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The Impact of the Short Span between COVID-19 Recovery and the Onset of Russia-Ukraine Conflict on the Financial Performance of FTSE 350 Service Firms

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Abstract
The COVID-19 outbreak and recovery, as well as the Russia-Ukraine conflict, have resulted in several difficulties and risks that affect economies and the businesses functioning within them. Both have fundamentally altered how businesses are run. So far, just a few studies have examined how the conflict between Russia and Ukraine affects both countries, with a particular focus on Russia given the severe international financial sanctions that are now affecting its economy. Thus, this study explored the effect of the short timeframe between COVID-19 recovery and the onset of the Russia-Ukraine war on the financial performance of FTSE 350 service companies. In the study, the financial ratios of the sampled firms were computed for both during COVID-19 recovery (i.e., from the last quarter of 2021 to the end of the 1st quarter of 2022) and during the Russia-Ukraine war (i.e., from the end of the 1st quarter of 2022 to the end of the 1st quarter of 2023). Then, using t-test, the significance level of the differences between these two sets of financial ratios was determined. From the results, it was revealed that the overall performance of the firms improved, with service firms into energy services, real estate, financial services, materials procurement, and staffing/recruitment services being less sensitive to the effect of the Russia-Ukraine war on their financial performance indicators whereas the firms into asset management, investment management, retails, and insurance were more sensitive to the effect of the war as their financial performance were more negatively impacted on by the war. And despite the improved performances of the firms, the differences in their performance compared to the period of COVID-19 recovery were not statistically significant. Hence, the null hypothesis formulated in the study was accepted, implying that there is no significant effect of the short timeframe between the recovery from COVID-19 and the onset of Russia-Ukraine war on the financial performance of FTSE 350 service firms.
Keywords: COVID-19 recovery; Russia-Ukraine conflict; Financial performance; FTSE 350 service firms; Financial ratios.
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1. Introduction

Due to Russia's military attack on Ukraine on February 24, 2022, global commodity prices have risen to multi-year highs following the recovery of stock markets from COVID-19. As one of the largest producers of wheat, natural gas, and oil in the world, Russia has a significant impact on the global commodity balance. For instance, the conflict between Russia and Ukraine led to a spike in both Brent and West Texas Intermediate (WTI) crude oil prices to above $100 per barrel. Gas prices have soared to $3.54 per gallon due to the war, and the price of gold has risen to $1900 per ounce (Liadze *et al*., 2022; Alam *et al*., 2022). The conflict between Russia and Ukraine has brought about several shocks for the financial market.

The war is impeding trade and financial intermediation, which raises fears about weaker global economic development and higher inflation (Liadze *et al*., 2022; Choi, 2021). In 2022, the Russian GNP was predicted to decrease by more than 10%. The Ukrainian economy was predicted to contract by more than 30% in 2022, whereas the global economy was predicted to contract by roughly 1%, or $1.5 trillion in Purchasing Power Parity terms (Liadze *et al*., 2022; Ahmed *et al*., 2022). The GDP of Europe was projected to decrease by more than 1% in 2022. German GDP will specifically see decreases due to the war of 1.5% in 2022 and 1.7% in 2023 (Liadze *et al*., 2022; Ahmed *et al*., 2022). Additionally, in 2022 and 2023, the GDP in France and Italy would decline by more than 1%. According to Gunnella *et al*. (2022), the European Central Bank (ECB) recently predicted that rising energy prices would reduce European growth by 0.2 percentage points. As a result of the gas supply being shut off, a gas rationing shock would reduce the EU GDP by 0.7% (Alam *et al*., 2022). Inflation in the UK was predicted to peak at over 7% in the second quarter of 2022, mostly because of rising gas and electricity prices (Cunliffe, 2022; Bartrum, 2022).

The amount of research done on market efficiency during the COVID-19 outbreak is growing (Choi, 2021; Alijani *et al*., 2021; Okorie and Lin, 2021; Ozkan, 2021; Mensi *et al*., 2020 and Frezza *et al*., 2021) and these studies' overall findings are comparable, which is that, during the COVID-19, stock markets were inefficient.

However, very few studies have examined the period following the COVID-19 recovery, which coincided with the Russia-Ukraine conflict and saw volatility shocks. Using FTSE 350 service firms as a study population, this study investigated whether the UK stock market efficiency has changed between the recovery from COVID-19 and the Russia-Ukraine conflict. The study determined: 1. the financial performance of the FTSE-350 service firms during the period of COVID-19 recovery (i.e., from the last quarter of 2021 to the end of the 1st quarter of 2022), 2. the financial performance of the FTSE-350 service firms during the Russia-Ukraine war (i.e., from the end of the 1st quarter of 2022 to the end of the 1st quarter of 2023), and 3. how significant the difference in the financial performance of the FTSE-350 service firms was between the periods of COVID-19 recovery and Russia/Ukraine conflict using t-test.

