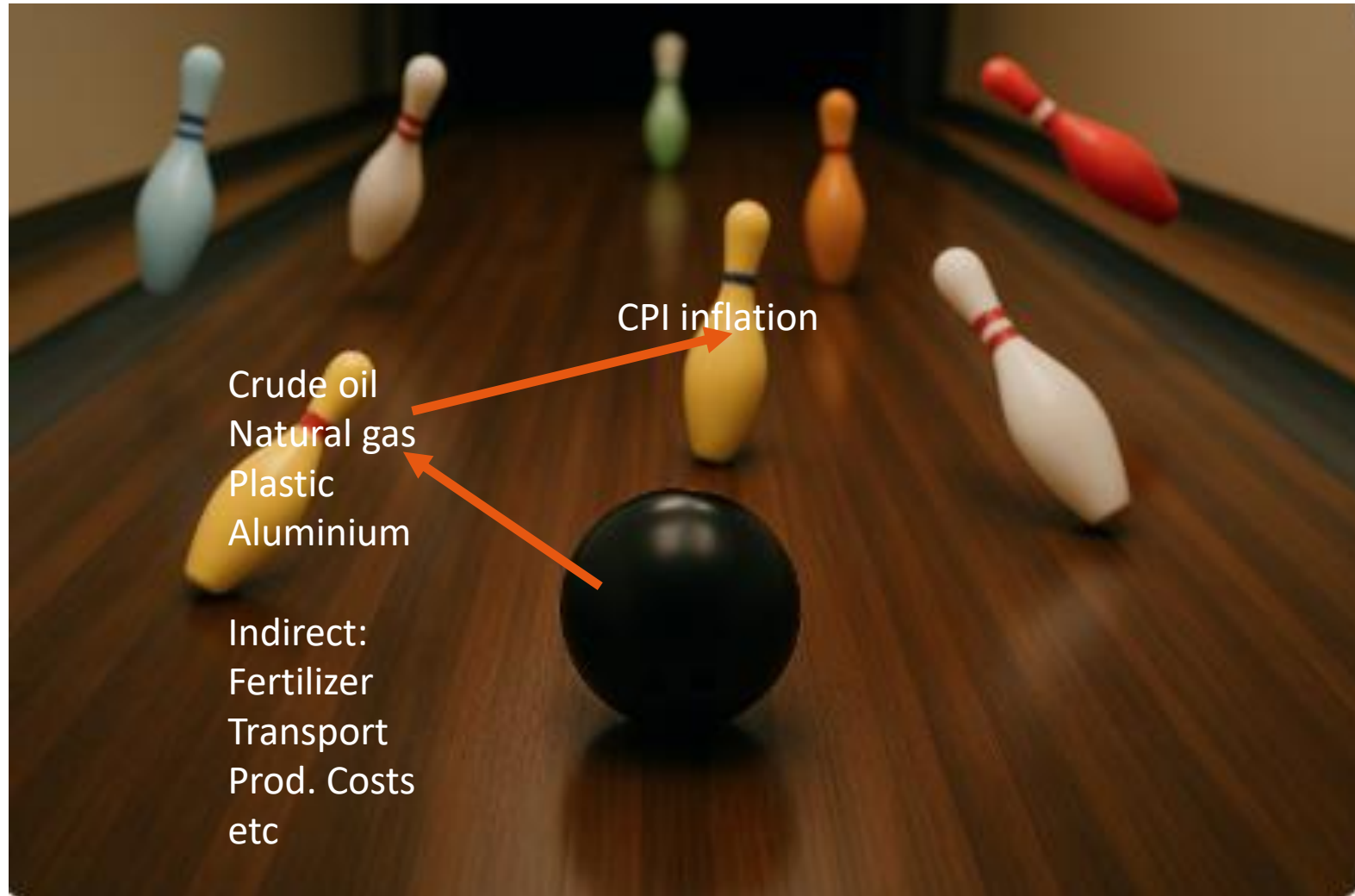
Which then leads on to other secondary materials and products:



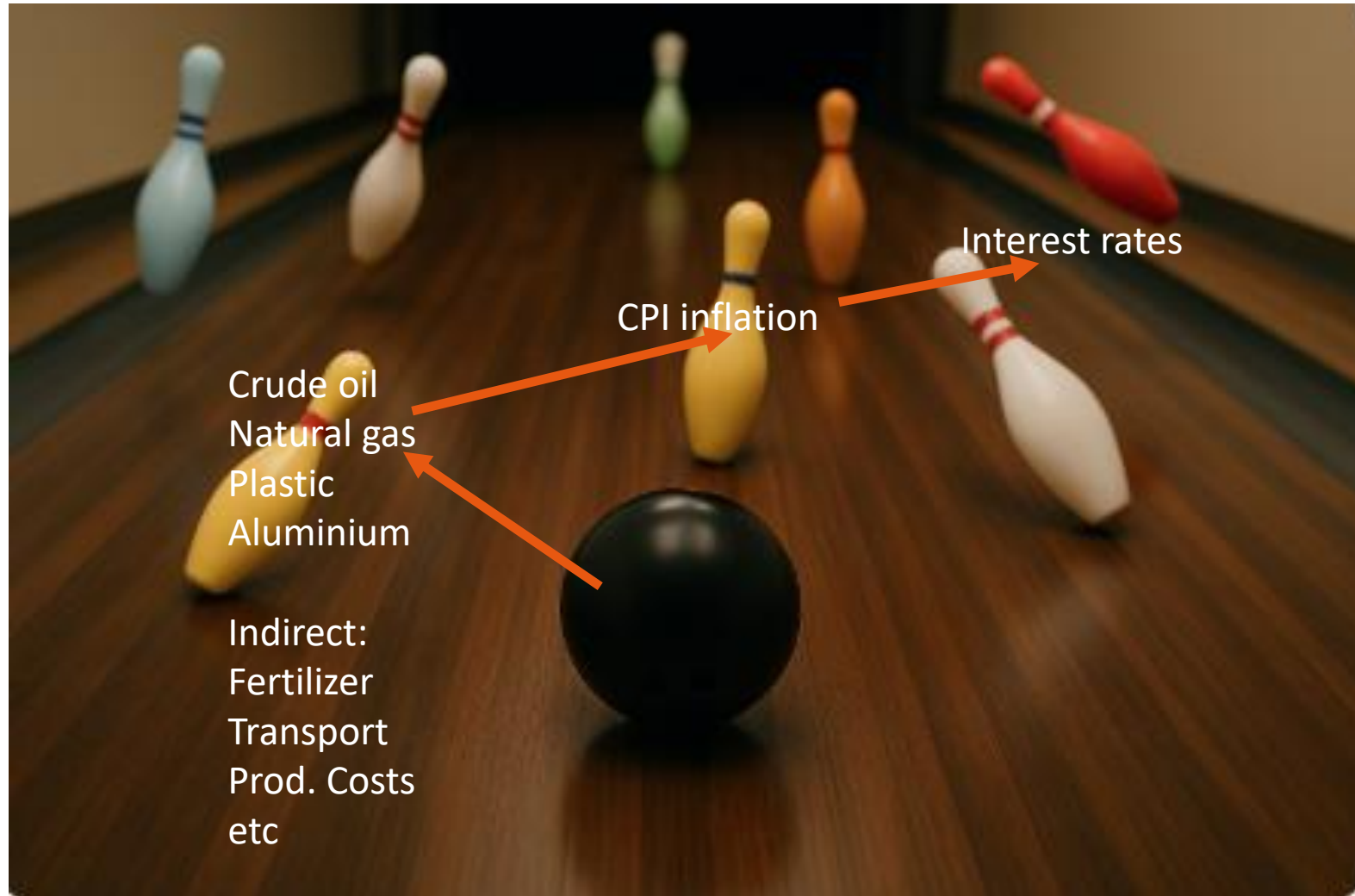
Crude oil
Natural gas
Plastic
Aluminium

Indirect:
Fertilizer
Transport
Prod. Costs
etc

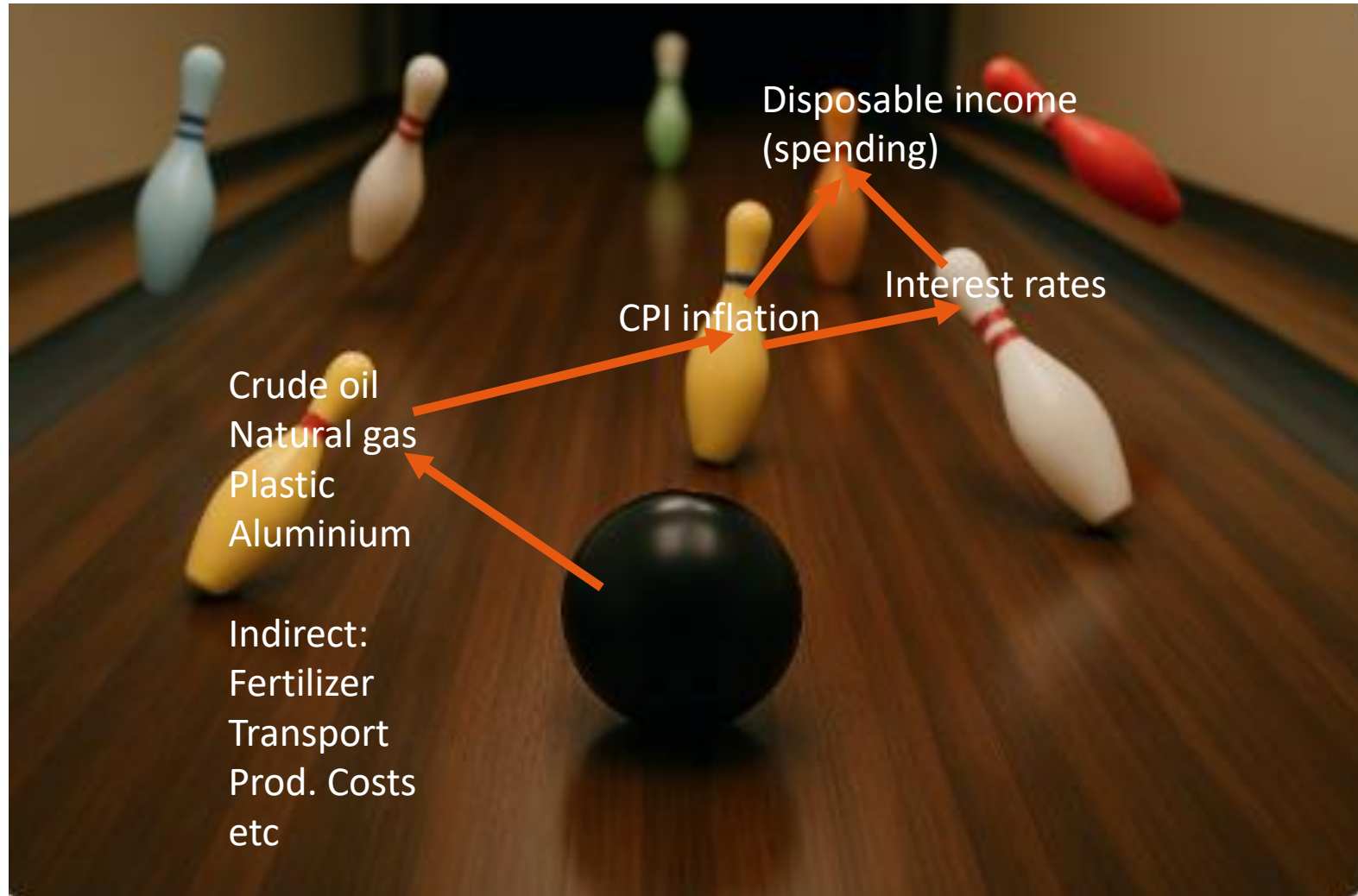
Which triggers inflation:



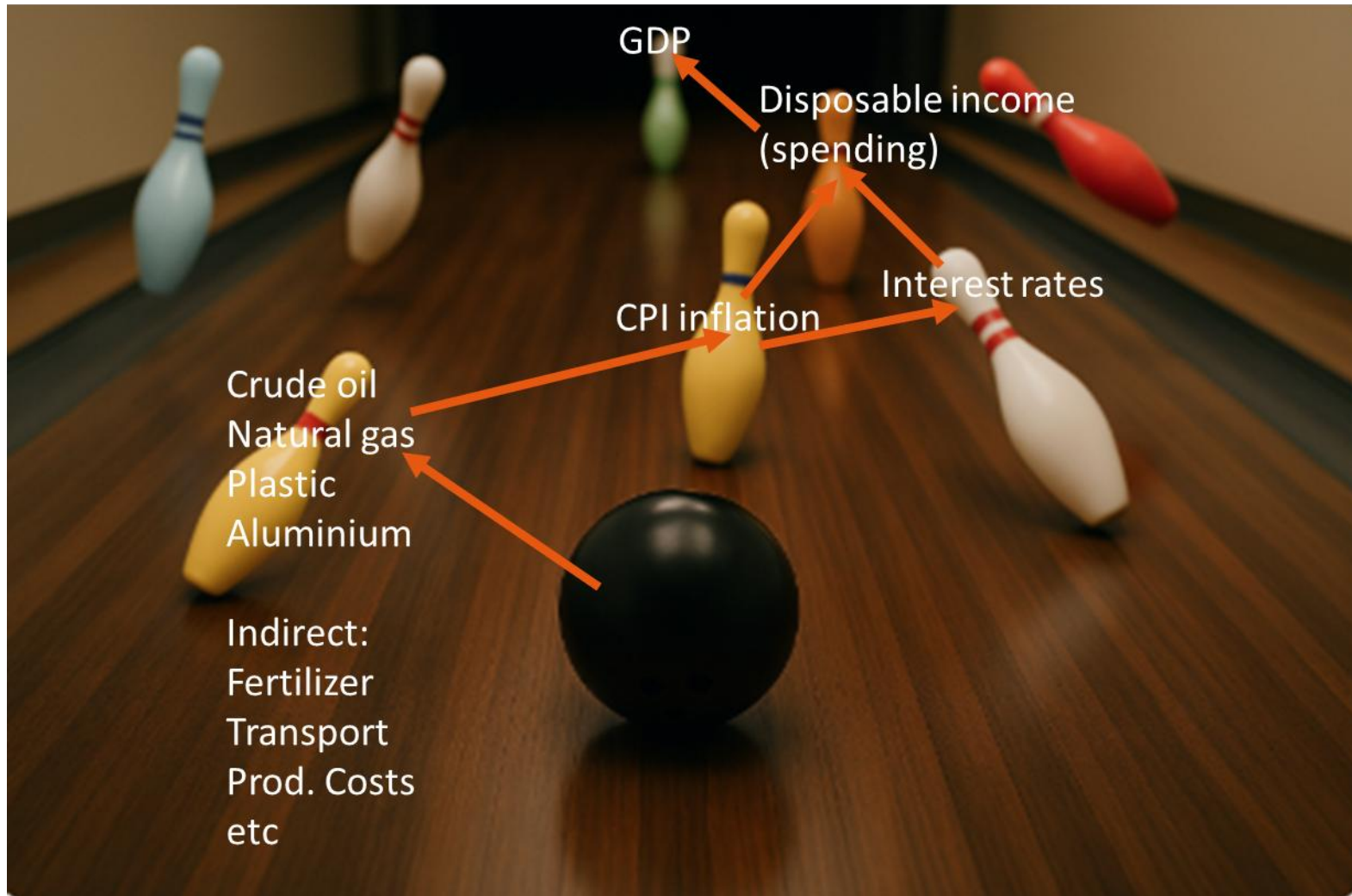
Which causes interest rates to rise:



