**Table 3**

A comparative CAR analysis of developed, emerging, and frontier markets: A direct examination

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Direct impact analysis | | | | | | | | | | | | | |
|  | Panel A: Developed markets | | | | | |  | Panel B: Emerging and frontier markets | | | | | |
|  |  | Parametric tests | |  | Nonparametric tests | |  |  | Parametric tests | |  | Nonparametric tests | |
| Daily time | CAR(%) | ORDIN | BMP |  | G-SIGN | WSRT |  | CAR(%) | ORDIN | BMP |  | G-SIGN | WSRT |
| Time-limited event window | | | | | | | | | | | | | |
| CAR[−6,−2] | −0.025 | −0.383 | −0.471 |  | −1.232 | −0.900 |  | −0.332 | −2.111\*\* | −2.078\*\* |  | −0.534 | −0.715 |
| CAR[−5,−2] | −0.003 | −0.049 | 0.576 |  | −1.117 | −0.507 |  | −0.299 | −2.122\*\* | −2.373\*\* |  | −1.376 | −1.462 |
| CAR[−1,+1] | −0.009 | −0.178 | −0.764 |  | −1.347 | −0.426 |  | 0.442 | 3.624\*\*\* | 3.369\*\*\* |  | 3.172\*\*\* | 3.187\*\*\* |
| CAR[−1,+3] | −0.016 | −0.252 | −0.944 |  | −0.078 | −0.781 |  | 0.539 | 3.421\*\*\* | 2.860\*\*\* |  | 2.667\*\*\* | 3.142\*\*\* |
| Extended event window | |  |  |  |  |  |  |  |  |  |  |  |  |
| CAR[−19,−2] | 0.024 | 0.195 | −0.933 |  | −2.155\*\* | −0.975 |  | −0.442 | −1.480 | −2.025\*\* |  | −0.871 | −0.645 |
| CAR[−17,−2] | 0.004 | 0.036 | −0.922 |  | −1.578 | −0.722 |  | −0.512 | −1.817\* | −2.205\*\* |  | −1.545 | −0.855 |
| CAR[0,+15] | −0.004 | −0.037 | −0.544 |  | −3.079\*\*\* | −2.103\*\* |  | 0.690 | 2.448\*\* | 1.529 |  | 2.162\*\* | 2.213\*\* |
| CAR[0,+20] | −0.067 | −0.503 | −1.305 |  | −1.924\* | −1.541 |  | 0.666 | 2.065\*\* | 0.952 |  | 1.488 | 1.413 |
| CAR[+3,+20] | −0.080 | −0.645 | −1.372 |  | −2.848\*\*\* | −1.923\* |  | 0.267 | 0.894 | 0.131 |  | −0.366 | 0.131 |

Note: This table presents a detailed examination of the cumulative abnormal returns (CAR) across nine distinct test windows. Panel A showcases the CAR results for developed markets, while Panel B focuses on the CAR results for emerging and frontier markets. The table provides the outcomes of two parametric tests, t-statistics (labeled as ORDIN) and standardized cross-sectional approach results (BMP), in columns 3 and 4. Additionally, the results of two non-parametric tests, the generalized sign test (G-SIGN) and the Wilcoxon signed-rank test (WSRT), are reported in columns 5 and 6. Statistical significance is denoted by p-values, with asterisks \*\*\*, \*\*, and \* representing significance at the 1%, 5%, and 10% levels, respectively.

**Table 4**

A comparative CAR analysis of developed, emerging, and frontier markets: A comparative cross-examination

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cross-effect analysis | | | | | | | | | | | | | |
|  | Panel A: Cross-effect analysis on developed markets | | | | | |  | Panel B: Cross-effect analysis on emerging and frontier markets | | | | | |
|  |  | Parametric tests | |  | Nonparametric tests | |  |  | Parametric tests | |  | Nonparametric tests | |
| Daily time | CAR(%) | ORDIN | BMP |  | G-SIGN | WSRT |  | CAR(%) | ORDIN | BMP |  | G-SIGN | WSRT |
| Time-limited event window | | | | | | | | | | | | | |
| CAR[−6,−2] | −0.048 | −0.857 | −1.051 |  | −1.002 | −0.635 |  | −0.237 | −2.142\*\* | −2.453\*\* |  | −1.769\* | −1.409 |
| CAR[−5,−2] | −0.036 | −0.726 | −0.725 |  | −0.833 | −1.040 |  | −0.148 | −1.490 | −1.752\* |  | −0.616 | −1.101 |
| CAR[−1,+1] | −0.003 | −0.073 | 0.167 |  | −0.496 | −0.643 |  | 0.081 | 0.946 | 0.691 |  | 0.999 | 0.550 |
| CAR[−1,+3] | −0.001 | −0.021 | 0.179 |  | −2.182\* | −1.481 |  | −0.020 | −0.184 | −0.964 |  | −0.385 | −0.370 |
| Extended event window | |  |  |  |  |  |  |  |  |  |  |  |  |
| CAR[−19,−2] | −0.074 | −0.703 | −1.612 |  | 0.346 | −0.573 |  | −0.458 | −2.180\*\* | −3.148\*\*\* |  | −0.846 | −1.690\* |
| CAR[−17,−2] | −0.054 | −0.540 | −1.594 |  | −1.339 | −0.686 |  | −0.421 | −2.124\*\* | −2.946\*\*\* |  | −1.884\* | −1.588 |
| CAR[0,+15] | −0.187 | −1.882\* | −1.306 |  | −3.193\*\*\* | −2.481\*\* |  | −0.033 | −0.167 | −1.360 |  | −1.423 | −0.315 |
| CAR[0,+20] | −0.311 | −2.732\*\*\* | −1.546 |  | −2.856\*\*\* | −3.020\*\*\* |  | 0.145 | 0.639 | −0.693 |  | −0.962 | 0.298 |
| CAR[+3,+20] | −0.297 | −2.823\*\*\* | −1.520 |  | −2.350\*\* | −2.683\*\*\* |  | 0.196 | 0.935 | −0.222 |  | −0.616 | 0.400 |

