



Countering Oppositional Political
Extremism through Attuned
Dialogue: Track, Attune, Limit

Offshore vs Reshore Gaming Tool

Deliverable No. 3.4
Offshore vs Reshore
Gaming Tool
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Executive Summary

Overview

Deliverable 3.4 extends the findings of Deliverable 3.3, which highlighted the disruptive role of protectionist narratives in shaping labour market volatility and corporate behaviour. The rise of populist rhetoric and economic nationalism has forced firms to reconsider their global strategies, particularly in balancing the cost advantages of offshoring with resilience against global disruptions that reshoring may offer. This analysis focuses on the interplay between these corporate decisions and market conditions, particularly under the influence of political and economic instability. By employing game theory, this deliverable examines how firms strategically choose between reshoring and offshoring when markets present favourable or unfavourable conditions. Protectionist narratives are shown to drive firms toward reshoring even when it incurs higher costs, reflecting a shift toward political and social considerations over pure economic efficiency. This disruption has significant implications for global supply chains and European labour markets, underlining the importance of understanding these dynamics for policymaking.

The Deliverable 3.4: is categorized as a DEC (Dissemination, Exploitation, and Communication) type deliverable under the OppAttune project. In order, the deliverable is primarily organised as a press release and media action including a short conceptual introduction as well as a game theoretical model that processed offshoring and reshoring decisions.

Methodology

The study models the strategic interaction between firms and markets as a two-player game. Player A (Firms) decides between offshoring and reshoring production, while Player B (Markets) represents external conditions that are either favourable (stability, trade openness) or unfavourable (protectionism, instability). This game-theoretic framework captures the utility outcomes of corporate strategies under varying scenarios, providing a systematic approach to analyse decision-making. Empirical data from the CEDEFOP survey and European Restructuring Monitor anchor this model.

Outcomes

The analysis shows that reshoring dominates in unfavourable markets, driven by its resilience to instability, even when associated with higher costs. Conversely, offshoring performs well in favourable markets, benefiting from cost savings and global trade stability. However, its sensitivity to geopolitical risks and tariffs limits its appeal when market conditions worsen. This dynamic underscores the critical role of protectionist narratives in shaping corporate behaviour.

The findings have far-reaching implications for European labour markets and global supply chains. Reshoring creates localized employment but disrupts transnational networks, amplifying labour market volatility. Offshoring, while efficient, exposes firms to heightened risks in unstable environments. These insights provide policymakers with tools to foster economic resilience, mitigate protectionist disruptions, and balance the trade-offs between reshoring and offshoring.

1. Introduction

The increasing prevalence of protectionist narratives and geopolitical uncertainty has significantly reshaped corporate strategies and labour market dynamics across Europe. These narratives not only influence firms' decisions on whether to re-shore or offshore production but also exacerbate labour market insecurities, creating fertile ground for extremist ideologies.

Building on the findings of Work Package 3: Re-Shoring, Protectionism, Governance Deliverable 3.3: Effective Decision-making Report on Offshoring vs Re-Shoring Decisions, which established a mutually reinforcing relationship between labour market volatility and political extremism, this deliverable delves further into the strategic dimensions of reshoring and offshoring through the lens of game theory. This study investigates the strategic decision-making processes underpinning reshoring and offshoring in the context of protectionist narratives and their socio-economic impacts. Deliverable 3.3 highlighted the interplay between labour market volatility and political extremism, revealing how protectionist narratives shape public perceptions and, in turn, affect corporate strategies. It also emphasized the risks of “everyday extremism,” where normalized protectionist rhetoric becomes embedded in routine decision-making processes, distorting rational economic evaluations.

Deliverable 3.4: Offshoring vs. Reshoring Gaming Tool is built on this foundation by employing game theory to model and analyse the strategic interactions between firms and markets under different conditions. By linking these corporate strategies to broader political and market dynamics, this deliverable aims to understand the challenges posed by everyday extremism, through the adoption of protectionist narratives and economic uncertainty.

The core objective of this deliverable is to employ an advanced game theory modeling to analyze how firms respond to favorable and unfavorable market conditions influenced by protectionist rhetoric. By simulating the strategic interplay between firms and markets, this study sheds light on the role of populist narratives in reshaping corporate decisions. Specifically, the analysis explores how protectionist pressures push firms toward reshoring—returning production to domestic markets—even when this strategy incurs higher economic costs. This behavior not only disrupts global supply chains but also amplifies labor market volatility, exacerbating socio-economic tensions and demonstrated at the deliverables 3.1:

Skills development and understanding cross-country labour transitions and 3.2: Economic Wellbeing Behavioural Toolkit, both from this same Work Package.

