

# Russian-Ukrainian Crisis Impact – Methodological Approach

Case Study  
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ALVAREZ & MARSAL  
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# Overview







## Russia Ukraine conflict will likely disrupt the supply of key raw materials, leading to knock-on effects across industries

### Current Status of the Russia–Ukraine Crisis

As a result of military operations being launched against Ukraine on 24 February 2022 by Russia, multiple countries including the US, EU, and the UK have announced sanctions such as:

- On February 22<sup>nd</sup>, the US put sanctions on the Corporation Bank for Development and Foreign Economic Affairs Vnesheconombank (VEB) and Promsvyazbank Public Joint Stock Company (PSB), along with 42 of their subsidiaries
  - Germany has halted the Nord Stream 2 pipeline authorization
- On March 2<sup>nd</sup>, EU introduced a SWIFT ban for certain Russian banks and prohibited investing, participating, or contributing to future projects co-financed by the Russian Direct Investment Fund
- On March 15<sup>th</sup>, EU decided to impose a fourth package of economic and individual sanctions, which included a prohibition on:
  - All transactions with certain state-owned enterprises
  - The provision of credit rating services to any Russian person or entity
  - New investments in the Russian energy sector
- Expanded the list of persons connected to Russia's defense and industrial base (sanctions on an additional 15 individuals and 9 entities)
- On April 8, EU decided to impose a fifth package of economic and individual sanctions, which included a prohibition on:
  - The import of some Russian products such as coal, cement, rubber products, and wood
  - The export of some EU products such as catalysts for use in the refinery industry, jet fuel and fuel additives.

### Impact on European Industries

Industry	Commodity	Level of Impact as of 2022
Energy 	Natural gas, Petroleum, Oil	Low  High
Metals 	Nickel, Steel, Palladium, Titanium, Aluminium	Low  High
Agriculture 	Wheat, Barley, Corn and Sunflower oil	Low  High

Source: [Kremlin says demilitarized Ukraine like Austria is possible compromise \(March 2022\)](#) (continued in slide notes)

Russian-Ukrainian Crisis Impact | Methodological Approach

# Executive Summary

**A&M measures the impact of the Russian-Ukrainian crisis combining direct and collateral impacts on neighboring countries at industry level.**



## Impact on countries with commercial ties to Russia and Ukraine

Heatmap that considers a Sectoral View of the analyzed country Production and Consumption, and Imports and Exports coming from Stressed Countries or Products

## Stressing imports/exports and stress commodities and energy price increases

**Stress 1:** Simulate restriction on each sector exports and imports coming from affected countries.

**Stress 2:** Simulate pricing shocks on Oil, Gas and Raw Materials for each sector and the passthrough to Households and Exports.

## Generating impacts by sector and debt for each country

Estimate GDP/EBITDA impacts for each sector and KRIs stress factors for Corporates and Households for credit monitoring.

## Credit Loss Impact Analysis by country-sector and Individual Bank Exposure

Map outstanding Debt at Risk by Sector and Country for potential S2 / S3 transition and capital impact under two stressed scenarios







■ A&M countries analyzed  
■ Impacting countries



This case study considers the impact of the Russian-Ukrainian crisis in four economies: Romania, Slovakia, Czech Republic and Spain. The rest of economies are not covered in this analysis.