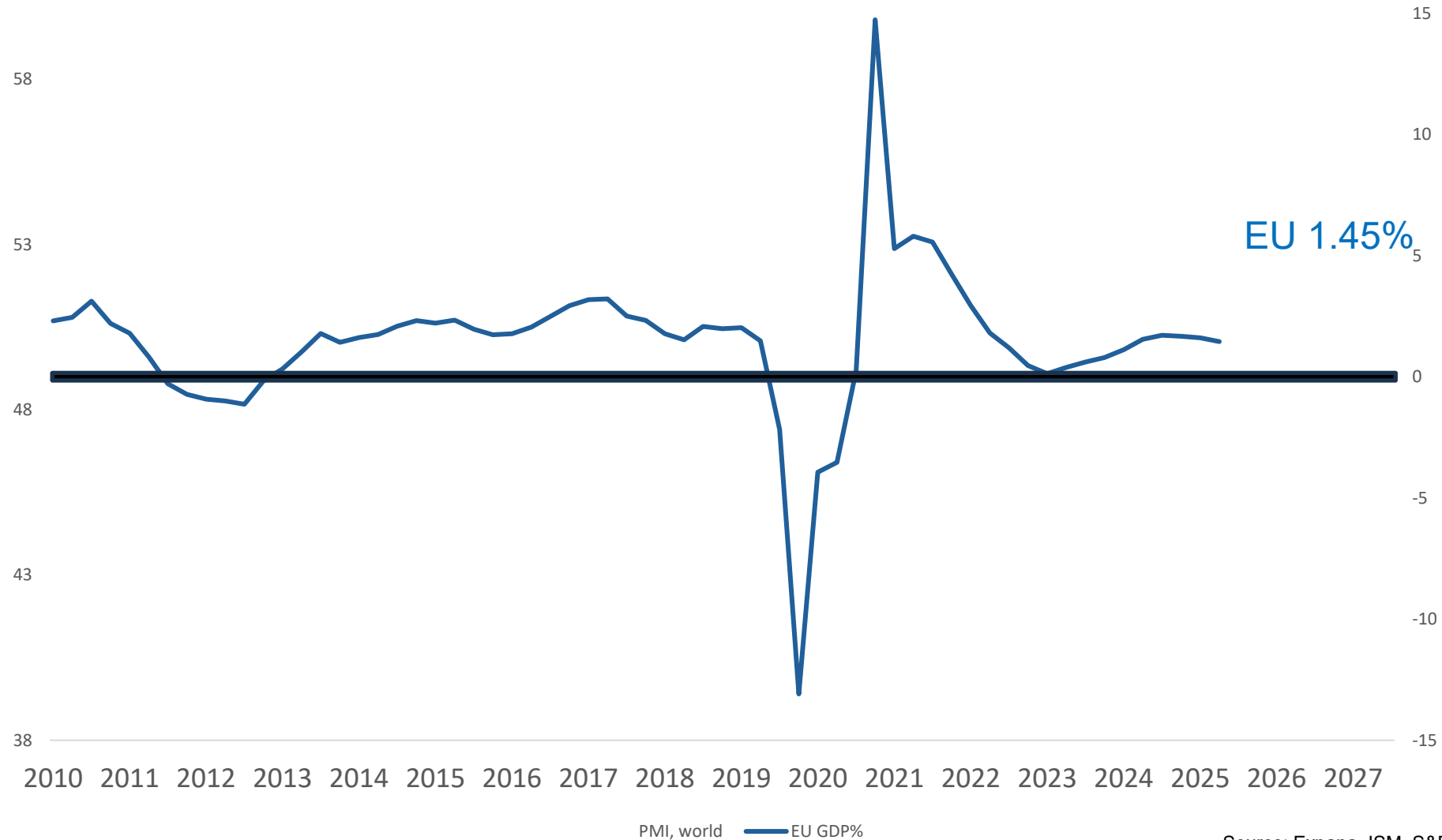
Which causes a pinch on disposable income:



Which causes a hit to GDP:

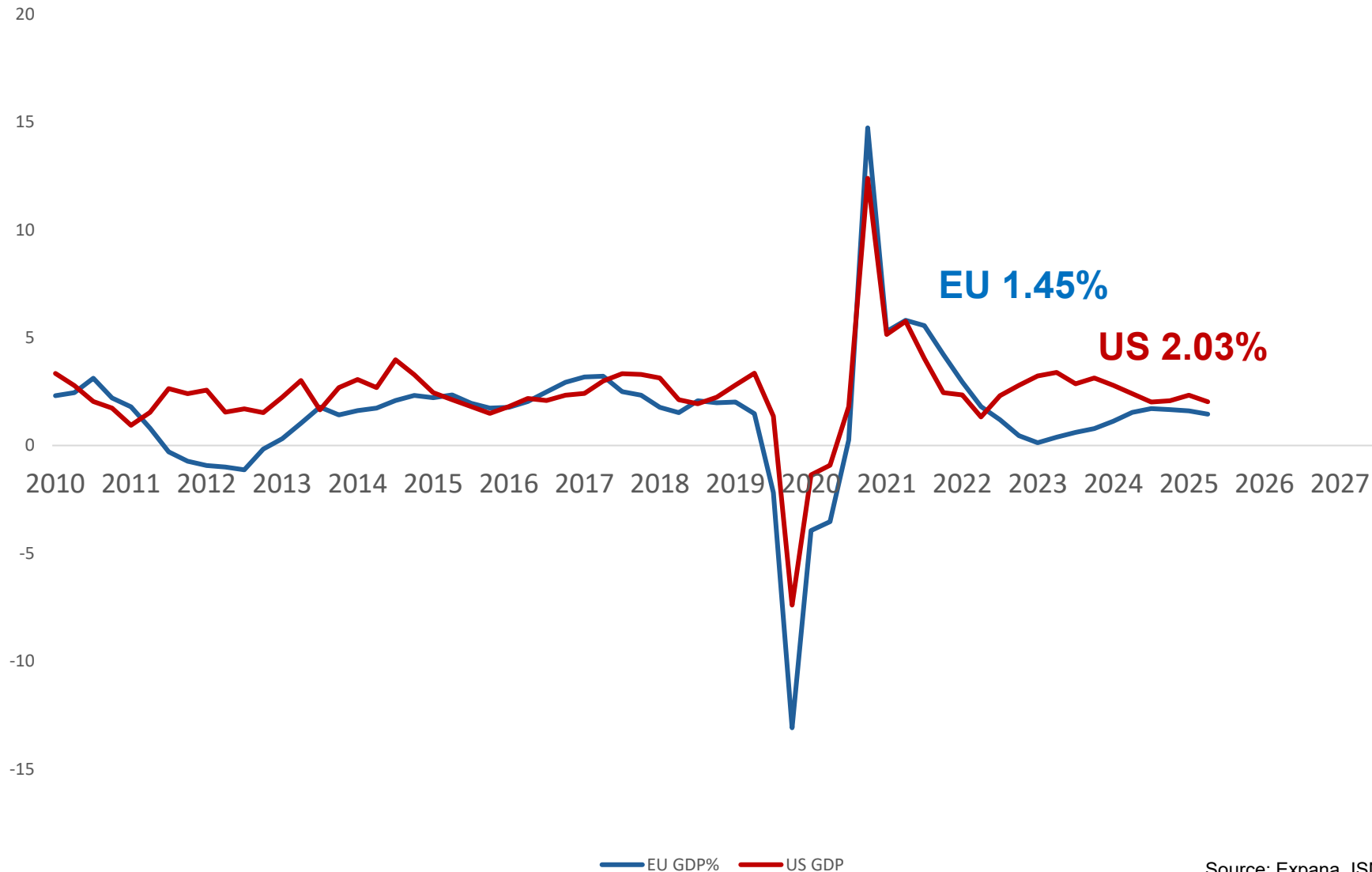


The Middle East crisis is having a negative effect on the GDP:

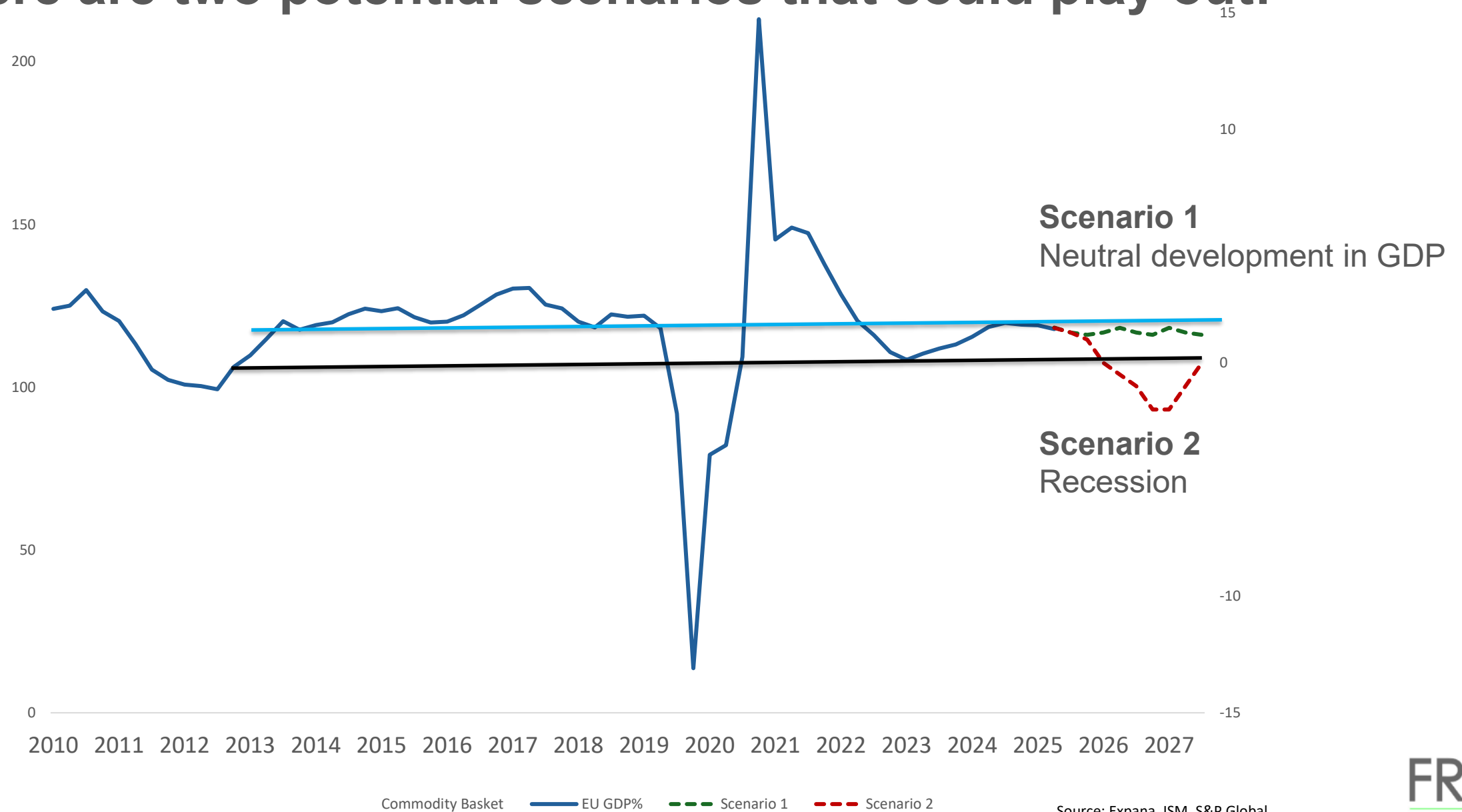


Source: Expana, ISM, S&P Global

The GDP of the two regions correlate closely:

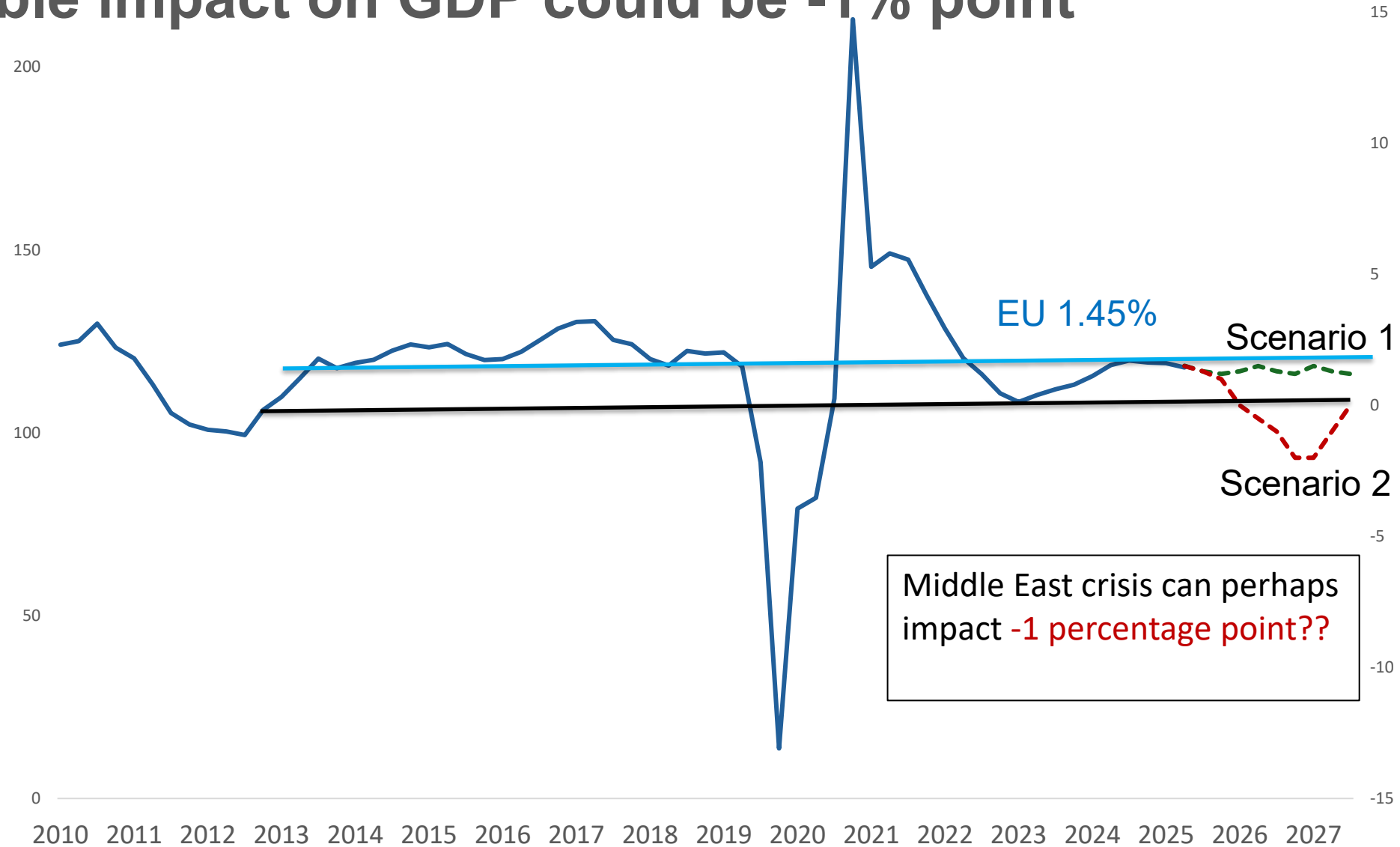


There are two potential scenarios that could play out:



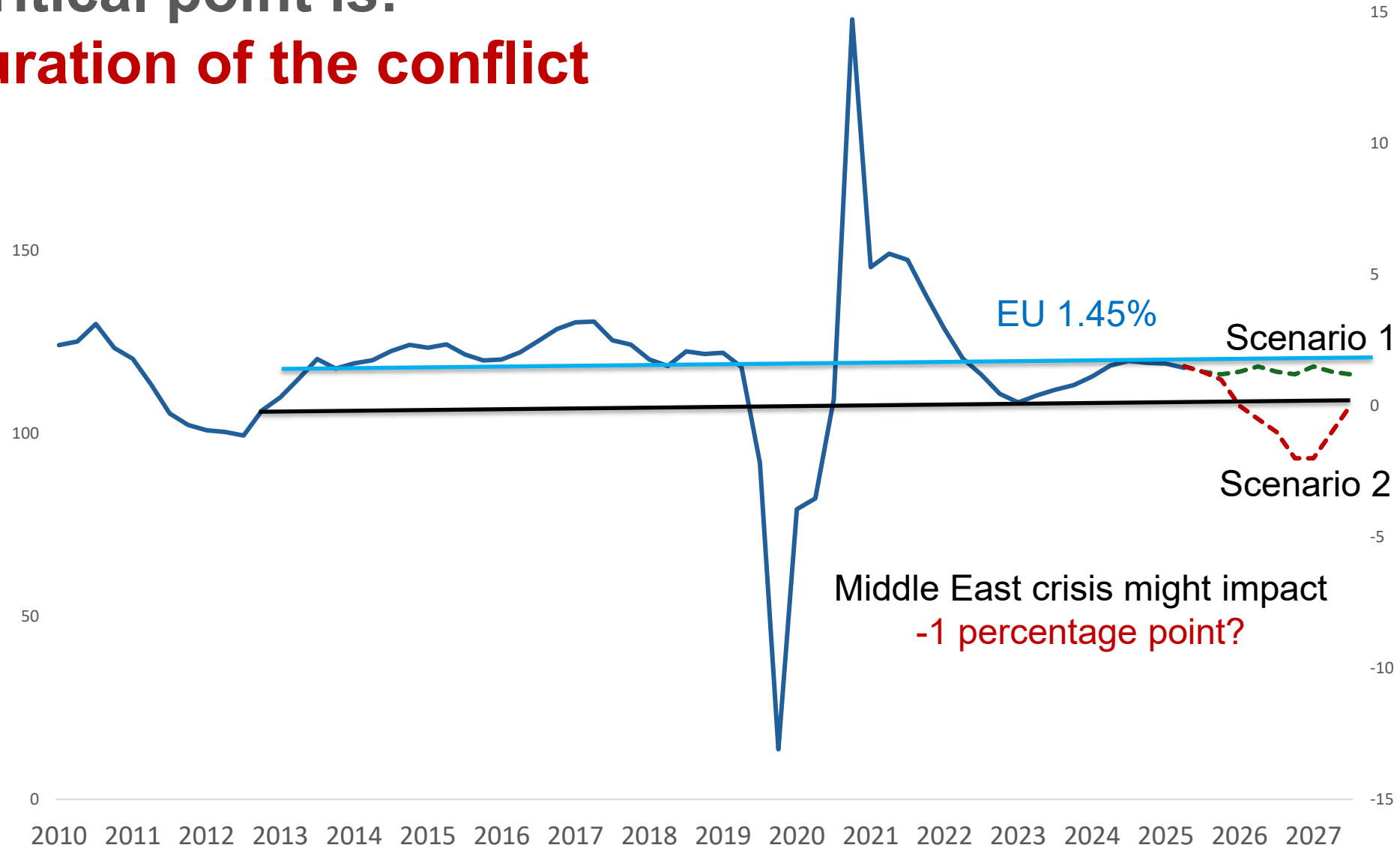
Source: Expana, ISM, S&P Global

Possible impact on GDP could be -1% point



Middle East crisis can perhaps impact -1 percentage point??

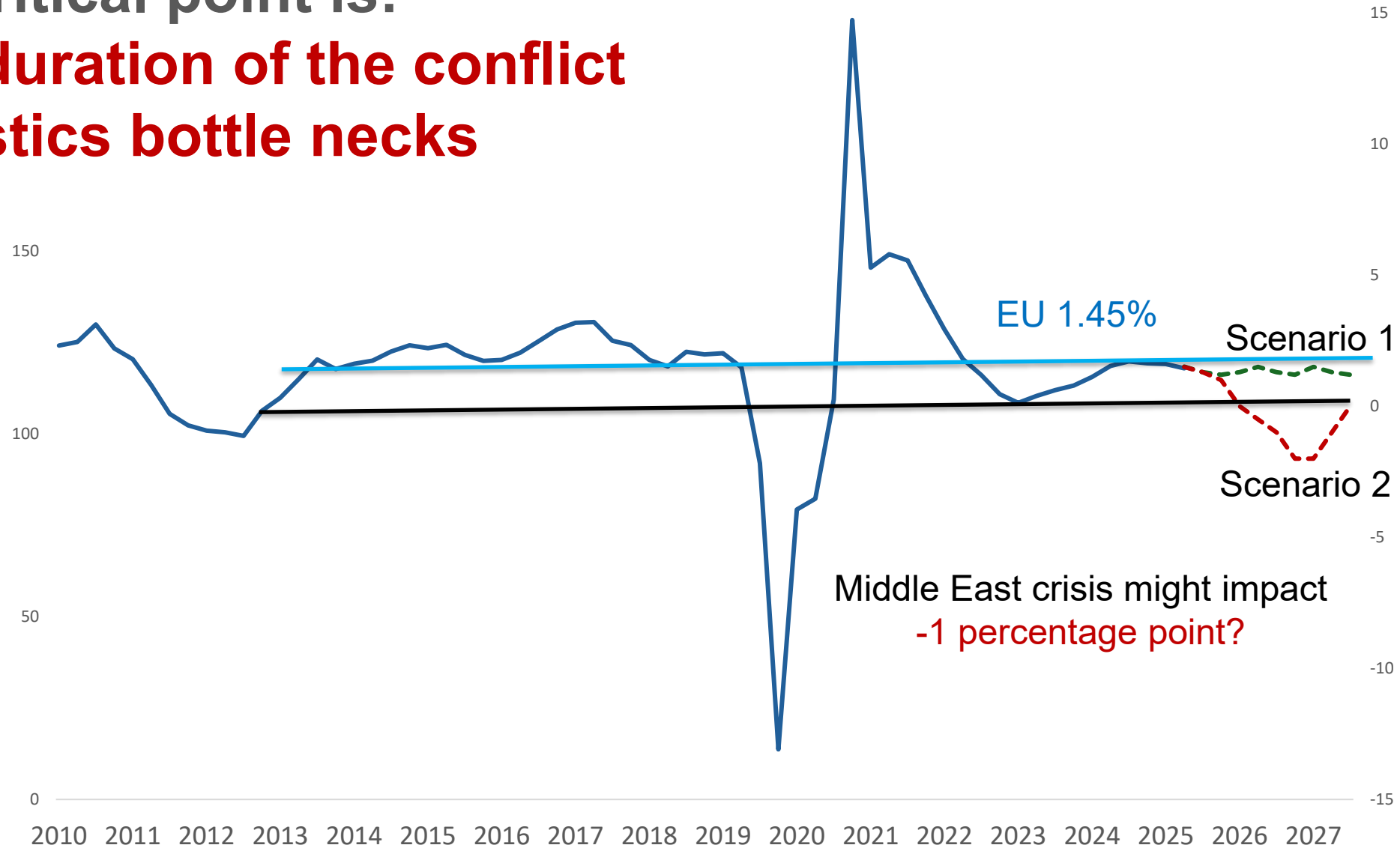
The critical point is: the duration of the conflict



Middle East crisis might impact
-1 percentage point?

The critical point is:

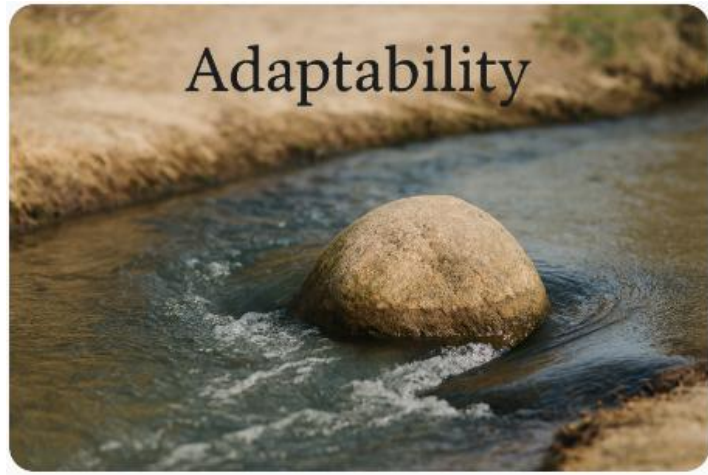
- the duration of the conflict
- logistics bottle necks



Middle East crisis might impact
-1 percentage point?