Deliverable 3.4: is categorized as a DEC (Dissemination, Exploitation, and Communication) type deliverable under the OppAttune project. This classification reflects its purpose of communicating research findings effectively to both academic and broader audiences, ensuring that the insights gained from the study are accessible, impactful, and actionable. To fulfil the goals of dissemination and communication, this deliverable incorporated a focused media and press strategy. A press release was prepared by Glasgow Caledonian University ([Link to Press Release](#)) to highlight the findings of the research, particularly the influence of protectionist narratives on reshoring and offshoring strategies. This press release emphasized the deliverable's alignment with broader project objectives, such as addressing labour market volatility and countering political extremism. Furthermore, the findings gained significant attention, with coverage in a prominent newspaper: Scottish Business News ([Link to Media Action](#)) thereby extending the reach of the project to policymakers, industry stakeholders, and the public turning the deliverable into media action.

The methodological approach integrates empirical data from the European Restructuring Monitor and the new Second European and Job Survey, developed by the European Centre for the Development of Vocational Training (CEDEFOP), enabling the construction of a payoff matrix that quantifies the economic and strategic trade-offs firms face between offshoring and reshoring.

The results of this analysis align with OppAttune's overarching goal of addressing oppositional extremism by tracking the economic consequences of extremist narratives. By highlighting the economic and political drivers and consequences of reshoring, this deliverable contributes to a more nuanced understanding of how everyday extremism and protectionist narratives influence corporate behavior, labor markets, and democratic resilience.

2. Press and Media Action







2.1 Press release

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Upskilling and stable employment key to combating political extremism

Thu, Nov 28 2024



Ensuring that workers have secure jobs with upskilling opportunities will help combat the rise of political extremism in Europe, according to a major new study.

Companies also need to adopt a strategic approach to corporate decision-making, free from political pressure and other influences, the report claims.

Researchers from Glasgow Caledonian University have analysed employment and industrial data from 29 countries as part of a £2.7 million UK Research and Innovation and EU-funded study into the drivers of extremism and the economic forces shaping modern labour markets.

A recent European Skills and Jobs Survey revealed that 38% of workers across Europe fear losing their jobs in the next year. This general sense of insecurity underscores the need for proactive measures to foster labour market stability and resilience.

Professor Umut Korkut, an expert in International Politics at Glasgow Caledonian and one of the authors, said: "Policymakers must recognise that labour market volatility, even if subjective, poses a serious threat to social and political stability.

"By fostering stable and secure employment conditions, we can counteract the narratives that lead to protectionist and extremist ideologies."

The study calls on employers to foster a culture of continuous learning and upskilling among workers and for governments to invest in skills development.

Researchers analysed employment trends as part of the Horizon Europe and UKRI-funded *OppAttune: Countering*

Researchers analysed employment trends as part of the Horizon Europe and UKRI-funded OppAttune: *Countering Oppositional Political Extremism Through Attuned Dialogue*, which brings together 17 universities from 15 countries.

The Glasgow Caledonian research team comprised Professor Korkut, Thales Lima, Dr Thulai Moyo and Imoh Okoronkwo.

Complementing these findings, another report underscored that the fear of job loss and unemployment may create fertile ground for extremist ideologies.

Researchers explored the growing trend of reshoring—companies bringing production back to domestic markets—as a response to geopolitical risks and the rise of protectionist narratives.

Using advanced game theory modelling, the research analysed how protectionist narratives influence corporate decisions. The findings reveal that firms respond to unfavourable market conditions—such as rising populist politics and instability—by reshoring production despite the economic costs.

Professor Korkut added: “Our analysis shows that reshoring is not always a purely economic decision but is heavily influenced by market dynamics and political pressures.

“These shifts can disrupt global supply chains and contribute to labour market volatility. At the same time, they reflect the powerful role of protectionist narratives in shaping corporate behaviour.”

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The rise of populism across Europe is affecting corporate decision-making, according to a major new study.

Researchers from Glasgow Caledonian University have analysed employment and industrial data from 29 countries as part of a £2.7 million UK Research and Innovation and EU-funded study into the drivers of extremism and the economic forces shaping modern labour markets.