# Russian-Ukrainian and Energy Crisis Impact – Methodological Approach

Measuring stress impact on economic sectors and debt

 <b>Country and Energy Risk Footprint</b>	 <b>Stress 1: Export/Import Freeze</b>	 <b>Stress 2: Energy &amp; Commodities Prices</b>	 <b>Generate Impacts on sector GDP and Debt</b>
<p>Heatmap that considers a Sectoral View of the analyzed country Production and Consumption, and Imports and Exports coming from Stressed Countries or Products</p>	<p>Simulate restriction on each sector exports and imports coming from affected countries. Base and adverse scenarios</p>	<p>Simulate pricing shocks on Oil, Gas and Raw Materials for each sector and the passthrough to Households and Exports. Base and adv. scenarios</p>	<p>Estimate GDP/EBITDA impacts for each sector and KRIs stress factors for Corporates and Households for credit monitoring.</p>
<ol style="list-style-type: none"> <li>1.1. &gt;60 Products and Services modeled</li> <li>1.2. &gt;All NACE Sectors aggregated into 20 Sector Groups</li> <li>1.3. Imports and Exports at Product Level and Country</li> <li>1.4. Cross Sector Interdependencies to detect Supply Chain Disruption Risk and Raw Materials Inflation transmission channels.</li> <li>1.5. Banking Debt by Sector &amp; Households by Bank</li> </ol>	<ol style="list-style-type: none"> <li>2.1. <b>Imports Stress Impact:</b> Goods and Services incoming from Russia and Ukraine flow will be disrupted by war and sanctions, generating supply constrain in most impacted sectors.</li> <li>2.2. <b>Exports Stress Impact:</b> Goods and Services sold to Russia and Ukraine will be disrupted by war and sanctions, generating a decrease in the sales of the most impacted sectors.</li> <li>2.3. <b>Cross Stress Impact:</b> Import Stress Impact will circulate across sectors through the cross-sector interdependencies amplifying the impact through transformed products and energy costs.</li> <li>2.4. Selected scenario based on 100% of import and export from Russia and Ukraine</li> </ol>	<ol style="list-style-type: none"> <li>3.1. Selection of affected Products: Oil, Natural Gas and Raw Minerals.</li> <li>3.2. Select Pricing Impact under different scenarios: Base Stress 2,5x Prices.</li> <li>3.2. Calculate Import Stress to affected sectors and transmission channels through energy prices, supply chain and final consumer prices.</li> </ol>	<ol style="list-style-type: none"> <li>4.1. Measure Impacts by Sector of Stress 1 and 2 and combined.</li> <li>4.2. Estimate KRI Stress Factors by sector D/EBITDA for Corporates and D/Income for Households</li> <li>4.3. Map outstanding Debt at Risk by Sector for potential S2 / S3 transition</li> <li>4.4. Top 10 Banks exposure at Risk</li> </ol>

# Sector Overview on neighboring countries

			Slovakia 🇸🇰				Romania 🇷🇴				Czech Republic 🇨🇪				Spain 🇪🇸			
			GDP Contribution by sector		Banking Debt (Public+priv.)		GDP Contribution by sector		Banking Debt (Public+priv.)		GDP Contribution by sector		Banking Debt (Public+priv.)		GDP Contribution by sector		Banking Debt (Public+priv.)	
			Bn€	%	Bn€	%	Bn€	%	Bn€	%	Bn€	%	Bn€	%	Bn€	%	Bn€	%
<b>TOTAL CORPORATES</b>			<b>69</b>	<b>100%</b>	<b>57</b>	<b>100%</b>	<b>109</b>	<b>100%</b>	<b>52</b>	<b>100%</b>	<b>145</b>	<b>100%</b>	<b>47</b>	<b>100%</b>	<b>1,196</b>	<b>100%</b>	<b>652</b>	<b>100%</b>
<b>Agriculture and Fishing</b>			2	3.0%	3	5.0%	8	7%	4	9%	4	3%	1	1%	28	2%	22	3%
<b>Industrial</b>	<b>Extraction &amp; Mining</b>		0	0.6%	0.2	0.4%	2	2%			1	1%	0	1%	1	0%	3	0%
	<b>Manufacturing</b>	Food & Beverage	3	4%			1	10%			6	4%			40	3%	24	4%
		Oil Refinery	0	0.4%			0	0%			0	0%			2	0%	2	0%
		Chemicals	2	3.0%			1	1%			5	3%			19	2%	6	1%
		Minerals	0	0.7%	10	18%	1	1%	14	27%	2	1%	12	25%	4	0%	5	1%
		Steel	6	8.5%			6	6%			1	10%			27	2%	22	3%
		Transport Materials	3	4.7%			4	4%			8	5%			12	1%	6	1%
		Other	1	1.4%			2	2%			3	2%			13	1%	16	2%
	Oil, Gas, Electricity and Water	3	4.5%	7	12%	7	7%			6	4%	3	6%	35	3%	27	4%	
<b>Construction</b>			6	8.8%	4	7%	9	9%	5	11%	9	7%	1	1%	54	4%	28	4%
<b>Services</b>	<b>Wholesale and Retail Trade</b>		8	11.6%	10	17%	8	7%			1	12%	4	10%	131	11%	87	13%
	<b>Transportation and Storage</b>		5	7.7%	3	5%	8	7%			9	6%	2	3%	52	4%	39	6%
	<b>Accommodation and Food Services</b>		1	1.5%	1	2%	1	1%			3	2%	1	2%	282	24%	35	5%
	<b>Information and Communication</b>		3	4.8%	1	2%	4	4%			8	6%	1	3%	37	3%	68	10%
	<b>Real Estate Services</b>		7	9.4%	12	22%	1	10%	28	54%	1	9%	16	35%	130	11%	82	13%
	<b>Prof-Scientific-Tech Support</b>		6	8.6%	4	7%	8	8%			1	9%	3	6%	109	9%		
	<b>Public Services</b>		9	12.9%			8	8%			2	14%	1	1%	168	14%		
	<b>Arts, Entertainment and Recreation</b>		2	3.0%	2	4%	4	4%			1	1%	3	6%	22	2%	180	28%
	<b>Other Services</b>		1	1.0%			3	3%			2	1%			30	2%		
<b>TOTAL HOUSEHOLDS</b>			<b>56</b>	<b>100%</b>	<b>50</b>	<b>100%</b>	<b>138</b>	<b>100%</b>	<b>48</b>	<b>100%</b>	<b>102</b>	<b>100%</b>	<b>76</b>	<b>100%</b>	<b>886</b>	<b>100%</b>	<b>600</b>	<b>100%</b>