There are two dynamics that can play out:

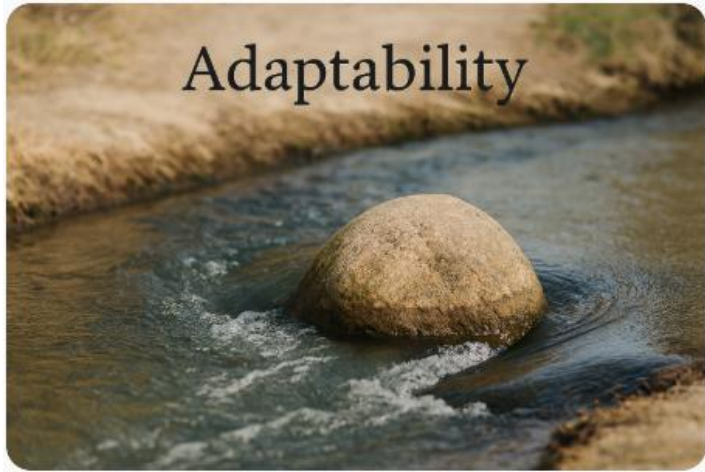
The Good



The Bad



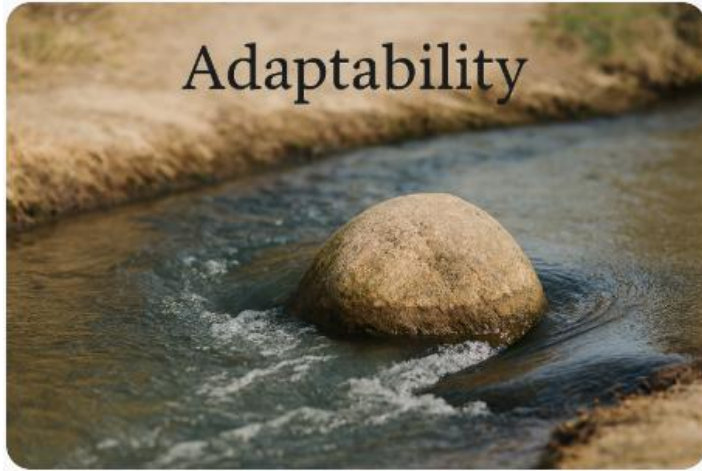
The Good



The Bad



The Good

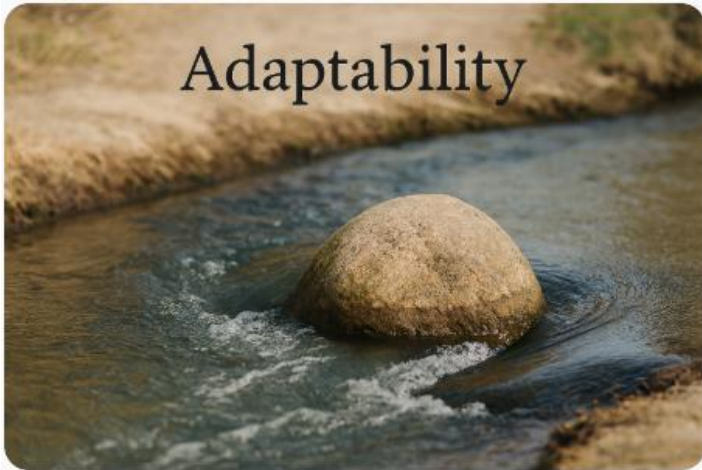


The Bad



40-50% of
the problem
“solved.”

The Good



The Bad



40-50% of the problem "solved."

Sequence:

Already strained macro fundamentals (Rhino)

↳ then Tariffs (Black Swan)

↳ then Middle East Crisis (Swan)

How big is the "compounding effect"?

The macro economy has multiple components that impact it:



**Inverted treasury
yield curve**

Unemployment

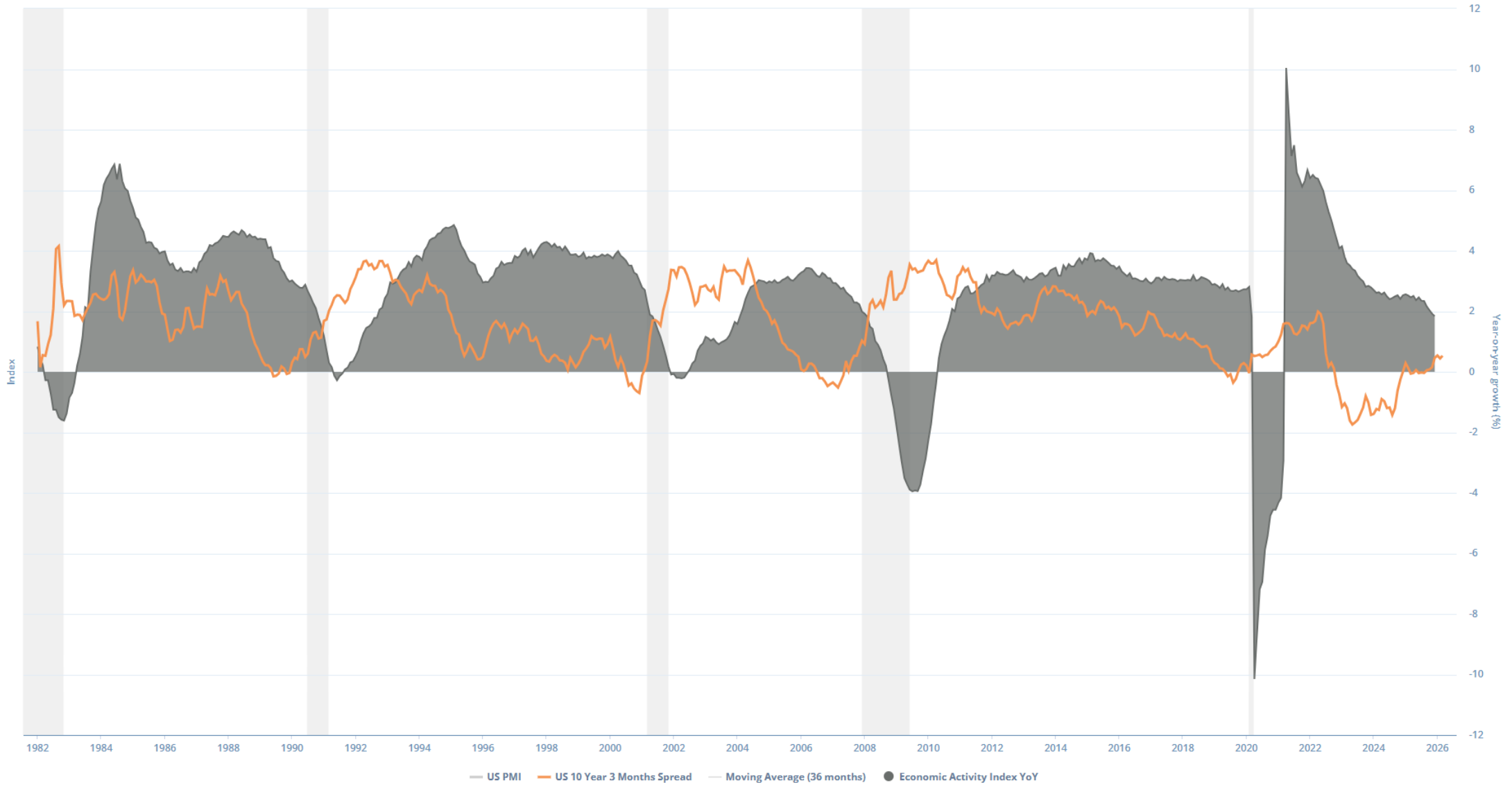
Interest rates

**Consumer
demand/sentiment**

Inflation

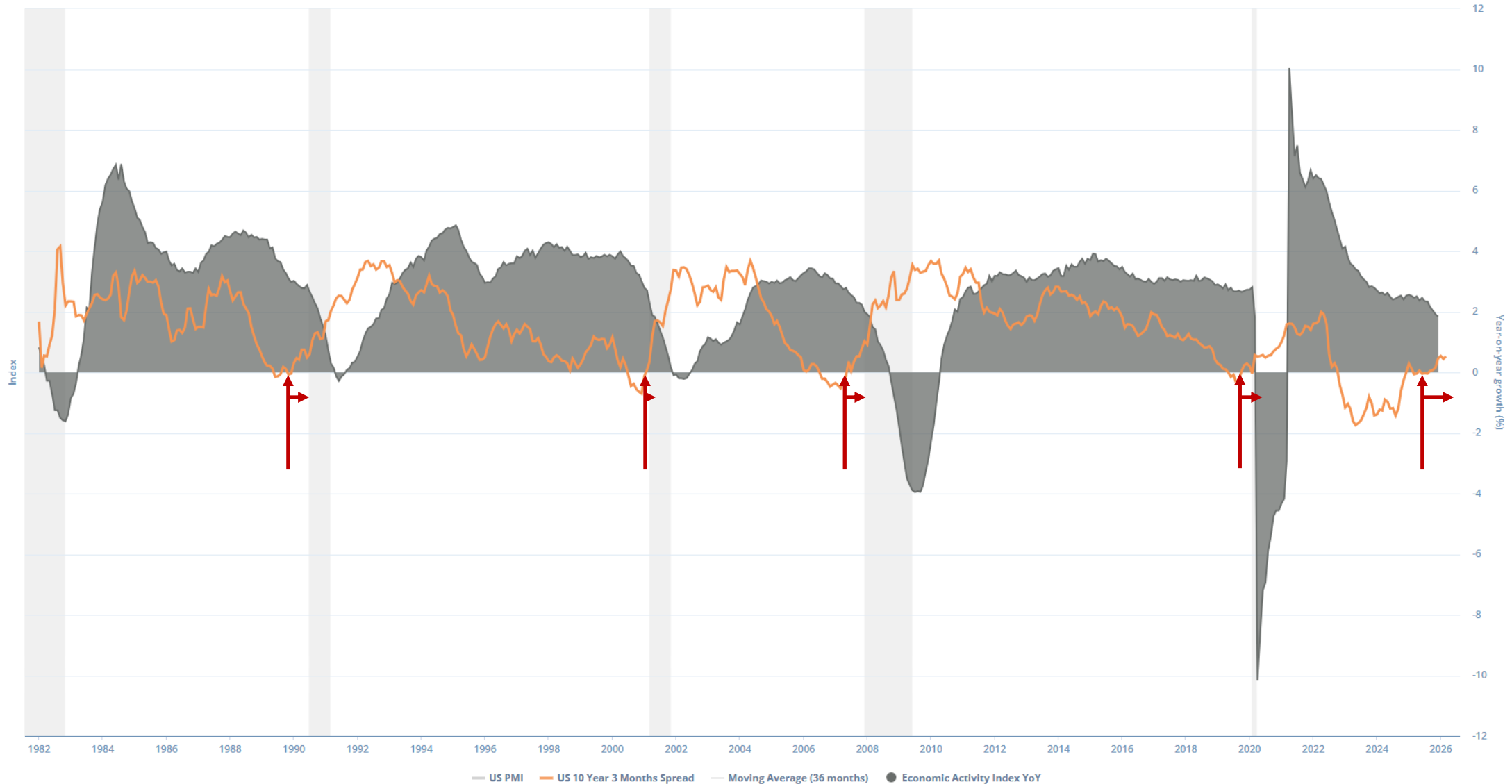
**Construction
activity**

**... and many
more**

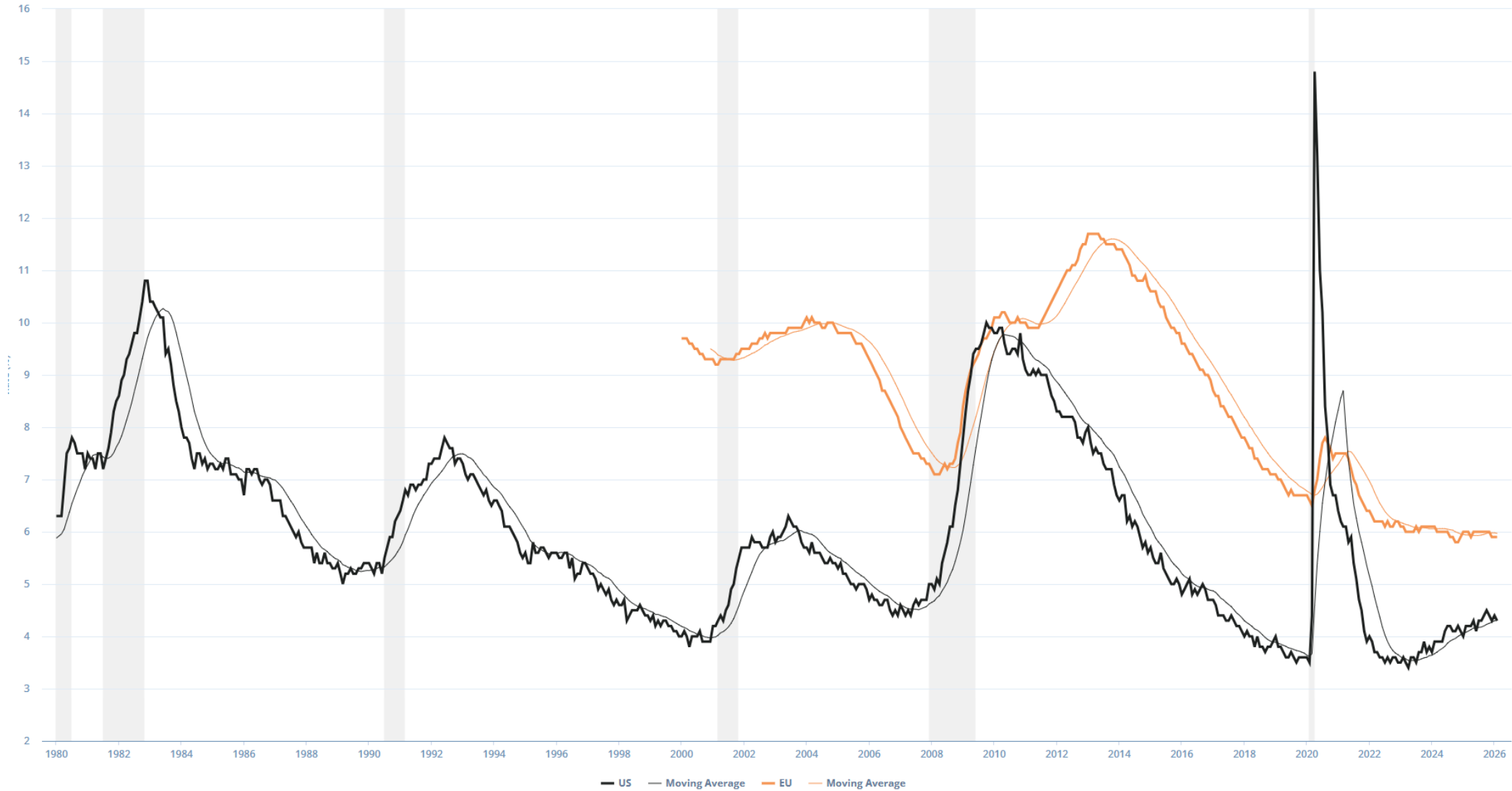


Source: Federal Reserve, ICM®, Federal Reserve Bank of St. Louis, NBER © Minter Limited. Last updated: Apr 7, 2024