2. Methodology

The adopted method for this study was secondary research. It entailed exploring, compiling, synthesising, and summarising previous relevant research and data to achieve the study's objectives (Thompson, 2017). By using secondary research, the researcher was able to amass useful data on the effects of the brief period between the beginning of the Russia-Ukraine conflict and the recovery from the COVID-19 pandemic on the financial performance of FTSE 350 service firms. The utilisation of secondary research also guaranteed that the study was supported by relevant theoretical frameworks (Cheng and Phillips, 2014). The choice of FTSE 350 companies in this study was made to ensure that a sizable sample size was arrived at since the study is focused on only service firms. Documentation analysis, desktop study, and records inspection were adopted in the study to access data from published or documented financial reports. Relevant data were extracted from FTSE 350 service companies' financial statements for 2021/2022 and 2022/2023 financial years. The source of the financial statements was the London Stock Exchange (LSE) database (London Stock Exchange, 2023). Companies that lacked sufficient financial data for the interest periods were removed from the study sample. Thus, the study adopted a purposive (non-probability) sampling. The adoption of non-probability sampling also aids in the generalizability of the study findings (Babbie, 2007).

From the LSE database, the listed service firms were only 33. However, because this study assessed two sets of financial years - one set being from the last quarter of 2021 to the end of the first quarter of 2022 (which coincided with the COVID-19 recovery period), and the second set being from the end of the first quarter of 2022 to the end of the first quarter of 2023 (which coincided with the period of Russia/Ukraine conflict); the sample size was determined to be 15 firms after screening the available financial statements/information of the listed service firms. The firms' financial performance was assessed using accounting-based performance indicators, specifically financial ratios. The financial ratios examined in the study were liquidity (assessed using current ratio), profit margin, return on equity (ROE), return on assets (ROA), return on capital employed (ROCE), return on sales (ROS), and asset turn over (ATO). These ratios were adopted as proxies for financial performance since they enable comparisons between companies in the same industry (Thabet, 2017).

This study followed a positivist paradigm due to the utilization of quantitative data (Bryman and Bell, 2015). Ahmad (2008) claimed that the adoption of positivism also emphasizes the formulation and test of hypotheses. In the study, the researcher hypothesized that the short time between the start of the Russia-Ukraine crisis and the recovery from COVID-19 had a detrimental effect on the financial performance of FTSE-350 service companies. Due to the deductive nature of quantitative research, this study also used a deductive research technique (Powell, 2019). In this investigation, inferential statistics were used. By using inferential statistics, the researcher assessed whether a trend between two sets of data was likely to be reliable or simply a coincidence (Pfleger, 2022).

To evaluate whether there is a statistically significant difference between the means of the two sets of data (one set of data being during the COVID-19 recovery and the other set during the Russia-Ukraine war), the inferential statistic "t-test" was utilized. For carrying out the t-test, Microsoft Excel was utilized. The t-test tests the null hypothesis that the means of two data sets are equal. After conducting the t-test, if t-Stat > t-Critical two-tail, the null hypothesis (H_0) was rejected, which suggested that the short span/timeframe between the recovery from COVID-19 and the start of the Russia-Ukraine war is the cause of the statistically significant difference in the financial performance of FTSE-350 service companies for the two financial years under consideration. However, to determine if equal or unequal variances is assumed during the t-test, an F-test was first performed. The F-test hypothesizes that the variances of two sets of data are equal. After the F-test, if F > F-Critical one-tail, the null hypothesis was rejected. Implying that the variances of the two sets of data were not equal.

3. Results and Discussions

The financial performance analyses in this study were done using the firms' assets, liabilities, equities, sales, and profits as provided in the firms' financial statements and as shown in Table 1.

Table 1: Extracted financial items of the sampled FTSE 350 service firms.

ID	Company	Financial item	Financial Year	
1	**UK COMMERCIAL PROPERTY REIT**	**(£'000)**	**31-Dec-21**	**31-Dec-22**
		Current assets	92,884	83,509
		Current liabilities	27,698	31,714
		Current/Liquidity ratio	3.353	2.633
		Net profit	236,233	222,329
		Equity	1,325,228	1,035,719
		Return on Equity (ROE)	0.178	0.215
		Total assets	1,601,252	1,359,119
		Return on Assets (ROA)	0.148	0.164
		Sales	266,535	189,570
		Profit margin ratio	0.886	1.173
		Operating profit	243,400	213,459
		Return on capital employed (ROCE)	0.155	0.161
		Return on sales (ROS)	0.913	1.126
		Asset turn over (ATO)	0.169	0.143
2	**Finsbury Growth & Income Trust PLC**	**(£'000)**	**31-Mar-22**	**31-Mar-23**
		Current assets	20,233	10,877
		Current liabilities	41,927	3,263
		Current/Liquidity ratio	0.483	3.333
		Net profit	46,608	216,498
		Equity	1,983,218	1,958,290
		Return on Equity (ROE)	0.024	0.111
		Total assets	1,830,384	1,958,290
		Return on Assets (ROA)	0.025	0.111
		Sales	17,061	15,921
		Profit margin ratio	2.732	13.598
		Operating profit	15,109	14,044
		Return on capital employed (ROCE)	0.008	0.007
		Return on sales (ROS)	0.886	0.882
		Asset turn over (ATO)	0.010	0.008
3	**SEGRO PLC**	**(£m)**	**31-Dec-21**	**31-Dec-22**
		Current assets	47	108
		Current liabilities	47	61
		Current/Liquidity ratio	1	1.770
		Net profit	4,067	1,930
		Equity	4,885	5,012
		Return on Equity (ROE)	0.833	0.385
		Total assets	9,475	10,763
		Return on Assets (ROA)	0.429	0.179
		Sales	546	669
		Profit margin ratio	7.449	2.885
		Operating profit	4,477	1,694
		Return on capital employed (ROCE)	0.475	0.158
		Return on sales (ROS)	8.200	2.532
		Asset turn over (ATO)	0.058	0.063