They found some manufacturing firms are bringing production back to domestic markets due to political pressure.

The study reveals that firms are responding to the rise of populist politics and growing instability by reshoring production at great economic cost.

Professor Umut Korkut, of Glasgow Caledonian University, said: "Our analysis shows that reshoring is not always a purely economic decision but is heavily influenced by market dynamics and political pressures.

"These shifts can disrupt global supply chains and contribute to labour market volatility. At the same time, they reflect the powerful role of protectionist narratives in shaping corporate behaviour."

The study concludes that ensuring workers have secure jobs with upskilling opportunities is key to combating the rise of political extremism across Europe.

The last European Skills and Jobs Survey revealed that 38% of workers fear losing their jobs.

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The last European Skills and Jobs Survey revealed that 38% of workers fear losing their jobs.

Professor Korkut added: "Policymakers must recognise that labour market volatility, even if subjective, poses a serious threat to social and political stability.

"By fostering stable and secure employment conditions, we can counteract the narratives that lead to protectionist and extremist ideologies."

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3. Methodology

3.1 Game Framework

The interaction between firms and markets is modelled as a two-player game:

- Player A (Firms): Choosing between:
 - Offshoring: Moving production to foreign markets for cost savings.
 - Reshoring: Bringing production back to domestic markets for resilience and political favor.
- Player B (Markets): Influencing conditions that are either:
 - Favorable: Promoting globalization and trade openness.
 - Unfavorable: Reflecting protectionist narratives and geopolitical instability.

3.2 Data Sources

The analysis leverages data from:

- The Second European Skills and Job Survey (CEDEFOP): 2021 Survey ran across 29 countries with around 46,000 observations. It indicates that 70% of managers prefer not to offshore, while 30% offshore. These proportions were used as weights to reflect the strategic preferences of firms.
- European Restructuring Monitor: The European Restructuring Monitor (ERM), established in 2002, systematically tracks the employment effects of significant restructuring events across the EU Member States and Norway, providing valuable insights into labour market dynamics and corporate restructuring trends. These averages of cases of reshoring and jobs created quantify the economic impact of reshoring and are scaled into the payoff matrix.

3.3 Payoff Matrix Construction

The payoff matrix quantifies the utility for firms under different strategy combinations. The scale used ranges from -20 to +20 representing the impact of market conditions on the

strategies. Adjustments for favourable and unfavourable markets were applied based on empirical evidence and theoretical reasoning. To illustrate this rationale, see table 1 below:

TABLE 1 - PAYOFF SCALE

Scale Value	Market Conditions	Impact on Strategy	Examples/Literature
20	Highly favourable, global stability	Maximum cost savings and efficiency for offshoring.	Stable markets under free trade agreements (Rodrik, 2018).
10	Favourable with minor disruptions	High efficiency for offshoring, moderate benefits for reshoring.	Partial trade agreements with mild restrictions.
0	Neutral conditions	Balanced impact; no significant penalties or benefits.	Unchanging geopolitical or trade conditions (WTO, 2020).
-10	Unfavourable, mild instability	Moderate penalty for reshoring due to inefficiencies.	Reshoring under mild recession or low domestic demand (Ellram, 2013).
-15	Highly unfavourable, significant risks	Severe penalties for offshoring due to tariffs and disruptions.	Offshoring during trade wars or sanctions (Chopra & Sodhi, 2004).
-20	Extreme instability or crisis	Maximum penalty for both strategies due to collapse.	Complete supply chain shutdown or severe geopolitical conflict (Bailey & De Propris, 2014).

In game theory, payoff matrices are essential tools that represent the potential outcomes of strategic interactions between players. Each cell in a payoff matrix corresponds to a specific combination of strategies chosen by the players, detailing the resulting payoffs. This structured representation facilitates the analysis of strategic decisions and the prediction of equilibrium outcomes.

In the context of this deliverable, we have constructed a payoff matrix to model the strategic decision-making processes of firms considering offshoring or reshoring under varying market

conditions (which includes the effect of protectionist narratives). The matrix is designed to quantify the utilities for firms based on their chosen strategies and the prevailing market environment, which can be either favorable or unfavorable.