The treasury yield curve signals a coming recession

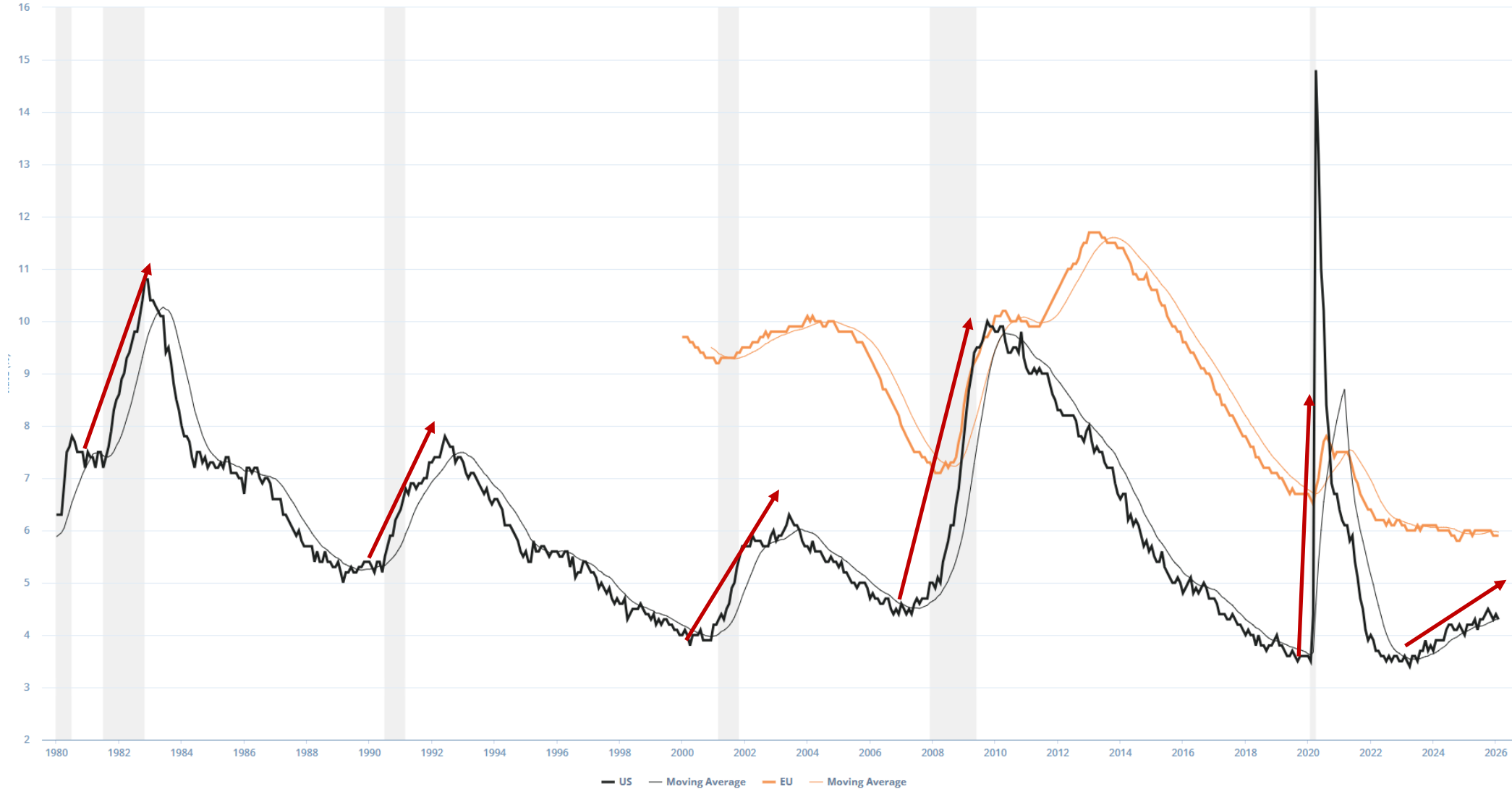


Source: Federal Reserve, ICM®, Federal Reserve Bank of St. Louis, NBER © Minter Limited. Last update: Apr 7, 2025



Source: Eurostat, Federal Reserve, World Bank, NBER © Mintec Limited. Last update: Apr 7, 2026

The unemployment signals a coming recession




Source: Eurostat, Federal Reserve, World Bank, NBER © Mintec Limited. Last update: Apr 7, 2026

The compounding effect:



Rhino: Inverted Treasury Yield curve +
Unemployment + other things

 then Tariffs (Black Swan)

 then Middle East Crisis (Black Swan)

The compounding effect:

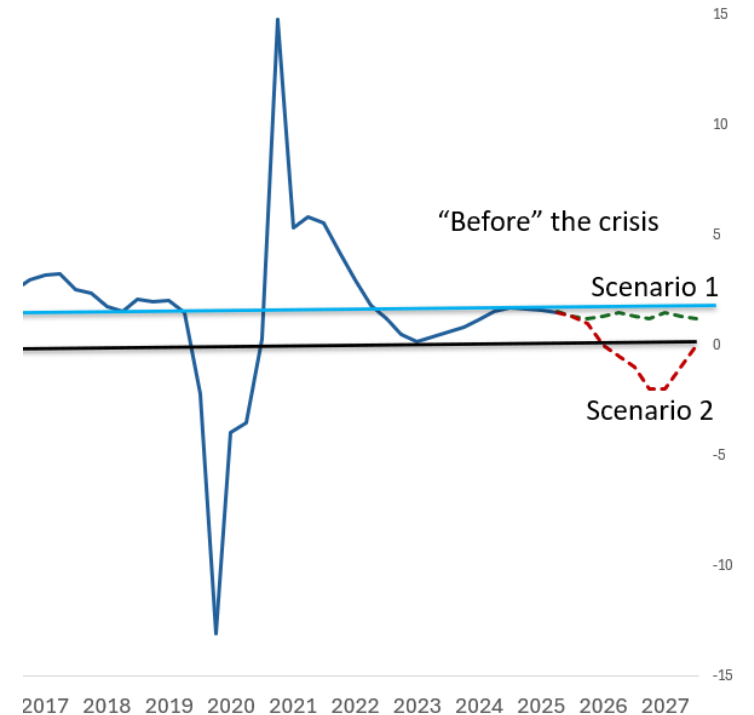


Rhino: Inverted Treasury Yield curve +
Unemployment + other things

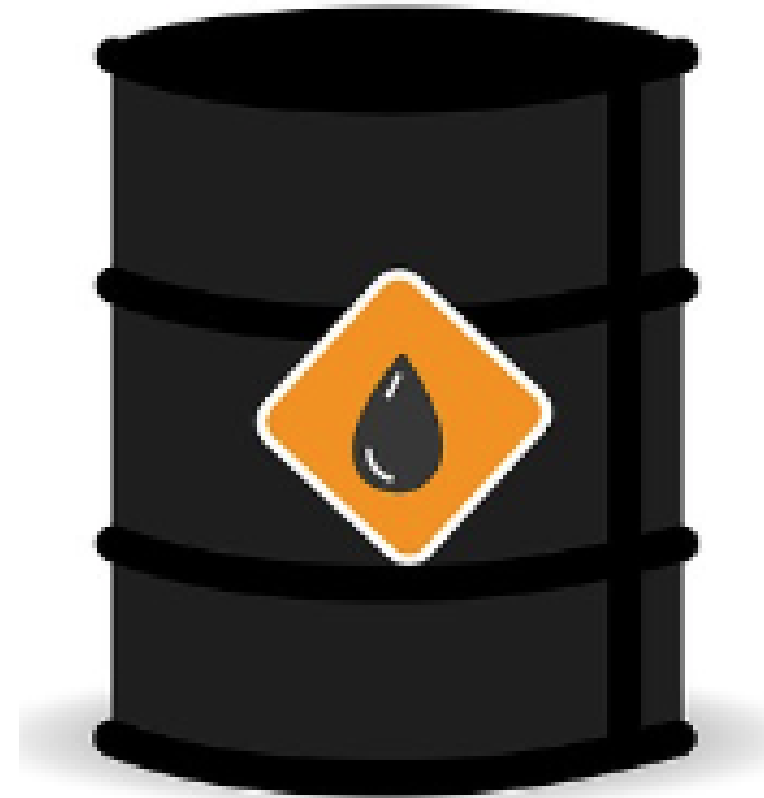
↳ then Tariffs (Black Swan)

↳ then Middle East Crisis (Black Swan)

Conclusion: It's safe to say we need to take scenario 2 into consideration



A hybrid Grey Rhino + Black Swan:



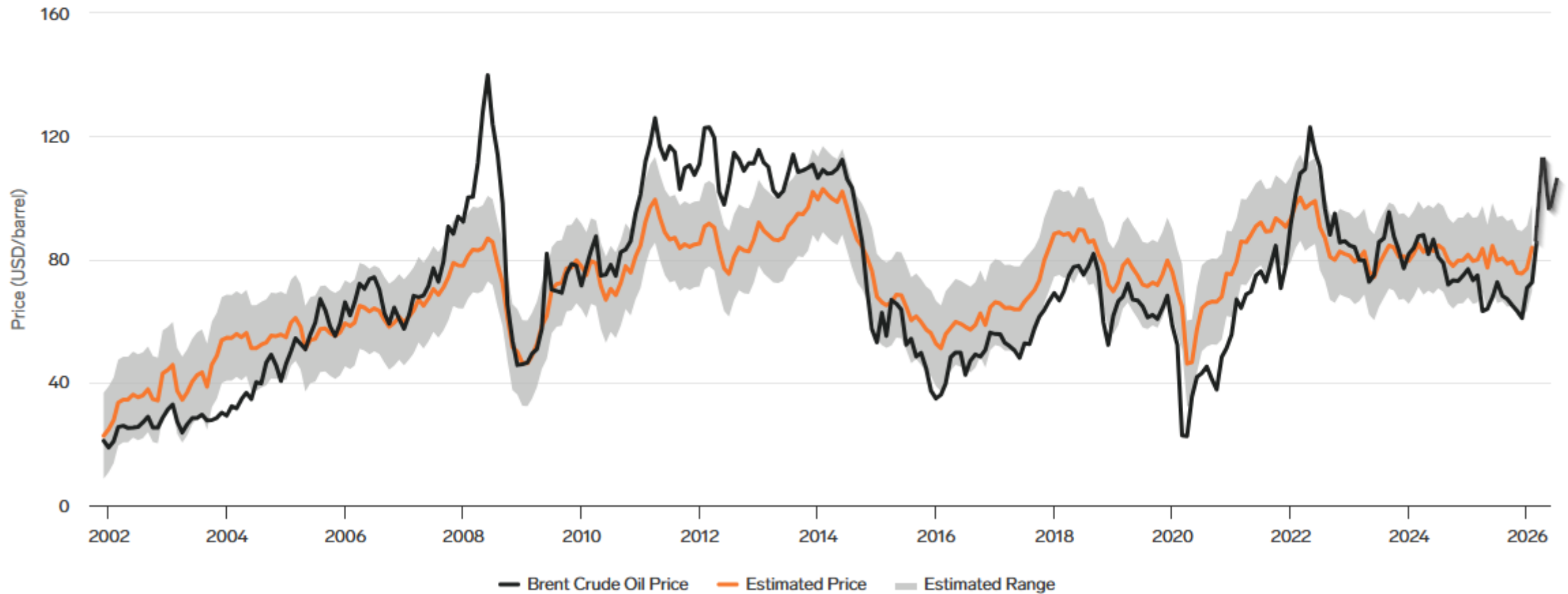
A hybrid Grey Rhino + Black Swan:



Oil Regression Model

Reset zoom Fullscreen Export

Fig. 1. Monthly

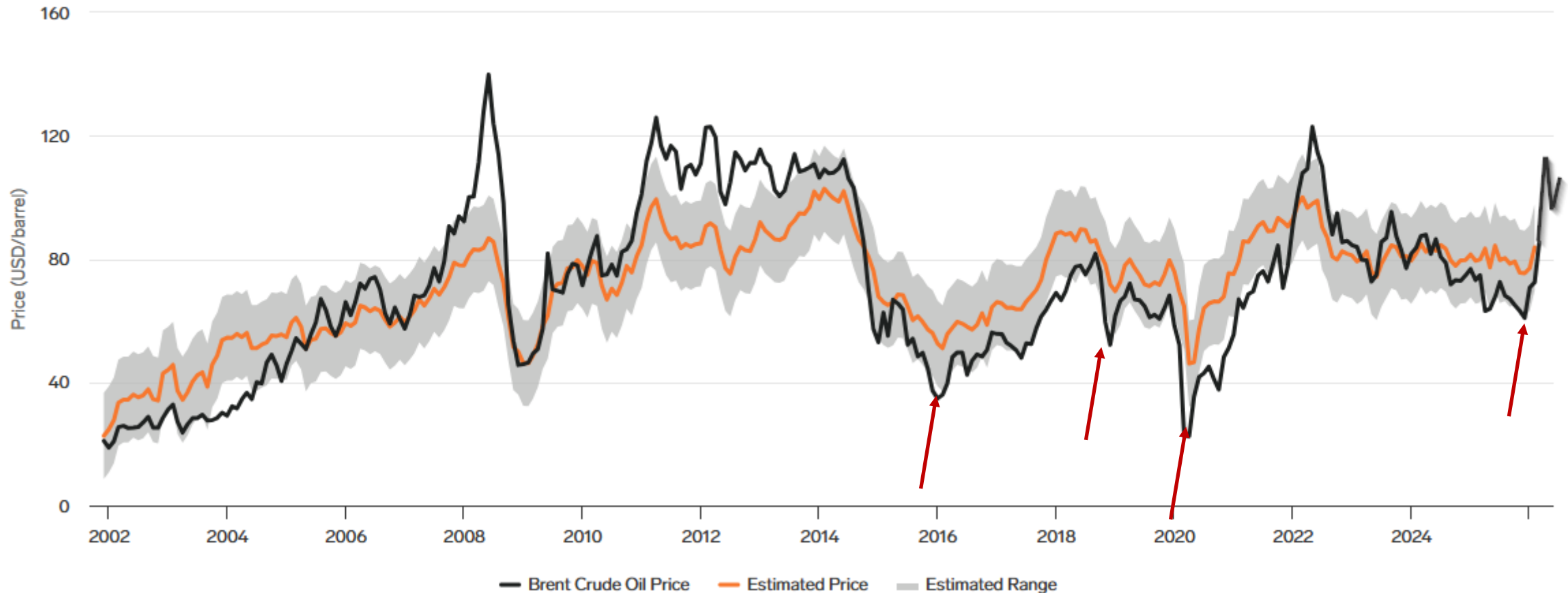


Grey Rhino price increase:

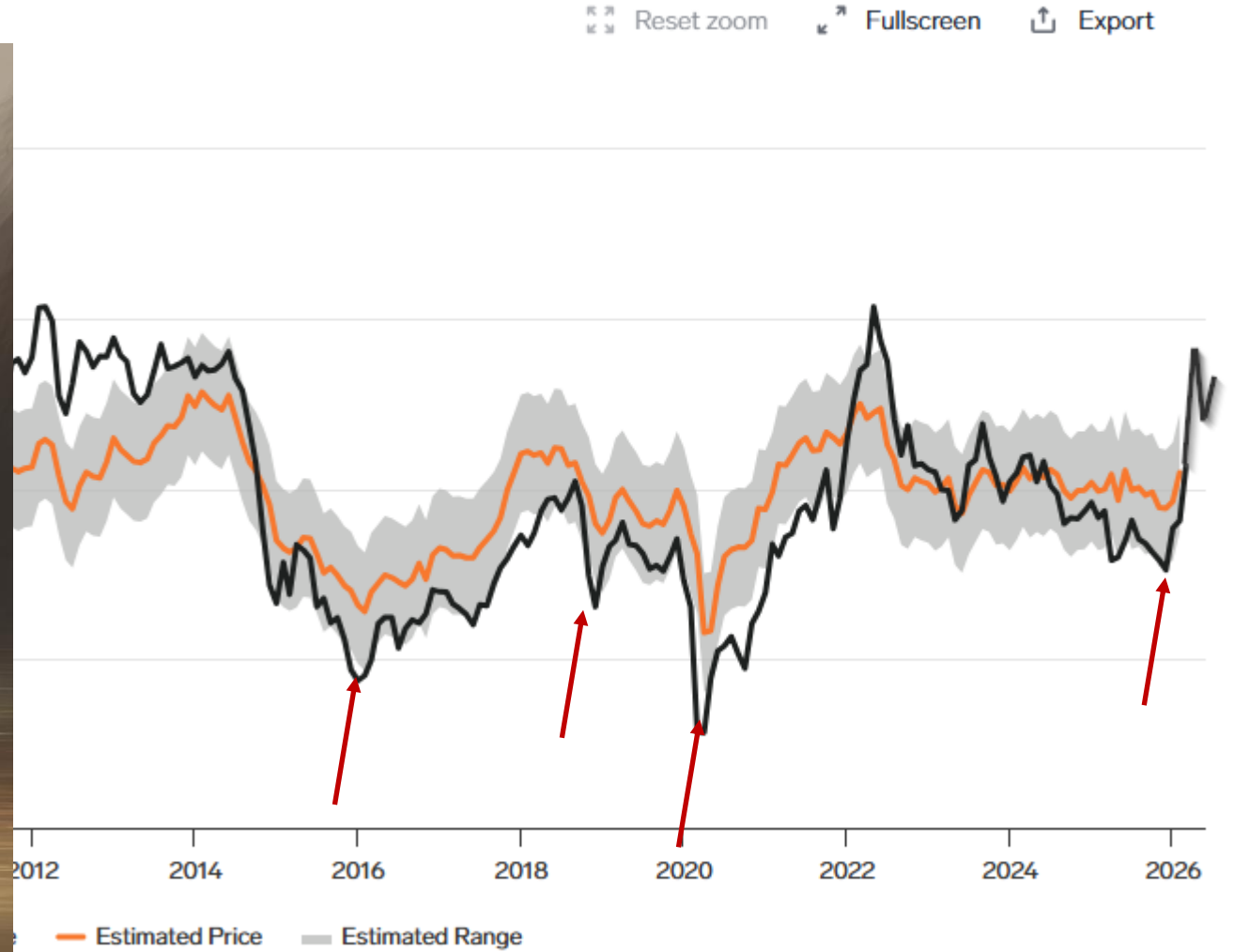
Oil Regression Model

Reset zoom Fullscreen Export

Fig. 1. Monthly



Oil Regression Model



A hybrid Grey Rhino + Black Swan:

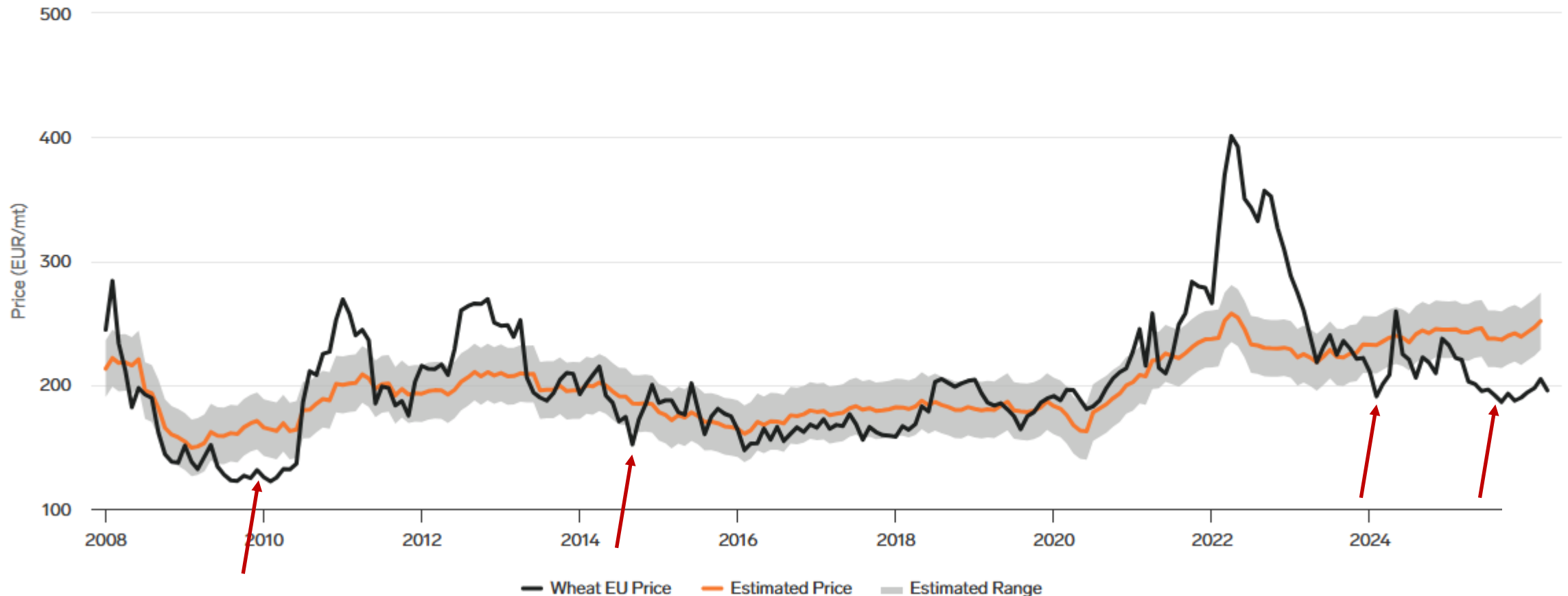


Grey Rhino without a Black Swan:

Wheat EU Regression Model

Reset zoom Fullscreen Export

Fig. 1. Monthly



3. Geo-political Events

Recent geo-political events have hit agri-food:

Middle East conflict & Hormuz

Energy and fertiliser routes disrupted; higher input and freight costs; heightened food-price risk in import-dependent regions.

Russia–Ukraine (still unresolved)

Grain and fertiliser exports constrained; Black Sea logistics and insurance risk; reference case for conflict-driven food and fertiliser spikes.

Geoeconomic fragmentation

Tariffs, export controls, sanctions; “weaponised interdependence” in commodities, inputs, and technology; volatility in both inbound inputs and outbound markets.

Headline geopolitics is only the start. The impact is felt through many dimensions:

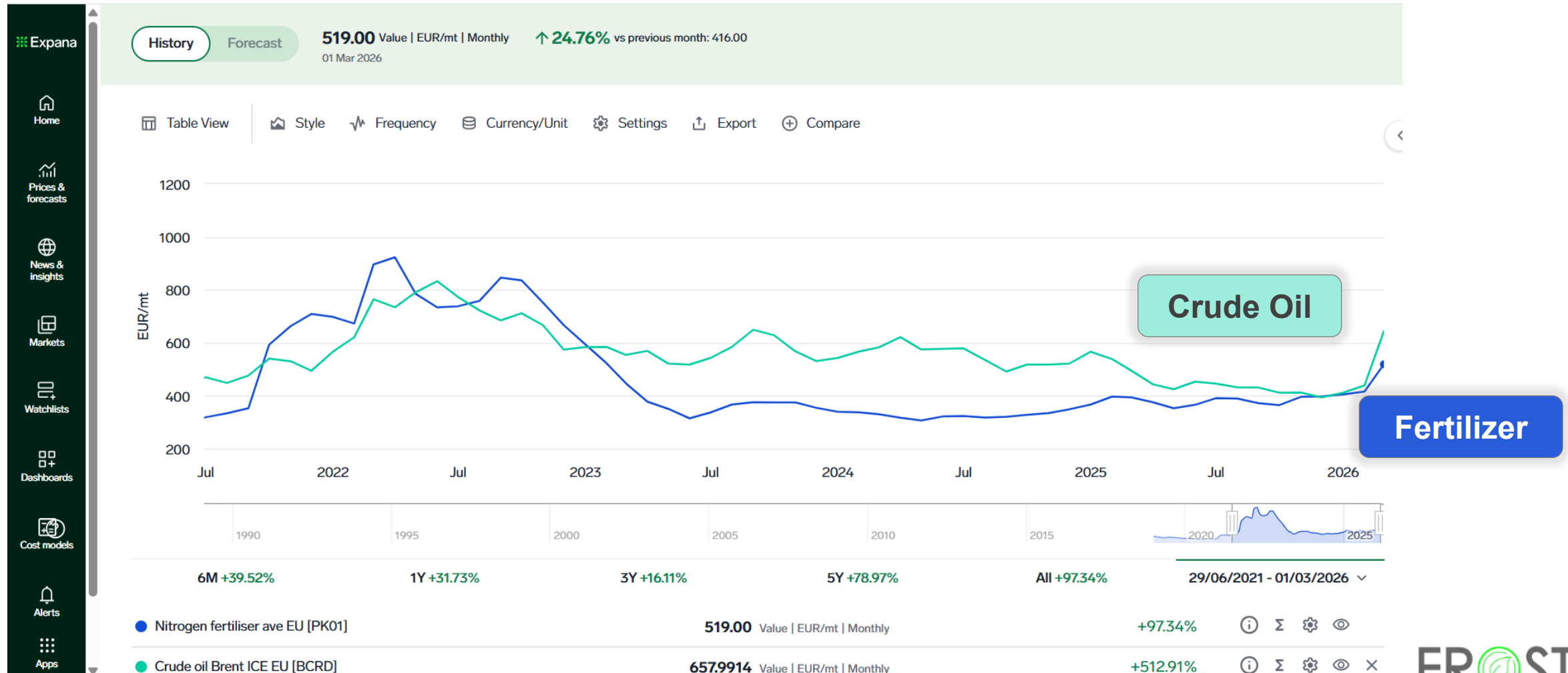
Risk Source

- Middle East conflict & chokepoints
- Russia–Ukraine and extended sanctions
- Trade wars & export controls
- Financial sanctions & FX stress

Impact

- Energy and fertiliser prices spike (gas, nitrogen, potash)
- Shipping routes disrupted (Hormuz, Black Sea, Red Sea)
- Insurance, freight, and working-capital costs increase
- Import-dependent countries face price and availability risk

The primary Black Swan event has a ripple effect onto other secondary markets such as that of fertilizer:



Fertiliser disruption from Iran conflict prompts global food shortage warnings

Prices have jumped
largest producers

<https://www.ft.com/content/>

'The last thing we needed': US farmers hit by spiralling

or already reeling

Consumers face more pain as companies threaten price rises

Executives warn that a prolonged energy shock would increase pressure to pass on costs to customers

<https://www.ft.com/content/f2d0d112-6e04-4f88-878e-30cb34ce1c2a?syn-25a6b1a6=1>

Logistics giant talks over

The world's biggest freight logistics company said it was holding crisis calls "multiple times" each day as it tries to find ways to get critical supplies into the Gulf, and warned of the serious threat to food shipments.