ID	Company	Financial item	Financial Year	
4	**Fidelity Emerging Markets Ltd**	**($'000)**	**31-Dec-21**	**31-Dec-22**
		Current assets	50,019	51,018
		Current liabilities	24,983	21,731
		Current/Liquidity ratio	2.002	2.348
		Net profit	160,215	32,669
		Equity	1,134,028	749,516
		Return on Equity (ROE)	0.141	0.044
		Total assets	1,134,028	749,516
		Return on Assets (ROA)	0.141	0.044
		Sales	13,767	16,473
		Profit margin ratio	11.638	1.983
		Operating profit	403,746	1,351
		Return on capital employed (ROCE)	0.364	0.002
		Return on sales (ROS)	29.327	0.082
		Asset turn over (ATO)	0.012	0.023
5	**Impax Environmental Markets PLC**	**(£'000)**	**31-Dec-21**	**31-Dec-22**
		Current assets	28,616	27,037
		Current liabilities	3,036	53,535
		Current/Liquidity ratio	9.426	0.505
		Net profit	240,438	224,270
		Equity	1,479,638	1,275,938
		Return on Equity (ROE)	0.162	0.176
		Total assets	1,479,638	1,275,938
		Return on Assets (ROA)	0.162	0.176
		Sales	15,195	20,160
		Profit margin ratio	0.162	0.176
		Operating profit	2,789	5,125
		Return on capital employed (ROCE)	0.002	0.004
		Return on sales (ROS)	0.184	0.254
		Asset turn over (ATO)	0.010	0.016
6	**JD Sports Fashion PLC**	**(£m)**	**28-Jan-22**	**28-Jan-23**
		Current assets	2,676.50	3,435.70
		Current liabilities	1,886.90	2,163.00
		Current/Liquidity ratio	1.418	1.588
		Net profit	459.6	226.7
		Equity	2,339.60	2,633.40
		Return on Equity (ROE)	0.196	0.086
		Total assets	7,068.60	8,024.70
		Return on Assets (ROA)	0.065	0.028
		Sales	8,563.00	10,125.00
		Profit margin ratio	0.054	0.022
		Operating profit	721.2	509.8
		Return on capital employed (ROCE)	0.139	0.087
		Return on sales (ROS)	0.084	0.050
		Asset turn over (ATO)	1.653	1.727

ID	Company	Financial item	Financial Year	
7	**RHI Magnesita**	**(€ million)**	**31-Dec-21**	**31-Dec-22**
		Current assets	2,163.50	2,188.70
		Current liabilities	1,209.30	1,113.90
		Current/Liquidity ratio	1.789	1.965
		Net profit	166.8	249.7
		Equity	1,048.60	822.2
		Return on Equity (ROE)	0.159	0.304
		Total assets	3,914.10	4,074.90
		Return on Assets (ROA)	0.043	0.061
		Sales	2,551.40	3,317.20
		Profit margin ratio	0.065	0.075
		Operating profit	91.8	233.8
		Return on capital employed (ROCE)	0.034	0.079
		Return on sales (ROS)	0.036	0.070
		Asset turn over (ATO)	0.943	1.120
8	**Vietnam Enterprise Investments Ltd**	**($)**	**31-Dec-21**	**30-Jun-22**
		Current assets	2,602,412,178	2,031,910,828
		Current liabilities	8,206,175	8,255,480
		Current/Liquidity ratio	317.129	246.129
		Net profit	753,345,700	523,509,415
		Equity	2,606,977,922	2,036,936,184
		Return on Equity (ROE)	0.289	0.257
		Total assets	2,615,184,097	2,045,191,664
		Return on Assets (ROA)	0.288	0.256
		Sales	774,995,817	497,189,973
		Profit margin ratio	0.972	1.053
		Operating profit	21,026,648	25,617,186
		Return on capital employed (ROCE)	0.008	0.013
		Return on sales (ROS)	0.027	0.052
		Asset turn over (ATO)	0.297	0.244
9	**Foresight Solar Fund Ltd**	**(£'000)**	**31-Dec-21**	**31-Dec-22**
		Current assets	71,342	56,062
		Current liabilities	444	537
		Current/Liquidity ratio	160.680	104.399
		Net profit	117,892	154,471
		Equity	660,000	771,467
		Return on Equity (ROE)	0.179	0.200
		Total assets	660,444	772,004
		Return on Assets (ROA)	0.179	0.200
		Sales	124,882	162,992
		Profit margin ratio	0.944	0.948
		Operating profit	34,139	43,092
		Return on capital employed (ROCE)	0.052	0.056
		Return on sales (ROS)	0.273	0.264
		Asset turn over (ATO)	0.189	0.211