# Romania Economy by Sector and Transmission Channels

## GDP and Debt by Sector

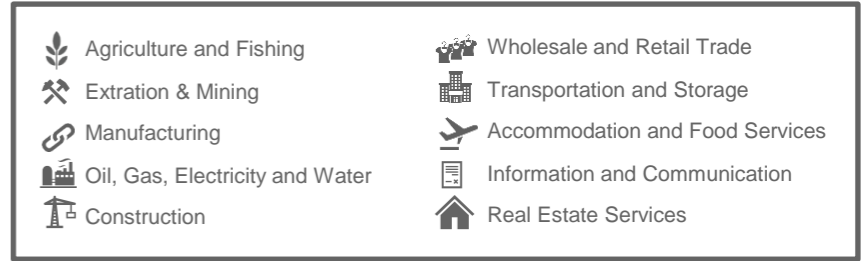


		GDP Contribution by sector (8=7-3-taxes)		Banking Debt (9=Public+priv.)	
		Bn€	%	Bn€	%
<b>TOTAL CORPORATES</b>		<b>109</b>	<b>100%</b>	<b>52</b>	<b>100%</b>
<b>Agriculture and Fishing</b>		8.0	7%	4	9%
<b>Industrial</b>	<b>Extraction &amp; Mining</b>	1.7	1.6%	14	27%
	<b>Food &amp; Beverage</b>	11.4	10%		
	<b>Oil Refinery</b>	0.1	0.1%		
	<b>Chemicals</b>	1.0	1.0%		
	<b>Minerals</b>	0.8	0.7%		
	<b>Steel</b>	6.5	5.9%		
	<b>Transport Materials</b>	4.5	4.1%		
	<b>Other</b>	2.4	2.2%		
	<b>Oil, Gas, Electricity and Water</b>	7.3	6.7%		
	<b>Construction</b>		9.4		
<b>Services</b>	<b>Wholesale and Retail Trade</b>	7.7	7.0%	28	54%
	<b>Transportation and Storage</b>	8.2	7.5%		
	<b>Accommodation and Food Services</b>	1.4	1.3%		
	<b>Information and Communication</b>	4.4	4.1%		
	<b>Real Estate Services</b>	10.8	9.9%		
	<b>Prof-Scientific-Tech Support</b>	8.2	7.6%		
	<b>Public Services</b>	8.4	7.7%		
	<b>Arts, Entertainment and Recreation</b>	3.9	3.6%		
	<b>Other Services</b>	2.8	2.6%		
	<b>TOTAL HOUSEHOLDS</b>		<b>138</b>		