TABLE 2 – PAYOFF MATRIX

Pay-off Matrix (representative)		Market conditions	
		Favourable Market	Unfavourable Market
Managers	Offshoring	$0.3 \times \text{Cost Savings} + 5$	$0.3 \times (\text{Cost Savings} - 15)$
	Reshoring	$0.7 \times \text{Jobs Created} + 5$	$0.7 \times (\text{Jobs Created} - 10)$

3.4 Interpretation of the Payoff Matrix:

This payoff matrix encapsulates the trade-offs firms face when deciding between offshoring and reshoring under different market conditions. In favourable markets, offshoring yields higher payoffs due to substantial cost savings and added benefits, whereas reshoring also provides positive payoffs through job creation and market incentives. Conversely, in unfavourable markets, the payoffs for offshoring diminish due to penalties, making reshoring a comparatively more attractive strategy despite its associated costs.

By quantifying these payoffs, the matrix serves as a foundational tool for analysing firms' strategic choices, enabling the prediction of equilibrium strategies and the assessment of how protectionist narratives and market conditions influence corporate decision-making.

4. Results and Conclusion

The game-theoretic analysis presented in this deliverable underscores the critical role of protectionist narratives and market dynamics in shaping corporate decision-making. The payoff calculations reveal a decisive trend: firms consistently favour reshoring as a dominant strategy under unfavourable market conditions, despite the associated economic costs. This finding highlights the pervasive influence of geopolitical risks, protectionist policies, and labour market instability on reshoring and offshoring strategies.

Reshoring emerges as a strategic response to uncertainty and volatility associated with unfavourable markets. The calculated payoffs demonstrate that reshoring offers significantly higher utility to firms compared to offshoring, particularly when penalties such as tariffs, supply chain disruptions, and political instability are factored into market conditions. This trend reflects the alignment of corporate behaviour with domestic political pressures and public demands for economic sovereignty, even at the expense of cost-efficiency.

Conversely, offshoring remains an economically viable option in favourable markets, driven by stability and significant cost savings. However, its sensitivity to geopolitical risks and reliance on global trade openness render it a less sustainable strategy in the current protectionist climate. The diminished attractiveness of offshoring under unfavourable conditions underscores the extent to which protectionist narratives disrupt global supply chains and influence firm-level decision-making.

This deliverable builds on the insights of Deliverable 3.3, which identified labour market volatility and political extremism as mutually reinforcing phenomena shaped by corporate behaviour and public perceptions. Reshoring, while fostering localized job creation, can exacerbate labour market instability by disrupting global supply chains and contributing to economic fragmentation. These dynamics illustrate the intricate interplay between labour market conditions, political ideologies, and corporate strategies, reinforcing the findings of the broader Opportune project.

The results of this analysis emphasize the need for proactive policy measures to counteract the destabilizing effects of protectionist narratives. By fostering labour market stability, promoting upskilling initiatives, and incentivizing strategic reshoring, policymakers can mitigate the socio-economic impacts of reshoring and offshoring decisions. Ensuring that firms adopt a balanced approach to global and domestic production will help reduce labour market volatility, counter extremist ideologies, and safeguard democratic stability.

Ultimately, the findings of this analysis emphasize the influence of everyday extremism in day-to-day decision-making processes. As these narratives embed themselves in public discourse, they can create an environment where firms feel compelled to align their strategies with politically charged demands, even when such decisions may not be economically optimal. This alignment may perpetuate a cycle of labour market instability and political polarization, reinforcing the broader socio-economic impacts of everyday extremism. The game-theoretic

results illustrate how this phenomenon drives reshoring as a response to both economic pressures and the socio-political climate, highlighting the interplay between corporate behaviour and the normalization of extremist narratives.

In conclusion, this study highlights that reshoring is not merely an economic decision but a strategic choice heavily influenced by socio-political pressures. By addressing the root causes of labour market volatility and protecting against the adverse effects of protectionist narratives, policymakers and firms can build a more resilient and inclusive economic future.

5. Bibliography

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Data Appendix

This data appendix aims to provide a transparent and comprehensive view of the reshoring trends in Europe, forming the basis for the strategic insights presented in this deliverable. For a better visualisation of the dataset used in this deliverable, please visit the website (XXX).

Reshoring Cases in Europe (2003–2024)

This section provides detailed data on the number of reshoring cases across European countries from 2003 to 2024. Reshoring refers to the process of companies relocating production activities back to their domestic markets, often influenced by geopolitical, economic, and policy-driven factors. Understanding the dynamics of reshoring is critical to assessing how protectionist narratives and labour market pressures shape corporate strategies in Europe.