ID	Company	Financial item	Financial Year	
10	**Witan Investment Trust PLC**	**(£'000)**	**31-Dec-21**	**31-Dec-22**
		Current assets	39,273	39,773
		Current liabilities	108,306	102,693
		Current/Liquidity ratio	0.363	0.387
		Net profit	262,743	280,554
		Equity	1,992,041	1,541,809
		Return on Equity (ROE)	0.132	0.182
		Total assets	2,258,093	1,801,984
		Return on Assets (ROA)	0.116	0.156
		Sales	37,572	44,206
		Profit margin ratio	6.993	6.347
		Operating profit	19,247	29,994
		Return on capital employed (ROCE)	0.009	0.018
		Return on sales (ROS)	0.512	0.679
		Asset turn over (ATO)	0.017	0.026
11	**Prudential PLC**	**($m)**	**31-Dec-21**	**31-Dec-22**
		Current assets	180,840	154,671
		Current liabilities	9,663	11,149
		Current/Liquidity ratio	18.715	13.873
		Net profit	2,813	1,007
		Equity	17,264	17,127
		Return on Equity (ROE)	0.163	0.059
		Total assets	199,102	165,942
		Return on Assets (ROA)	0.014	0.006
		Sales	26,500	8,219
		Profit margin ratio	0.106	0.123
		Operating profit	2,214	1,007
		Return on capital employed (ROCE)	0.012	0.007
		Return on sales (ROS)	0.084	0.123
		Asset turn over (ATO)	0.140	0.053
12	**SSE PLC**	**(£m)**	**31-Mar-22**	**31-Mar-23**
		Current assets	6,937	5,766
		Current liabilities	4,658	4,761
		Current/Liquidity ratio	1.489	1.211
		Net profit	3,078	61
		Equity	9,169	11,115
		Return on Equity (ROE)	0.336	0.005
		Total assets	25,756	27,138
		Return on Assets (ROA)	0.119	0.002
		Sales	8,697	12,491
		Profit margin ratio	0.354	0.005
		Operating profit	3,639.7	808.6
		Return on capital employed (ROCE)	0.173	0.036
		Return on sales (ROS)	0.418	0.065
		Asset turn over (ATO)	0.412	0.558

ID	Company	Financial item	Financial Year	
13	**Sthree PLC**	**(£'000)**	**30-Nov-21**	**30-Nov-22**
		Current assets	355,550	429,693
		Current liabilities	218,430	243,629
		Current/Liquidity ratio	1.628	1.764
		Net profit	41,982	54,202
		Equity	158,153	200,392
		Return on Equity (ROE)	0.265	0.270
		Total assets	400,574	470,404
		Return on Assets (ROA)	0.105	0.115
		Sales	1,330,726	1,639,446
		Profit margin ratio	0.032	0.033
		Operating profit	60,993	77,552
		Return on capital employed (ROCE)	0.335	0.342
		Return on sales (ROS)	0.046	0.047
		Asset turn over (ATO)	7.306	7.229
14	**Renewables Infrastructure Group Ltd**	**(£'000)**	**31-Dec-21**	**31-Dec-22**
		Current assets	56,535	38,478
		Current liabilities	362	3,193
		Current/Liquidity ratio	156.174	12.051
		Net profit	210,462	520,710
		Equity	2,706,177	3,342,738
		Return on Equity (ROE)	0.078	0.156
		Total assets	2,706,539	3,362,711
		Return on Assets (ROA)	0.078	0.155
		Sales	174,796	555,207
		Profit margin ratio	1.204	0.938
		Operating profit	172,892	552,917
		Return on capital employed (ROCE)	0.064	0.165
		Return on sales (ROS)	0.989	0.996
		Asset turn over (ATO)	0.065	0.165
15	**Vesuvius PLC**	**(£m)**	**31-Dec-21**	**31-Dec-22**
		Current assets	921.4	992.5
		Current liabilities	523	530.2
		Current/Liquidity ratio	1.762	1.872
		Net profit	107.9	188.5
		Equity	1,098.20	1,319.60
		Return on Equity (ROE)	0.098	0.143
		Total assets	2,129.50	2,334.30
		Return on Assets (ROA)	0.051	0.081
		Sales	1,642.90	2,047.40
		Profit margin ratio	0.066	0.092
		Operating profit	132.7	216.8
		Return on capital employed (ROCE)	0.083	0.120
		Return on sales (ROS)	0.081	0.106
		Asset turn over (ATO)	1.023	1.135

(Source: London Stock Exchange, 2023).