Note: This table presents a detailed examination of the cumulative abnormal returns (CAR) across nine distinct test windows. Panels A and Bfocus on CAR results for cross-effect analysis on developed and on emerging and frontier markets, respectively. The table provides the outcomes of two parametric tests: t-statistics (labeled as ORDIN) and standardized cross-sectional approach results (labeled as BMP) in columns 3 and 4. Additionally, the results of two nonparametric tests, the generalized sign test (labeled as G-SIGN) and the Wilcoxon signed-rank test (labeled as WSRT), are reported in columns 5 and 6. Statistical significance is denoted by p-values, with asterisks \*\*\*, \*\*, and \* representing significance at the 1%, 5%, and 10% levels, respectively, thereby underscoring the comparative cross-examination methodology.

**Table 5**

Evaluating the robustness of the cumulative abnormal returns (CAR) in developed, emerging, and frontier markets: A comprehensive investigation and comparative analysis

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Panel A: Index model (IM) | | | | | | | | | | | |
|  | Direct impact analysis | | | | |  | Cross-effect analysis | | | | |
|  | Developed markets | |  | Emerging and frontier markets | |  | Cross-effect analysis on developed markets | |  | Cross-effect analysis on emerging and frontier markets | |
| Daily time | CAR(%) | ORDIN |  | CAR(%) | ORDIN |  | CAR(%) | ORDIN |  | CAR(%) | ORDIN |
| Time-limited event window | | | | | | | | | | | |
| CAR[−6,−2] | −0.020 | −0.308 |  | −0.520 | −3.175\*\*\* |  | −0.050 | −0.874 |  | −0.328 | −2.602\*\*\* |
| CAR[−5,−2] | 0.006 | 0.095 |  | −0.393 | −2.687\*\*\* |  | −0.029 | −0.564 |  | −0.163 | −1.445 |
| CAR[−1,+1] | −0.022 | −0.426 |  | 0.362 | 2.854\*\*\* |  | −0.007 | −0.156 |  | 0.016 | 0.167 |
| CAR[−1,+3] | −0.039 | −0.588 |  | 0.411 | 2.510\*\* |  | 0.001 | 0.012 |  | −0.168 | −1.335 |
| Extended event window | | | | | | | | | | | |
| CAR[−19,−2] | −0.038 | −0.304 |  | −0.725 | −2.336\*\* |  | −0.082 | −0.763 |  | −0.646 | −2.696\*\*\* |
| CAR[−17,−2] | −0.050 | −0.417 |  | −0.803 | −2.743\*\*\* |  | −0.061 | −0.601 |  | −0.573 | −2.541\*\* |
| CAR[0,+15] | −0.087 | −0.729 |  | 0.415 | 1.419 |  | −0.194 | −1.912\* |  | −0.360 | −1.595 |
| CAR[0,+20] | −0.168 | −1.236 |  | 0.106 | 0.317 |  | −0.327 | −2.808\*\*\* |  | −0.302 | −1.168 |
| CAR[+3,+20] | −0.164 | −1.300 |  | −0.187 | −0.601 |  | −0.310 | −2.874\*\*\* |  | −0.122 | −0.509 |
| Panel B: Mean adjusted returns (MAR) model | | | | | | | | | | | |
|  | Direct impact analysis | | | | |  |  | | | | |
|  | Developed markets | |  | Emerging and frontier markets | |  | Cross-effect analysis on developed markets | |  | Cross-effect analysis on emerging and frontier markets | |
| Daily time | CAR(%) | ORDIN |  | CAR(%) | ORDIN |  | CAR(%) | ORDIN |  | CAR(%) | ORDIN |
| Time-limited event window | | | | | | | | | | | |
| CAR[−6,−2] | 0.065 | 0.491 |  | −0.460 | −2.294\*\* |  | −0.067 | −0.362 |  | −0.214 | −1.690\* |
| CAR[−5,−2] | −0.069 | −0.579 |  | −0.487 | −2.717\*\*\* |  | −0.184 | −1.113 |  | −0.215 | −1.901\* |
| CAR[−1,+1] | 0.065 | 0.630 |  | 0.481 | 3.095\*\*\* |  | 0.066 | 0.459 |  | 0.121 | 1.231 |
| CAR[−1,+3] | 0.144 | 1.080 |  | 0.512 | 2.556\*\* |  | 0.025 | 0.137 |  | 0.043 | 0.343 |
| Extended event window | | | | | | | | | | | |
| CAR[−19,−2] | −0.190 | −0.751 |  | −0.727 | −1.912\* |  | −0.361 | −1.029 |  | −0.694 | −2.894\*\*\* |
| CAR[−17,−2] | −0.153 | −0.642 |  | −0.798 | −2.225\*\* |  | −0.303 | −0.915 |  | −0.585 | −2.588\*\* |
| CAR[0,+15] | 0.120 | 0.502 |  | 0.488 | 1.360 |  | −0.369 | −1.114 |  | −0.062 | −0.273 |
| CAR[0,+20] | 0.162 | 0.594 |  | 0.539 | 1.312 |  | −0.218 | −0.574 |  | 0.149 | 0.575 |
| CAR[+3,+20] | −0.061 | −0.243 |  | 0.024 | 0.064 |  | −0.376 | −1.072 |  | 0.084 | 0.350 |