## Intra-Industry Transmission Channels



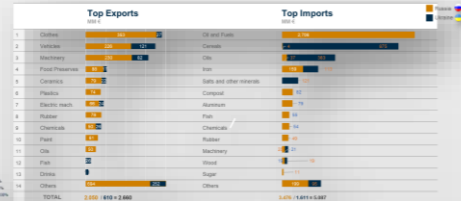
# Combined Stress: Country and Sectors Impact



## Stress Methodology

### Stress 1:

- A reduction of Exports and Imports from Ukraine and Russia would cut off supply activities of Slovakia, Romania and Czech Republic economy.



1 GPD Impacts by sector and country

### Stress 2

- Scenario:** Impact of a sudden price increase due to international instability in Oil, Gas and Commodities prices that would impact import Prices of Slovakia, Romania and Czech Republic Sectors.
- Calibration:** select the most affected sectors and assume a price increase vs. Base.
- Transmission Channels:** both direct and indirect impacts are transmitted.

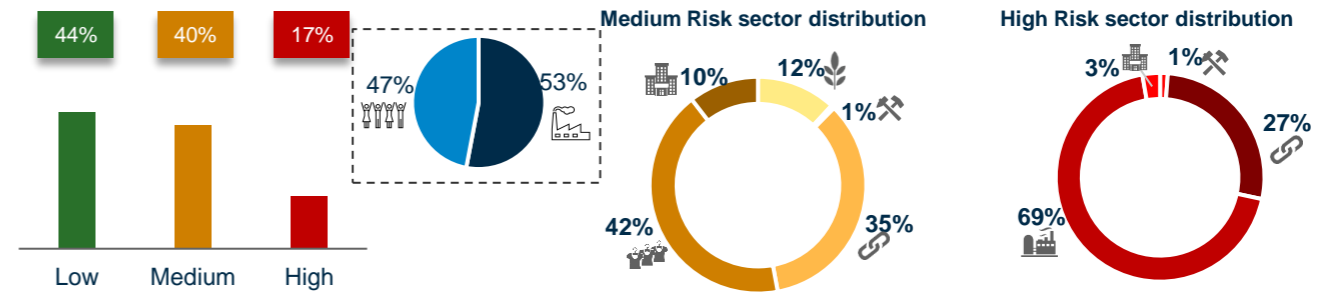


2 GPD Direct and Indirect Impacts by sector and country

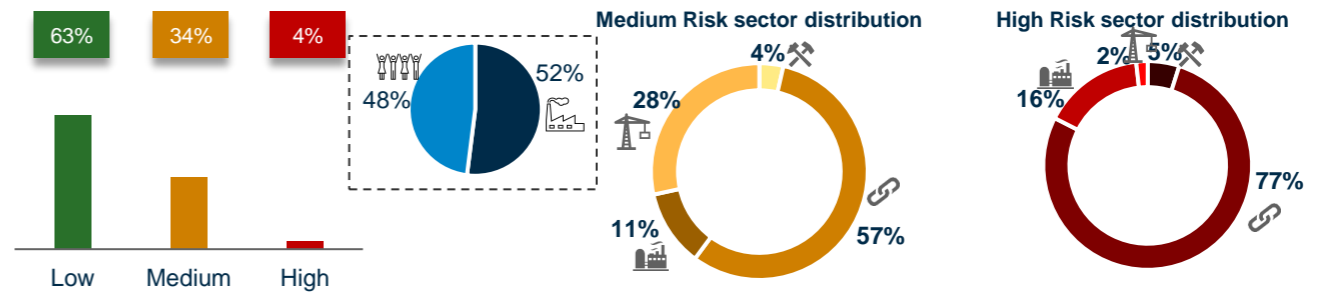
**Results:** To identify the most affected sectors, estimate GDP/EBITDA impacts per sector. KRIs stress factors for Corporates and Households allow the credit monitoring and a Credit Loss Impact Analysis.