Table 1 shows that except for the liquidity and the ATO, which decreased by 21% and 16% respectively, all the other financial ratios increased for UK Commercial Property REIT. For Finsbury Growth & Income Trust PLC, the ROCE and the ATO both decreased by 15%, and the ROS remained the same. All the other financial ratios increased. For Fidelity Emerging Markets Ltd, the liquidity and the ATO increased by 17% and 82% respectively, all the other financial ratios decreased. For Impax Environmental Markets PLC, only the liquidity ratio reduced (by 95%). Except for the liquidity and the ATO, which increased by 12% and 5% respectively, all the other financial ratios decreased for JD Sports Fashion PLC. For RHI Magnesita, all the financial ratios improved. There were reductions in the liquidity, the ROE, the ROA, and the ATO for Vietnam Enterprise Investments Ltd. However, there were increases in the profit margin, the ROCE, and the ROS. For Foresight Solar Fund Ltd, except for the liquidity and the ROS, which decreased by 35% and 3% respectively, and the

profit margin, which remained the same, all the other financial ratios increased. Only the profit margin reduced (by 9%) for Witan Investment Trust PLC. For Prudential PLC, except for the profit margin and the ROS, which increased by 15% and 47% respectively, all the other financial ratios decreased. Except for the ATO, which increased by 35%, all the other financial ratios decreased for SSE PLC. For Sthree PLC, only the ATO decreased (by 1%). All the other financial ratios increased. For Renewables Infrastructure Group Ltd, except for the liquidity and the profit margin, which decreased by 92% and 22% respectively, all the other financial ratios increased. And, for Vesuvius PLC, all the financial ratios improved.

Thus, from Table 1, there is an observed heterogeneity of the effects the Russia-Ukraine war had on the financial performance of FTSE 350 service firms based on their specific service areas. First, the service firms into energy services, real estate, financial services, materials procurement, and staffing/recruitment (such as UK Commercial Property REIT, Finsbury Growth & Income Trust PLC, RHI Magnesita, Foresight Solar Fund Ltd, Witan Investment Trust PLC, Sthree PLC, Renewables Infrastructure Group Ltd, and Vesuvius PLC) were revealed to be less sensitive to the effect of the war on their financial performance indicators as their financial performance improved in the 2nd financial year that coincided with the Russia-Ukraine war whereas the service firms into asset management, investment management, retails, and insurance (such as SEGRO PLC, Fidelity Emerging Markets Ltd, JD Sports Fashion PLC, Vietnam Enterprise Investments Ltd, Prudential PLC, and SSE PLC) were more sensitive to the effect of the war as their financial performance worsened. This agrees with the findings of Choi (2021), who adopted the efficient market hypothesis (EMH) in exploring the performance of 11 US stock market sectors during COVID-19. The author concluded that COVID-19 was received differently by each industry and the level of efficiency varied. However, in Choi (2021) study, the consumer discretionary industry firms were more efficient while the utilities sector firms were less efficient, which the author contributed to the effect of the regulatory framework of the utilities industry and the associated high dividend payments. In this study, the revealed improved financial performance of the energy services firms can be attributed to the gas shortages caused by Russia to weaken Europe's resolve to maintain sanctions against it, which resulted in high energy bills.

Table 2 shows the average financial performance of the sampled FTSE 350 service firms. The average performance is presented to show and compare how the firms performed as a population in the two periods (COVID-19 recovery and Russia-Ukraine crisis periods) and benchmark these performances against the industry standard for the financial performance indicators used.

Table 2: The averaged financial performance of the sampled FTSE 350 service firms

Financial ratios	COVID-19 recovery period	Russia-Ukraine war period	Percentage change
Liquidity	26.39	45.16	71%
ROE	0.17	0.22	29%
ROA	0.11	0.13	18%
Profit margin	1.96	2.24	14%
ROCE	0.08	0.13	63%
ROS	0.49	2.8	471%
ATO	0.85	0.82	-4%

Table 2 shows that except for the ATO, which decreased by 4%, all the other financial ratios increased for the sampled FTSE 350 service firms. The increased liquidity (by 71%) suggests an increased capacity of the firms to meet short-term financial obligations (Investopedia, 2023). Also, the very high liquidity ratios (26.39 and 45.16 respectively), shows a healthy liquidity in both periods (Investopedia, 2023). The decreased ATO suggests that the ability of the firms to deploy assets to generate sales decreased (Hayes, 2022a). The increased ROE (by 29%) implies more efficiency of the firms in utilizing the shareholders' equities to generate profits. Also, the ROE in both periods was great since they are above 14% (17% and 22% respectively) (Lewis, 2022). The increased ROA (by 18%) shows improved efficiency of the firms in managing balance sheets to generate profits. And the ROA for both periods are good, since they are above 5% (15% and 16% respectively), though not great as they are below 20% (Birken and Curry, 2021; Hargrave, 2022). The increased profit margin (by 14%) shows that the financial management improved, as per the maximization of sales and the minimization of expenses. And for both periods, the profit margins are great as they are above 20% (196% and 224% respectively) (CFI, 2022). The increased ROCE (by 63%) shows more effectiveness of the firms in using capitals and turning them into profits (Hayes, 2022b). The increased ROS (by 471%) demonstrates a significantly successful conversion of sales to profits by the firms (Hayes, 2022c). The overall performance of the firms over the two periods (judging by the number of the financial ratios which increased compared to the ones that decreased) imply that the Russia-Ukraine war had little or no negative effect on the financial performance of FTSE 350 service firms. This finding agrees with that of Okorie and Lin (2021), who investigated the stock market efficiencies of four countries impacted tremendously by COVID-19. The authors concluded that the market efficiency of the Brazilian and North American stock markets did not change significantly. However, the

current findings did not agree with that of Ahmed *et al*. (2022), who explored how the conflict between Russia and Ukraine affected European equity markets. Their study revealed that European stock returns were abnormally negative following the incident. With small and mid-sized businesses as the most heavily impacted businesses by the conflict. The difference in the findings can be attributed to the timing of the studies. While Ahmed *et al*. (2022) study was conducted in 2022, this study was conducted in August of 2023.