The data presented here captures reshoring activities across a broad time frame, segmented into two-year intervals to highlight trends and fluctuations over time. Each row corresponds to a specific European country, while columns represent the number of reshoring cases for each interval. The final row provides aggregate totals across all countries for each period, offering a macro-level perspective on reshoring patterns in Europe.

The dataset serves as the empirical foundation for the game-theoretic modelling presented in this deliverable. By linking these reshoring trends to labour market outcomes and market conditions, this analysis quantifies the economic and strategic impacts of reshoring under different scenarios. It also contextualizes how reshoring contributes to localized job creation, disrupts global supply chains, and reflects corporate responses to unfavourable market conditions shaped by political pressures.

Key Trends

- **Temporal Trends:** A notable increase in reshoring cases during periods of heightened political and economic instability, such as the mid-2010s, which align with growing protectionist narratives across Europe.
- **Geographic Distribution:** Countries such as Poland, France, and Germany consistently exhibit higher levels of reshoring activity, reflecting their industrial strength and the influence of domestic policies on reshoring decisions.

- **Economic Implications:** The variation in reshoring activity across countries and years underscores the interplay between labour market conditions, government incentives, and global economic trends.

Job Creation from Reshoring in Europe (2003–2024)

The table presents data on job creation associated with reshoring activities across European countries over the period 2003–2024. Reshoring, driven by political and economic pressures, has become a pivotal strategy for firms aiming to reduce dependency on global supply chains, address domestic labour market concerns, and respond to protectionist narratives. By examining the scale of job creation, this dataset provides key insights into the economic impact of reshoring decisions.

The table aggregates job creation data across a two-decade period, broken down into two-year intervals to highlight trends and fluctuations. Each row represents a European country, with columns capturing the number of jobs created during specific time periods. The final row provides aggregate totals for all countries, offering a regional perspective on reshoring's contribution to employment growth and its evolution over time.

This dataset forms a cornerstone for the game-theoretic modelling presented in this deliverable, linking labour market outcomes to corporate decision-making. By quantifying the employment impact of reshoring under varying market conditions, the data reveals how firms adjust their strategies in response to economic pressures and protectionist narratives. It also underscores reshoring's potential to stabilize domestic labour markets while challenging traditional global supply chain structures.

Key Trends

- **Temporal Trends:** Peaks in job creation correspond to periods of intensified reshoring activity, particularly during the mid-2010s. These surges coincide with significant political and economic events, such as rising protectionist sentiment and global trade uncertainties.
- **Geographic Distribution:** Countries like Poland, Germany, and France consistently lead in reshoring-related job creation. This reflects their industrial strength, workforce

capabilities, and the effectiveness of domestic policies in attracting reshoring investment.

- **Economic Implications:** The dataset reveals a clear interplay between economic policies, market stability, and the labour market impact of reshoring. While larger economies gain substantial employment benefits, smaller countries also demonstrate reshoring's potential to drive localized job creation and economic resilience.