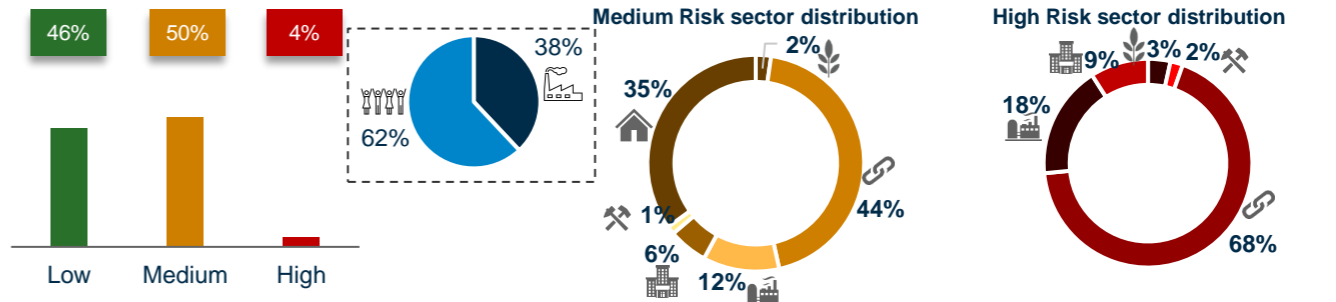
## Slovakia – Industry Sector Debt Impacts



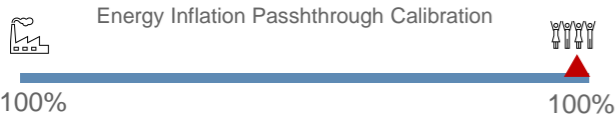
## Romania – Industry Sector Debt Impacts



## Czech Republic – Industry Sector Debt Impacts



# Sector Overview of Spanish Economy



		Debt Exposure		GDP Impact		KRI Debt/GDP % Stress		
		MM€	%	MM€	%	MM€	%	
<b>TOTAL CORPORATES</b>		<b>652.357</b>	<b>100%</b>	<b>-23.474</b>	<b>-2,0%</b>	<b>0,55</b>	<b>103%</b>	
<b>Agriculture and Fishing</b>		22.285	3%	-1.701	-6%	0,80	107%	
<b>Industrial</b>	Extraction & Mining	2.588	0,4%	-158	-11%	1,77	112%	
	Manufacturing	Food & Beverage	23.933	4%	-892	-2%	0,60	102%
		Oil Refinery	2.429	0,4%	-847	-43%	1,22	174%
		Chemicals	5.701	1%	-1.483	-8%	0,30	109%
		Minerals	4.504	1%	-1.538	-35%	1,03	155%
		Steel	22.112	3%	-3.043	-11%	0,83	113%
		Transport Materials	6.225	1%	-587	-5%	0,53	105%
		Other	16.242	2%	-138	-1%	1,23	101%
	Oil, Gas, Electricity and Water	27.139	4%	-6.279	-18%	0,77	122%	
<b>Construction</b>		27.895	4%	-832	-2%	0,52	102%	
<b>Services</b>	Wholesale and Retail Trade	86.856	13%	-743	-1%	0,66	101%	
	Transportation and Storage	39.135	6%	-2.660	-5%	0,75	105%	
	Accommodation and Food Services	35.489	5%	-66	0%	0,13	100%	
	Information and Communication	68.115	10%	-75	0%	1,83	100%	
	Real Estate Services	81.943	13%	-25	0%	0,63	100%	
	Prof-Scientific-Tech Support			-371	0%			
	Public Services	179.766	28%	-76	0%	1,65	100%	
	Arts, Entertainment and Recreation			-23	0%			
	Other Services			-1.935	-7%			
<b>TOTAL HOUSEHOLDS</b>		<b>600.000</b>	<b>100%</b>	<b>-23.786</b>	<b>-2,7%</b>	<b>0,68</b>	<b>104%</b>	
<b>TOTAL COPORATES &amp; HOUSEHOLDS</b>		<b>1.252.357</b>	<b>100%</b>	<b>-47.259</b>	<b>-2,0%</b>	<b>0,60</b>	<b>103%</b>	