Furthermore, the analyses also revealed that despite the average increase in the financial performance of the firms between the two periods, some of the firms' financial performance indicators were below the industry standard for either or both of the financial years. For instance, Finsbury Growth & Income Trust PLC and Impax Environmental Markets PLC recorded liquidity ratios below the industry standard of 1. SEGRO PLC, JD Sports Fashion PLC, and Prudential PLC had both ROE and ROA that are below the industry standard of 10% and 5% respectively. RHI Magnesita recorded ROA below the industry standard of 5%. SSE PLC and Sthree PLC recorded profit margin ratios below the industry standard of 5%. These findings agree with what is reported in the literature, that in the time of crisis, stock markets are inefficient (Ludvigson *et al*., 2020; Devi *et al*., 2020; Adenomon *et al*., 2020; Shen *et al*., 2020). Also, Alijani *et al*. (2021) in his exploration of the efficiency of the Iranian stock market during COVID-19 concluded that there was stock market inefficiency during COVID-19 outbreak.

Based on the decision criteria of the t-tests (i.e., if the t Stat > t Critical two-tail, the null hypothesis is rejected, suggesting that a statistically significant difference exists between the two data sets), it was determined that there was no statistically significant difference in the financial performance of all the sampled firms between the COVID-19 recovery and the Russia-Ukraine war periods. To further validate this, t-test was also conducted using the average financial performance data for the sampled FTSE 350 service firms. The t Stat was less than the t Critical two-tail for the specific firms and for all the firms as a population, hence the null hypothesis was accepted. This implies that there is no significant impact of the short timeframe between the onset of the Russia-Ukraine conflict and the recovery from the COVID-19 pandemic on the financial performance of FTSE-350 service firms. This further suggests that despite the improved average financial performance of the firms, the differences in the financial performance of the firms between the two financial periods are not statistically significant enough to suggest that the difference is because of the short timeframe between COVID-19 recovery and the onset of Russia-Ukraine.

5. Conclusion

Conflicts have negative effects on not only the nations directly involved but also on other nations who are affected indirectly. A few publications have examined how the conflict between Russia and Ukraine affects both countries, with a particular focus on Russia given the severe international financial sanctions that are now affecting its economy. To break from this research trend, this study examined the financial performance of UK-listed (FTSE 350) service companies. From the findings, the overall performance of the firms suggests that the war had little or no negative effect on the financial performance of FTSE 350 service firms. The result of the study also showed that there is heterogeneity of effects the Russia-Ukraine war had on the financial performance of FTSE 350 service firms as regards their different areas of services.

First, the service firms into energy services, real estate, financial services, materials procurement, and staffing/recruitment were revealed to be less sensitive to the effect of the war on their financial performance indicators whereas the firms into asset management, investment management, retails, and insurance were more sensitive to the effect of the war. That is, they were more negatively impacted on by the war. The revealed improved financial performance of the energy services firms can be attributed to the gas shortages caused by Russia to weaken Europe's resolve to maintain sanctions against it, which resulted in high energy bills. While the underperformance of firms into asset management could be attributed to investors' fears occasioned by the unpredictability/uncertainty of the stock market in the time of crisis. Investors often act in a risk-averse manner in times of crisis. This study has shown that the war's energy shock has had an impact on firms' financial performances, with firms that provide energy services showing positive performances. This may also mean that a company's financial performance would be worse if the energy it consumes is higher. It was further revealed that even for the specific firms that performed better, one or more of their financial performance indicators were below the industry standard.

However, despite the firms having an improved performance during the war, the differences in their performance compared to the period of COVID-19 recovery are not statistically significant. Hence, the null hypothesis formulated in the study was accepted, implying that there is no significant effect of the short timeframe between the recovery from COVID-19 and the onset of Russia-Ukraine war on the financial performance of FTSE 350 service firms. The results of this study imply that generally investors should exercise caution during periods of significant uncertainty. Thus, investment choices and policy changes should be based on how the conflict is developing and changing.

Appendices

Appendix 1: F-tests and t-tests Analyses Outputs

Table A1: F-Test Two-Sample for Variances of UK Commercial Property Reit data.

	Variable 1	Variable 2
Mean	0.829	0.802
Variance	1.360	0.866
Observations	7	7
df	6	6
F	1.571	
P(F<=f) one-tail	0.298	
F Critical one-tail	4.284	

Table A2: F-Test Two-Sample for Variances of Finsbury Growth & Income Trust PLC data.

	Variable 1	Variable 2
Mean	2.579	0.595
Variance	25.047	1.000
Observations	7	7
df	6	6
F	25.043	
P(F<=f) one-tail	0.0005	
F Critical one-tail	4.284	

Table A3: F-Test Two-Sample for Variances of SEGRO PLC data.

	Variable 1	Variable 2
Mean	2.635	1.139
Variance	12.705	1.500
Observations	7	7
df	6	6
F	8.472	
P(F<=f) one-tail	0.01	
F Critical one-tail	4.284	

Table A4: F-Test Two-Sample for Variances of Fidelity Emerging Markets Ltd data.