TABLE 3 - CASES OF RESHORING

Countries	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Austria	1	4	4	3	9	7		13	11	9	9	6	7	13	16	7	7	2	6	13	5
Belgium			7	21	14	15	11	15	4	12	4	11	23	12	6	12	4	6	10	5	8
Bulgaria			29	48	16	7		3	10	6	10	13	7	9	3	4	8	3	1	12	11
Croatia											2	16	20	14	8	18	9	5	7	12	10
Czechia			81	83	79	28	28	29	39	24	46	42	45	55	41	19	12	21	13	18	10
Denmark	2		3	3		2	2	3	2		2	3		1	4	2	1	3		1	
Estonia			9	10	10	3	9	9	4	4	3	3	3	6	1	3	3	1	7	7	4
Finland	2		4	3	1	2		2	5	1	1	2	4	11	30	16	9	6	6	4	3
France	2	22	19	84	72	27	13	47	103	70	52	48	44	79	161	138	109	72	109	137	98
Germany		6	46	54	39	24	7	22	30	26	32	35	23	31	33	22	9	11	11	29	19
Greece				8	3	9	2		1	1	1	7	1	1		2	3	3	8	3	1
Hungary			37	16	17	15	9	22	28	22	33	27	19	19	32	23	17	15	16	18	18
Ireland	6	3	1	27	25	29	20	48	25	40	24	44	55	60	53	47	43	18	51	78	40
Italy	1			1	9	12	16	15	7	11	7	12	17	28	12	13	7	24	24	23	20
Latvia			4	1	16			1	7	3	1		1	2	1	1	1		4	2	2
Lithuania			19	14	4	8	8	12	14	11	13	10	18	20	26	41	21	23	31	27	9
Netherlands			1	1	2	6	3	2	1		5	3	2	8	12	13	15	7	9	3	1
Norway				8	2	5	4					4	3	1	5	6	3			5	1
Poland		59	235	249	238	163	68	73	98	78	91	128	147	162	154	132	103	71	153	65	59
Portugal				12	12	16	16	16	14	13	18	18	28	19	17	24	14	9	14	20	16
Romania			53	71	42	50	27	44	38	63	50	63	29	76	115	49	32	21	43	49	39
Slovakia		27	65	64	57	28	21	27	25	13	19	16	19	20	23	8	9	2	7	8	6
Slovenia			13	5	14	13	4	12	8	3	4	4	8	14	23	6	10	6	16	7	5
Spain		5	7	9	18	5	5	7	9	12	5	14	21	14	2	14	17	19	37	36	27
Sweden		1	10	6	18	9	6	17	12	15	8	5	20	19	15	11	4	4	7	13	5
United Kingdom	1	31	54	86	72	42	69	54	56	80	55	125	74	87	169	134	86	62	10		
Total	15	158	701	889	797	531	354	497	556	521	497	662	640	781	965	766	556	414	601	598	418

TABLE 4 - JOB CREATION FROM RESHORING

Countries	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24
Austria	1000	1190	1480	340	2575	1380		3447	2090	1245	1205	895	1330	10625	4890	635	1120	335	2265	6915	1100
Belgium			1373	3952	7315	3902	5568	3815	740	2504	2154	2744	5595	1970	2512	5485	1568	2180	2854	2350	5150
Bulgaria			12424	24290	4934	3450		1450	3210	2040	2295	3816	3750	3050	600	2390	3340	1300	150	2650	2045
Croatia											600	3274	8149	3330	1869	2406	3095	800	1300	2032	1294
Czechia			37913	58818	36502	15596	11882	10322	11768	5550	16248	12358	13088	18513	11948	4784	3106	16382	3170	16567	2130
Denmark	1600		1000	649		1650	380	730	350		1500	1400		55	784	220	30	1075		200	
Estonia			2280	1410	3466	690	2107	2570	400	900	300	880	379	1000	200	210	425	165	1560	1427	802
Finland	310		850	750	300	340		650	920	100	300	400	750	2840	5976	3221	2120	1345	2610	450	1650
France	650	19200	8610	83269	97250	19340	9330	19839	59940	44464	29239	14684	14043	39114	64183	46879	33429	21887	49851	70411	46816
Germany		7650	37238	35649	38285	46555	9170	11368	22951	16525	17125	11381	25995	19465	32883	11525	10920	25330	18980	36075	13222
Greece				2736	3013	4104	458		250	100	270	2501	226	170		748	778	2864	1888	590	700
Hungary			12624	11100	6620	6795	2277	8220	6651	4571	6646	8129	5052	4707	8473	3939	4053	4933	2813	5215	7203
Ireland	1735	1430	150	10462	5141	6906	7390	12140	4225	9915	5052	8713	8836	11512	11367	10837	11177	7210	18915	20616	9838
Italy	300			500	2980	4460	8710	6790	1580	4563	4620	6720	33021	12108	6263	7960	3960	12980	21498	23498	7855
Latvia			1150	100	1848			100	1028	393	200		100	1200	1000	300	200		820	600	457
Lithuania			10688	2180	3500	1577	880	2430	2130	1430	1590	1910	5155	4236	5694	7738	4067	4213	7142	4860	1650
Netherlands			500	300	3300	1600	700	550	140		2050	730	750	9279	4625	5635	6275	2950	1946	1050	400
Norway				1692	1050	1620	1480					1150	320	100	555	900	460			3750	200
Poland		24383	96051	137226	94513	71492	35592	25717	25951	27888	27998	41970	33014	40337	45566	38128	31720	19950	59827	23086	25637
Portugal				11404	10477	7010	12005	4816	4014	5924	3537	4443	11275	3760	5448	5717	3960	2730	7412	4576	6222
Romania			37265	44089	37380	31025	10290	16045	10879	27843	16638	19569	8275	29585	35045	15302	10460	7717	22002	17524	15532
Slovakia		9124	30802	28276	37525	7368	5965	10894	8133	2340	3678	4107	3693	5926	10975	2170	1185	200	2510	2315	1360
Slovenia			5110	1110	6288	2867	384	2769	2161	620	478	912	1030	1850	3498	840	1249	1880	2640	744	820
Spain		1950	4370	8700	6468	1560	2500	2308	4020	4390	2900	5906	10430	13948	200	14813	7221	10129	18807	21991	19757
Sweden		400	1895	2420	5150	1955	2742	4861	3890	3180	1286	2800	5625	3211	3886	5130	3350	520	1545	4190	715
United Kingdom	215	29268	70741	51702	40969	35280	71101	27958	37002	43375	26816	61859	40418	50298	61564	55370	29703	76219	4970		
Total	5810	94595	374514	524274	459189	279847	202964	182489	215838	210735	175081	223731	240749	292189	330898	253882	178971	225294	257575	274882	173055