## Methodology

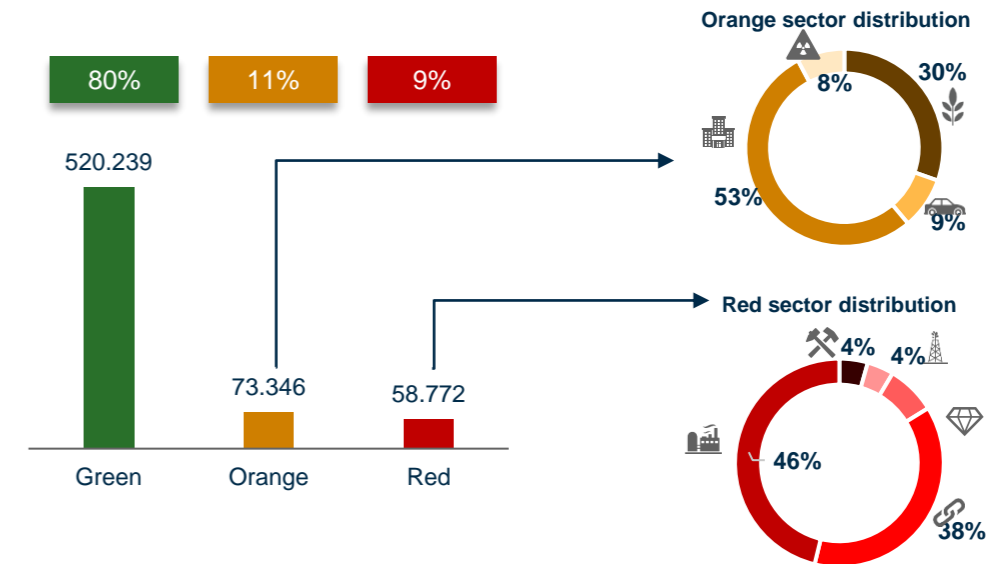
Using GDP/Debt as a KRI and using the Methodology to estimate transmission to each sector the Stress Factors of the Debt allocated to each sector can be calculated.

The stress Factor colour scale has been calculates as follow

- 100-103% Green – No Stress
- 103-110% Orange – Stress
- >110% - Red – Large Stress

Assumption of inflationary passthrough to Households of Energy prices at breakpoint of sector VAB contribution.

## Sectors Impact



# Mitigation Strategies Adopted by European Companies

Evaluating alternative suppliers or increasing their own production are the key mitigation strategies adopted by the European companies

A multipronged strategy to address supply chain disruptions is the need of the hour



## Supplier Diversification

European companies are planning to opt for alternative suppliers/countries to source their raw materials and are decreasing their dependency on Russia

Companies are also going partnerships and acquisitions for different suppliers



## Map Supplier Dependence

Conduct a comprehensive review on exposure to Russian and Ukrainian suppliers on raw material procurement

Suppliers should be mapped on a tier basis to get a clear picture of critical raw materials at risk



## Brace for Cost Increases

Allocate provisions in anticipation of increase in prices of fuel/utilities and certain raw materials, such as metals and agricultural commodities



## Shifting to Other Alternative Sources

Other energy sources are being used by European companies, with the goal of providing a sustainable supply of energy to consumers, businesses, and industries, such as wind and solar energy



## Tax Measures

Enact short-term tax measures on windfall profits to shelter vulnerable electricity consumers from high prices



## Improve Inventory and Labour Planning

Carry out detailed assessments to evaluate the required levels of inventory (particularly of critical inputs) and labour in the short-medium term Ensure that the required inventories are in place in case of disruptions in supply from Russian/Ukrainian sources

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