	Variable 1	Variable 2
Mean	6.232	0.646
Variance	121.301	1.089
Observations	7	7
df	6	6
F	111.434	
P(F<=f) one-tail	6.942E-06	
F Critical one-tail	4.284	

Table A5: F-Test Two-Sample for Variances of Impax Environmental Markets PLC data.

	Variable 1	Variable 2
Mean	1.444	0.187
Variance	12.393	0.028
Observations	7	7
df	6	6
F	441.195	
P(F<=f) one-tail	1.153E-07	
F Critical one-tail	4.284	

Table A6: F-Test Two-Sample for Variances of JD Sports Fashion PLC data.

	Variable 1	Variable 2
Mean	0.513	0.516
Variance	0.614	0.492
Observations	7	7
df	6	6
F	1.247	
P(F<=f) one-tail	0.398	
F Critical one-tail	4.284	

Table A7: F-Test Two-Sample for Variances of RHI Magnesita data.

	Variable 1	Variable 2
Mean	0.525	0.438
Variance	0.550	0.463
Observations	7	7
df	6	6
F	1.188	
P(F<=f) one-tail	0.420	
F Critical one-tail	4.284	

Table A8: F-Test Two-Sample for Variances of Vietnam Enterprise Investments Ltd data.

	Variable 1	Variable 2
Mean	45.573	35.429
Variance	14338.916	8632.361
Observations	7	7
df	6	6
F	1.661	
P(F<=f) one-tail	0.276	
F Critical one-tail	4.284	

Table A9: F-Test Two-Sample for Variances of Foresight Solar Fund Ltd data.

	Variable 1	Variable 2
Mean	23.214	15.183
Variance	3674.512	1547.762
Observations	7	7
df	6	6
F	2.374	
P(F<=f) one-tail	0.158	
F Critical one-tail	4.284	

Table A10: F-Test Two-Sample for Variances of Witan Investment Trust PLC data.

	Variable 1	Variable 2
Mean	1.163	1.113
Variance	6.643	5.378
Observations	7	7
df	6	6
F	1.235	
P(F<=f) one-tail	0.402	
F Critical one-tail	4.284	

Table A11: F-Test Two-Sample for Variances of Prudential PLC data.

	Variable 1	Variable 2
Mean	2.748	2.035
Variance	49.577	27.253
Observations	7	7
df	6	6
F	1.819	
P(F<=f) one-tail	0.243	
F Critical one-tail	4.284	

Table A12: F-Test Two-Sample for Variances for SSE PLC data.

	Variable 1	Variable 2
Mean	0.472	0.269
Variance	0.215	0.213
Observations	7	7
df	6	6
F	1.008	
P(F<=f) one-tail	0.496	
F Critical one-tail	4.284	

Table A13: F-Test Two-Sample for Variances for Sthree PLC data.

	Variable 1	Variable 2
Mean	1.388	1.400
Variance	7.123	6.976
Observations	7	7
df	6	6
F	1.021	
P(F<=f) one-tail	0.490	
F Critical one-tail	4.284	

Table A14: F-Test Two-Sample for Variances of Renewables Infrastructure Group Ltd data.

	Variable 1	Variable 2
Mean	22.664	2.089
Variance	3466.172	19.440
Observations	7	7
df	6	6
F	178.303	
P(F<=f) one-tail	1.720E-06	
F Critical one-tail	4.284	

Table A15: F-Test Two-Sample for Variances of Vesuvius PLC data.

	Variable 1	Variable 2
Mean	0.507	0.452
Variance	0.509	0.458
Observations	7	7
df	6	6
F	1.110	
P(F<=f) one-tail	0.451	
F Critical one-tail	4.284	

Table A16: t-Test - Two-Sample Assuming Equal Variances for UK Commercial Property Reit data.

	Variable 1	Variable 2
Mean	0.829	0.802
Variance	1.360	0.866
Observations	7	7
Pooled Variance	1.113	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.048	
P(T<=t) one-tail	0.481	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.963	
t Critical two-tail	2.179	

Table A17: t-Test - Two-Sample Assuming Unequal Variances for Finsbury Growth & Income Trust PLC data.

	Variable 1	Variable 2
Mean	2.579	0.595
Variance	25.047	1.000
Observations	7	7
Hypothesized Mean Difference	0	
df	6	
t Stat	1.028	
P(T<=t) one-tail	0.172	
t Critical one-tail	1.943	
P(T<=t) two-tail	0.344	
t Critical two-tail	2.447	

Table A18: t-Test - Two-Sample Assuming Unequal Variances for SEGRO PLC data.

	Variable 1	Variable 2
Mean	2.635	1.318
Variance	12.705	1.529
Observations	7	6
Hypothesized Mean Difference	0	
df	8	
t Stat	0.915	
P(T<=t) one-tail	0.193	
t Critical one-tail	1.860	
P(T<=t) two-tail	0.387	
t Critical two-tail	2.306	

Table A19: t-Test - Two-Sample Assuming Unequal Variances for Fidelity Emerging Markets Ltd data.