Mathematical Appendix:

This appendix details the calculations underpinning the payoff matrix in Deliverable 3.4, which models strategic corporate decisions regarding reshoring and offshoring under different market conditions. Using game theory, the analysis incorporates empirical data on job creation and reshoring cases alongside assumptions about cost savings to quantify firms' decision-making processes. These calculations provide a foundation for understanding how protectionist narratives and market dynamics influence corporate strategies.

The payoff matrix integrates two critical data points derived from the European Restructuring Monitor:

- Average Jobs Created (Reshoring): The dataset indicates an average of 271,499 jobs created annually from reshoring activities across 21 time periods.
- Average Number of Reshoring Cases: The average number of reshoring cases is 590 per year over the same periods.

By combining these metrics, we calculate the average number of jobs created per reshoring case as follows:

$$\text{Jobs per Case} = \frac{\text{Average Jobs Created}}{\text{Average Reshoring Cases}}$$

This normalization ensures that the payoff matrix reflects not only the overall economic impact of reshoring but also the incremental impact of individual cases.

While specific empirical data on cost savings from offshoring is limited, studies indicate that labor cost savings are a primary motivation for offshoring decisions. For instance, Lin (2020) notes that firms often pursue offshoring to capitalize on substantially lower labour costs, though these savings can be offset by additional expenses arising in certain situations. Similarly, Dibbern et al. (2008) identify four particular types of unexpected 'extra costs' arising from outsourcing software projects to third-party providers abroad: requirement specification and design costs, knowledge-transfer costs, coordination costs, and control costs. Given the absence of precise data, adopting a standard benchmark of 10,000 cost-saving units per offshoring decision serves as a reasonable placeholder for modelling purposes. This

assumption aligns with general findings in economic literature and facilitates the analysis, though it should be validated or adjusted in future studies as more detailed data becomes available.

The matrix (table 2) then evaluates four scenarios combining two strategies (reshoring and offshoring) under two market conditions (favourable and unfavourable). Each scenario's payoff is calculated using the following formulas:

- Reshoring Payoff (Favourable Market):
 - $[0.7 \times (\text{Jobs Created per Case} \times \text{Reshoring Cases}) + 5]$
- Reshoring Payoff (Unfavourable Market):
 - $0.7 \times [(\text{Jobs Created per Case} \times \text{Reshoring Cases}) - 10]$
- Offshoring Payoff (Favourable Market):
 - $0.3 \times (\text{Cost Savings} + 5)$
- Offshoring Payoff (Unfavourable Market):
 - $0.3 \times (\text{Cost Savings} - 15)$

Using the formulas and data outlined above, the payoffs for each scenario are calculated as follows:

- **Reshoring (Favourable Market):** 189,983.5
- **Reshoring (Unfavourable Market):** 189,973
- **Offshoring (Favourable Market):** 3,001.5
- **Offshoring (Unfavourable Market):** 2,995.5

The results show that reshoring dominates as the preferred strategy under unfavourable market conditions, driven by its higher payoffs relative to offshoring. Conversely, offshoring remains viable in favourable markets due to its cost-saving potential. The integration of empirical data, particularly the normalization of job creation per reshoring case, ensures that the analysis reflects realistic economic impacts. The assumed cost savings for offshoring highlight an area for further data refinement, providing an avenue for future research to enhance the robustness of these findings.