<https://www.ft.com/content/923c67e7-99d0-4044-9228-8ae381369822?syn-25a6b1a6=1#post-c594d607-0585-4b74-9a8f-57c12f2af799>

Iran war hits pistachio supplies amid Dubai chocolate boom

Prices for the nuts have surged after disruption to export routes from Iran, a major producer of the nut

<https://www.ft.com/content/438ef32a-59e5-41b3-a0da-569716385347?syn-25a6b1a6=1>

Interconnected Risks at complex uncertain times: Are your risk scenario still valid?

- Geopolitics & Security
- Wars, regional conflicts, terrorism
- Sanctions and trade blocs
- Cyber and infrastructure attacks

- Energy & Fertiliser
- Oil and gas price spikes
- Fertiliser availability and costs
- Capacity and investment shifts



- Policy & Market Response
- Export bans and stock releases
- Subsidies, price controls, FX moves
- Credit, liquidity, and volatility

- Logistics & Chokepoints
- Straits, canals, ports, corridors
- Freight, insurance, and lead times
- Rerouting and congestion

4. Nuts - Climate Change Grey Rhino

Contrast and compare:

Peanuts



Hazelnuts



Almonds



Cashews



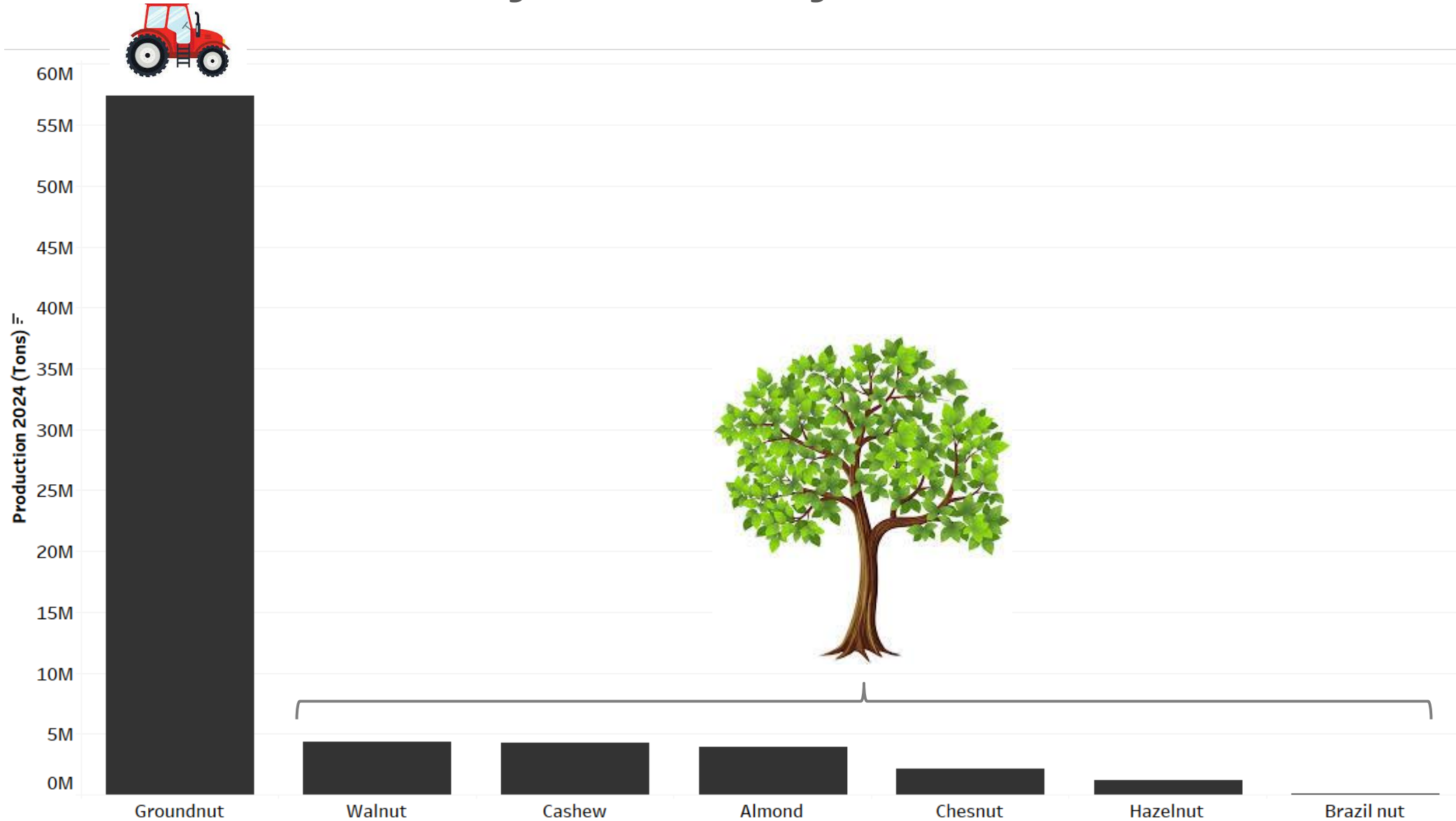
Walnuts



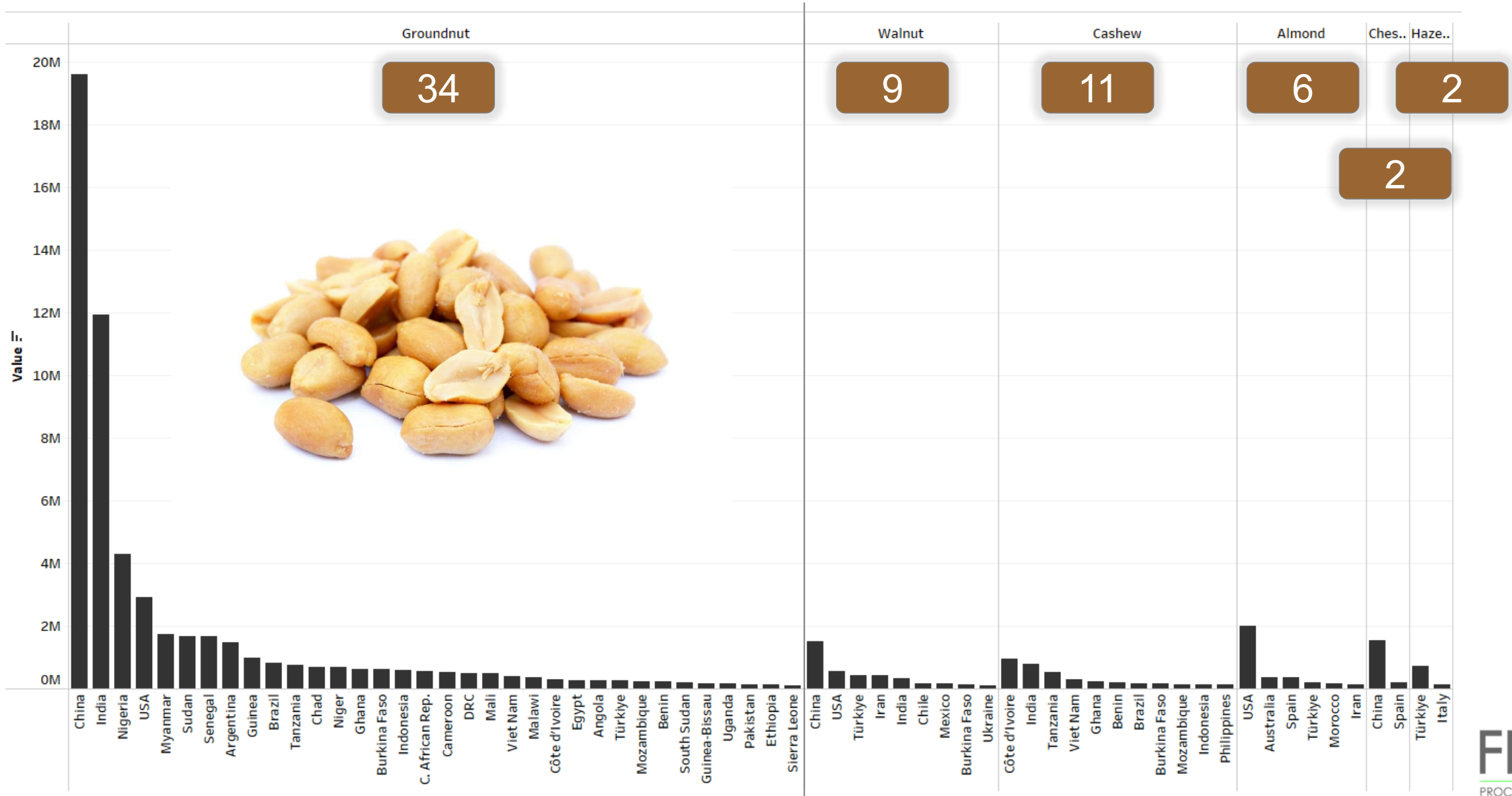
Chestnuts













Ground nuts are totally and utterly different to tree nuts:

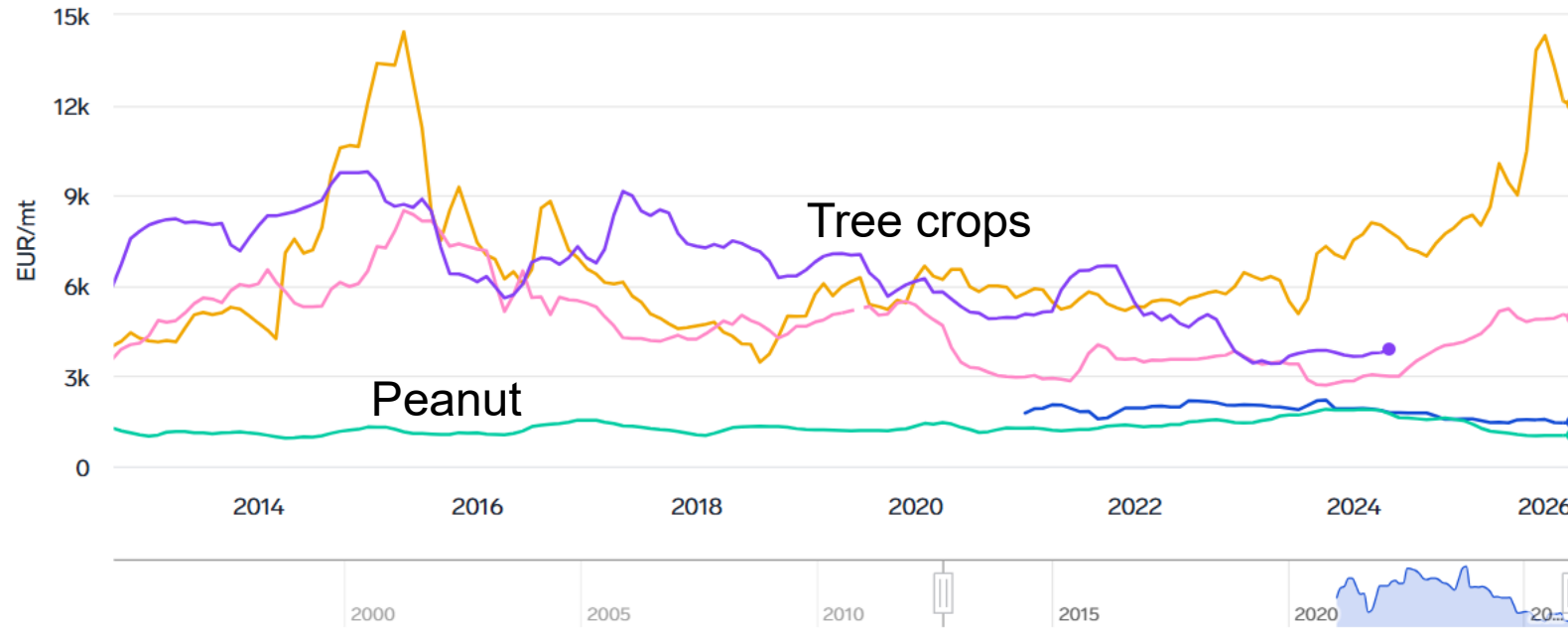


Countries over 100kT annual production:

















The characteristics of different nuts are reflected in the pricing:

-  Expana
-  Home
-  Prices & forecasts
-  News & insights
-  Markets
-  Watchlists
-  Dashboards
-  Cost models
-  Alerts
-  Apps



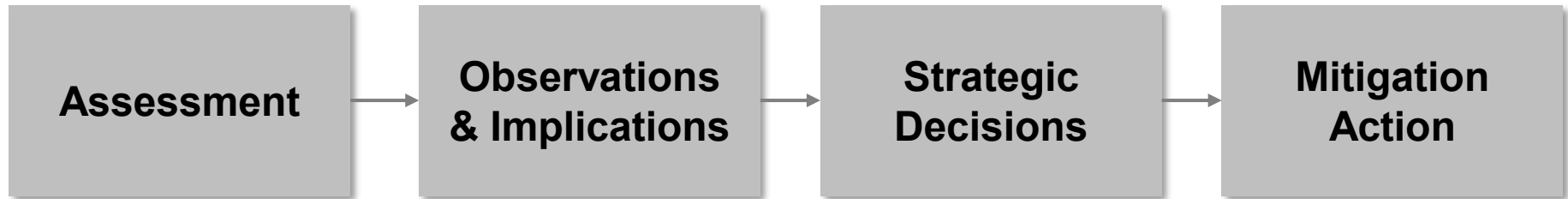
Hazelnut

6M -5.54% 1Y -7.65% 3Y -28.49% 5Y -17.53% All -17.53% 05/09/2012 - 01/01/2026

● Chestnut exw CN [TN64]	1466.1000	Value EUR/mt Monthly	-17.53%	   
● Peanut 40/50 (AR) cif Rdam EBP [1S01]	1052	Value EUR/mt Monthly	+74.47%	    
● Hazelnut 11/13 (TR) cfr NW Eur EBP [4P01]	12010.39	Value EUR/mt Monthly	+315.57%	    
● Almond comuna exw Reus ES [RT19]	4935.0000	Value EUR/mt Monthly	+89.95%	    
● Walnut amber halves (IN) ddp UK [5U11]	3887	Value EUR/mt Monthly	-32.06%	    