	Variable 1	Variable 2
Mean	6.232	0.646
Variance	121.301	1.089
Observations	7	7
Hypothesized Mean Difference	0	
df	6	
t Stat	1.336	
P(T<=t) one-tail	0.115	
t Critical one-tail	1.943	
P(T<=t) two-tail	0.230	
t Critical two-tail	2.447	

Table A20: t-Test - Two-Sample Assuming Unequal Variances for Impax Environmental Markets PLC data.

	Variable 1	Variable 2
Mean	1.444	0.187
Variance	12.393	0.028
Observations	7	7
Hypothesized Mean Difference	0	
df	6	
t Stat	0.944	
P(T<=t) one-tail	0.191	
t Critical one-tail	1.943	
P(T<=t) two-tail	0.382	
t Critical two-tail	2.447	

Table A21: t-Test - Two-Sample Assuming Equal Variances for JD Sports Fashion PLC data.

	Variable 1	Variable 2
Mean	0.513	0.516
Variance	0.614	0.492
Observations	7	7
Pooled Variance	0.553	
Hypothesized Mean Difference	0	
df	12	
t Stat	-0.007	
P(T<=t) one-tail	0.497	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.9944	
t Critical two-tail	2.179	

Table A22: t-Test - Two-Sample Assuming Equal Variances for RHI Magnesita data.

	Variable 1	Variable 2
Mean	0.525	0.438
Variance	0.550	0.463
Observations	7	7
Pooled Variance	0.507	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.227	
P(T<=t) one-tail	0.412	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.824	
t Critical two-tail	2.179	

Table A23: t-Test - Two-Sample Assuming Equal Variances for Vietnam Enterprise Investments Ltd data.

	Variable 1	Variable 2
Mean	45.573	35.429
Variance	14338.916	8632.361
Observations	7	7
Pooled Variance	11485.639	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.177	
P(T<=t) one-tail	0.431	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.862	
t Critical two-tail	2.179	

Table A24: t-Test - Two-Sample Assuming Equal Variances for Foresight Solar Fund Ltd data.

	Variable 1	Variable 2
Mean	23.214	15.183
Variance	3674.512	1547.762
Observations	7	7
Pooled Variance	2611.137	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.294	
P(T<=t) one-tail	0.387	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.774	
t Critical two-tail	2.179	

Table A25: t-Test - Two-Sample Assuming Equal Variances for Witan Investment Trust PLC data.

	Variable 1	Variable 2
Mean	1.163	1.113
Variance	6.643	5.378
Observations	7	7
Pooled Variance	6.010	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.038	
P(T<=t) one-tail	0.485	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.970	
t Critical two-tail	2.179	

Table A26: t-Test - Two-Sample Assuming Equal Variances for Prudential PLC data.

	Variable 1	Variable 2
Mean	2.748	2.035
Variance	49.577	27.253
Observations	7	7
Pooled Variance	38.415	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.215	
P(T<=t) one-tail	0.417	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.833	
t Critical two-tail	2.179	

Table A27: t-Test - Two-Sample Assuming Equal Variances for SSE PLC data.

	Variable 1	Variable 2
Mean	0.472	0.269
Variance	0.215	0.213
Observations	7	7
Pooled Variance	0.214	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.820	
P(T<=t) one-tail	0.214	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.428	
t Critical two-tail	2.179	

Table A28: t-Test - Two-Sample Assuming Equal Variances for Sthree PLC data.

	Variable 1	Variable 2
Mean	1.388	1.400
Variance	7.123	6.976
Observations	7	7
Pooled Variance	7.050	
Hypothesized Mean Difference	0	
df	12	
t Stat	-0.009	
P(T<=t) one-tail	0.497	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.993	
t Critical two-tail	2.179	

Table A29: t-Test - Two-Sample Assuming Unequal Variances for Renewables Infrastructure Group Ltd data.

	Variable 1	Variable 2
Mean	22.664	2.089
Variance	3466.172	19.440
Observations	7	7
Hypothesized Mean Difference	0	
df	6	
t Stat	0.922	
P(T<=t) one-tail	0.196	
t Critical one-tail	1.943	
P(T<=t) two-tail	0.392	
t Critical two-tail	2.447	

Table A30: t-Test - Two-Sample Assuming Equal Variances for Vesuvius PLC data.

	Variable 1	Variable 2
Mean	0.507	0.452
Variance	0.509	0.458
Observations	7	7
Pooled Variance	0.484	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.148	
P(T<=t) one-tail	0.442	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.884	
t Critical two-tail	2.179	

Table A31: F-Test Two-Sample for Variances for the sampled firms averaged data.

	Variable 1	Variable 2
Mean	7.357	4.293
Variance	279.024	95.381
Observations	7	7
df	6	6
F	2.925	
P(F<=f) one-tail	0.109	
F Critical one-tail	4.284	

Table A32: t-Test - Two-Sample Assuming Equal Variances for the sampled firms averaged data.

	Variable 1	Variable 2
Mean	7.357	4.293
Variance	279.024	95.381
Observations	7	7
Pooled Variance	187.202	
Hypothesized Mean Difference	0	
df	12	
t Stat	0.419	
P(T<=t) one-tail	0.341	
t Critical one-tail	1.782	
P(T<=t) two-tail	0.683	
t Critical two-tail	2.1789	

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