Each crop needs a totally different approach to sourcing:

Proactive



- 34 growing countries
- Short growing cycle
- # countries
- Specifications
- Multiple Countries
- Broad specs



- 2 growing countries
- Tree Crop
- Backward Integration
- Diversification from hazelnuts
- Need both countries
- Invest heavily in trees are farmers
- Alternative nuts
- Hold Good Stock

Remember market fundamentals still play a huge part:



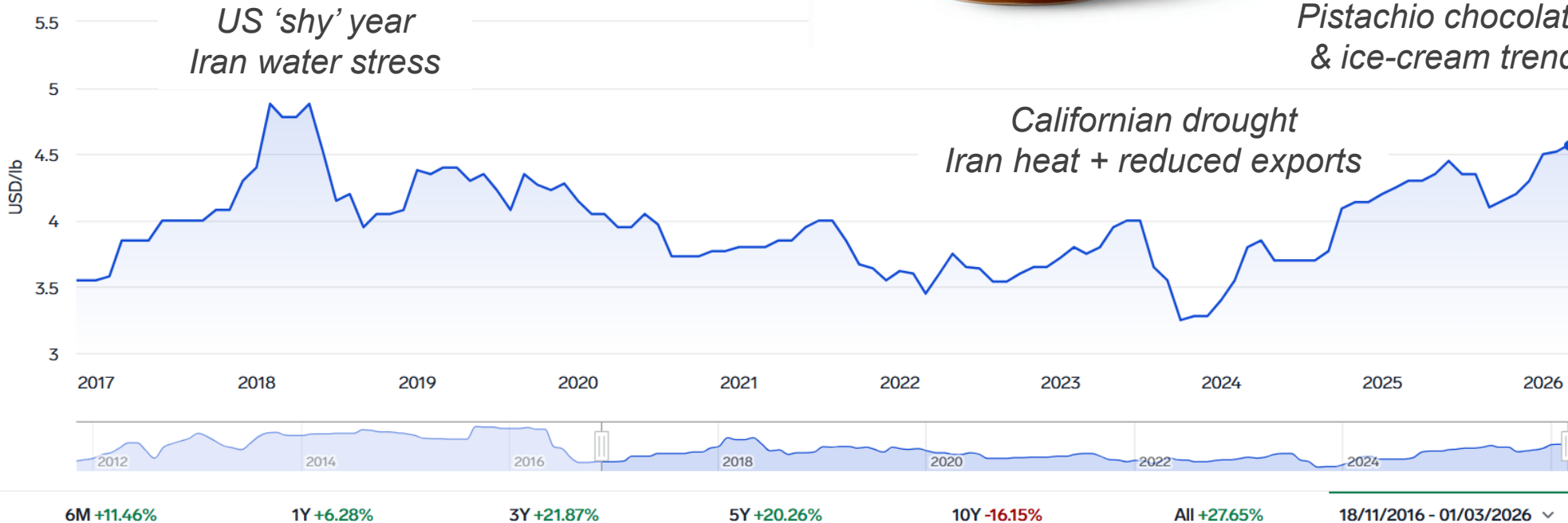
Growing	Production (T/pa)
USA	600,000
Turkey	350,000
Iran	250,000
China	100,000
Syria	60,000

Pistachio 21/25 fas US EBP RU12

Pistachio; in shell|21/25 count per ounce|US extra no. 1 grade|min 40 foot container|free alongside ship; Unit

History Forecast **4.5700** Value | USD/lb | Monthly ↑ 1.11% vs previous month: 4.5200
01 Mar 2026

Table View Style Frequency Currency/Unit Settings Export



- Expana
- Home
- Prices & forecasts
- News & insights
- Markets
- Watchlists
- Dashboards
- Cost models
- Alerts
- Apps

5. What to do about Grey Rhinos and Black Swans

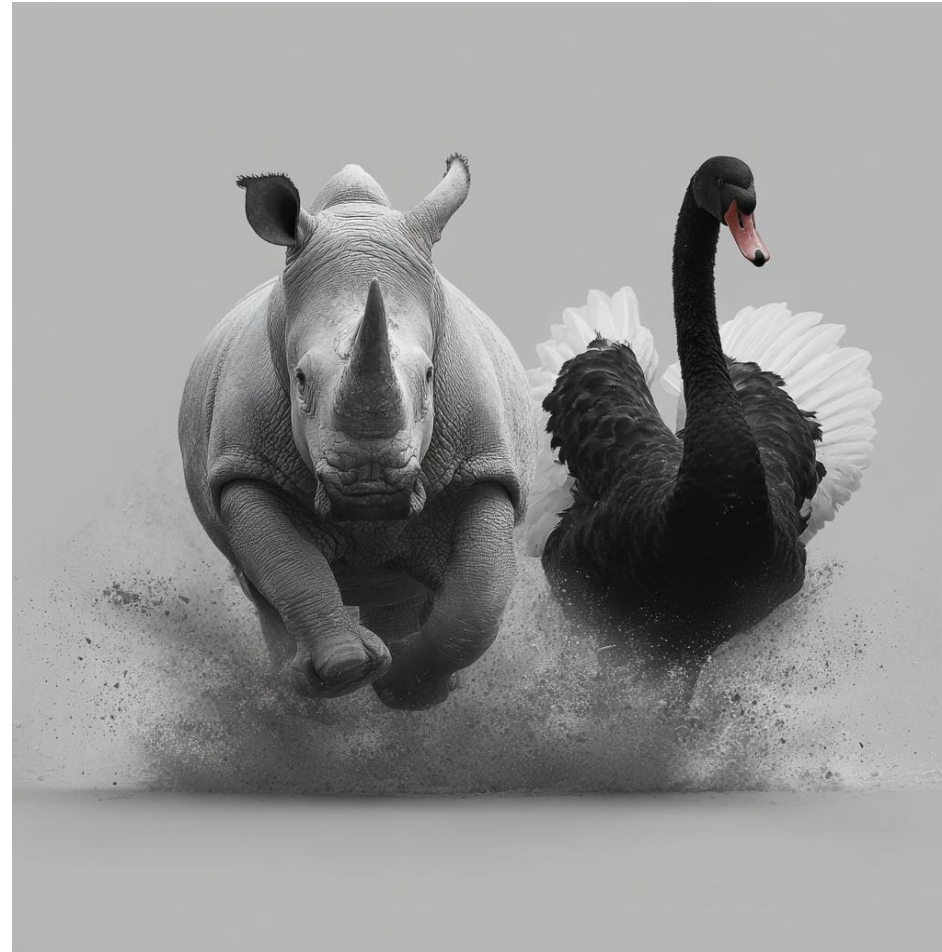
Grey Rhinos and Black Swans need to be treated very differently:

Lead Time

= **Years**

95% proactive

5% reactive



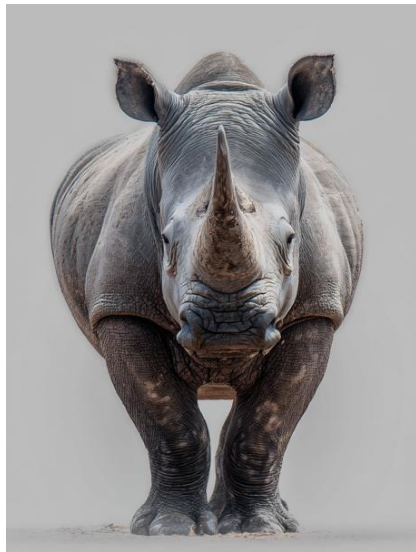
Lead Time

= **Hours to days**

20% proactive

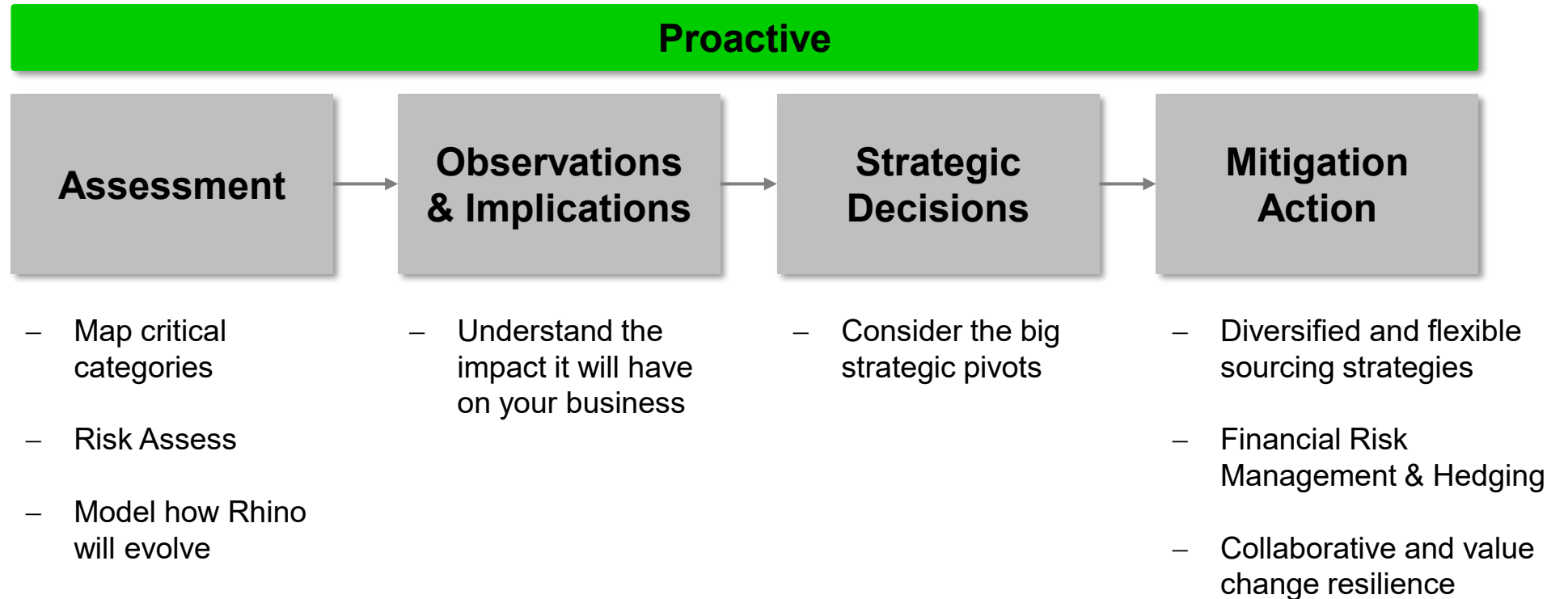
80% reactive

You're in for the long haul with a grey rhino:




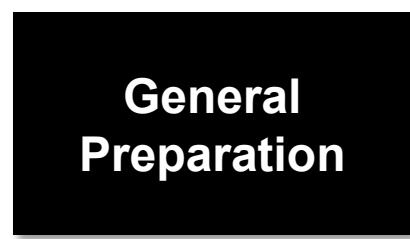
Issue

- Pretend it's not happening
- Kick it into touch



Whilst there are a few things you can do before Black Swan events, the major focus is on disaster recovery:

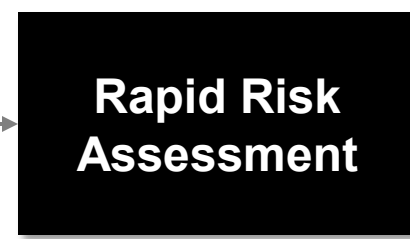
Unforeseen disaster 



- Signals monitoring
- Crisis Protocol/playbook
- Governance
- Fire Drill



- Clear leadership
- Rapid re-prioritisation of resources



- Gather data and info quickly
- Make a plan with limited data points

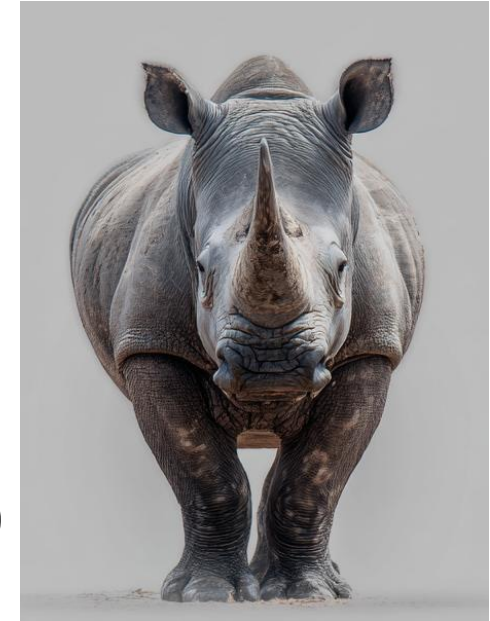


- Take Action
- Keep Adapting
- Keep learning

Wrap Up

Our top tips are:

- ✦ **Horizon** – switch mindset from here-and-now to long term
- ✦ **Data** – use data to analyse markets and spot longer trends
- ✦ **Collaboration** – will likely need to work with others to fix
- ✦ **Investment** – total cost of ownership (more expensive not to act)
- ✦ **Strategic Decisions** – be prepared to make big strategic shifts
- ✦ **Raise Awareness** – have to bang the drum (don't kick it down the line)



Our top tips are:

- ✨ **Planning** – crisis plan means less ‘rabbit in headlights’ when black swan occurs
- ✨ **Beating competition** – being even 10% better brings advantage
- ✨ **Data** – use data to understand the immediate impact of the event
- ✨ **Hype** – separate noise from hype (or other underlying dynamic)
- ✨ **Resource** – be prepared to rapidly re-deploy resource
- ✨ **Adaptive** – foster a spirit of rapid adaptation & learning



Thank you

Q&A