Note: The table provides a comprehensive analysis of the robustness of the cumulative abnormal returns (CAR) obtained from two distinct robustness tests conducted across nine testing periods centered around the event day. Panels A and B present the cumulative abnormal returns derived from the index (IM) and mean adjusted returns (MAR) models, respectively. These models are utilized to assess the CAR in developed, emerging, and frontier markets. Furthermore, separate cross-effect analyses are performed for developed markets and emerging/frontier markets, enabling a comparative evaluation. The statistical significance of the results is indicated by p-values, with asterisks \*\*\*, \*\*, and \* denoting significance levels of 1%, 5%, and 10%, respectively.

**Table 6**

Regression analysis of trend and financial indicators: Estimation results

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Panel A: Developed markets | | | | | | | | | | | |
|  | Event window | | | | | | | | | | |
|  | CAR[−17,−2] | |  | CAR[−6,−2] | |  | CAR[−1,+3] | |  | CAR[0,+15] | |
|  | R Square = 0.053 | F = 1.786 |  | R Square = 0.024 | F = 0.657 |  | R Square = 0.045 | F = 1.709 |  | R Square = 0.056 | F = 1.699 |
| Variables | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |
| Constant | 0.530 | 0.917 |  | 0.072 | 0.139 |  | 0.311 | 0.779 |  | 1.452 | 1.093 |
| GTAB-C | 0.285 | 1.294 |  | 0.336 | 1.772\* |  | −0.389 | −2.608\*\*\* |  |  |  |
| GTAB-Y | −0.669 | −1.376 |  | 0.350 | 0.823 |  | −0.525 | −1.944\* |  | −2.970 | −2.671\*\*\* |
| GTH-C | −0.511 | −1.995\*\* |  | −0.246 | −1.030 |  | 0.155 | 0.810 |  | −0.198 | −0.337 |
| SPGEI | 0.172 | 0.732 |  | 0.020 | 0.097 |  |  |  |  | 0.330 | 0.623 |
| DCPS | −0.074 | −1.699\* |  | −0.033 | −0.672 |  | 0.016 | 0.406 |  | 0.006 | 0.046 |
| Inflation | 0.010 | 0.442 |  | 0.000 | −0.002 |  |  |  |  | −0.020 | −0.384 |
| ASavings |  |  |  | −0.010 | −1.005 |  | 0.002 | 0.330 |  | 0.024 | 0.902 |
| FDInvest | 0.027 | 0.989 |  | 0.002 | 0.092 |  | −0.010 | −0.534 |  | 0.010 | 0.136 |
| COL-AI | −0.07 | −0.198 |  | −0.386 | −0.975 |  | 0.118 | 0.438 |  | 0.786 | 0.760 |
| PPI-AI | 0.441 | 1.522 |  | 0.286 | 0.900 |  |  |  |  | −0.325 | −0.403 |
| PopDensity |  |  |  | 0.010 | 0.237 |  | −0.019 | −0.604 |  | −0.023 | −0.216 |
| Panel B: Emerging and frontier markets | | | | | | | | | | | |
|  | Event window | | | | | | | | | | |
|  | CAR[-17,-2] | |  | CAR[-6,-2] | |  | CAR[-1,+3] | |  | CAR[0,+15] | |
|  | R Square = 0.151 | F = 1.992 |  | R Square = 0.131 | F = 1.692 |  | R Square = 0.072 | F = 2.052 |  | R Square = 0.178 | F = 2.417 |
| Variables | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |
| Constant | −12.229 | −2.392\*\* |  | −3.659 | −1.198 |  | 0.099 | 0.104 |  | −9.729 | −2.036\*\* |
| GTAB-C | −6.500 | −1.348 |  | −2.628 | −0.912 |  | −1.856 | −1.271 |  | −3.353 | −0.744 |
| GTAB-Y | 8.048 | 1.740\* |  | 6.240 | 2.258\*\* |  |  |  |  | 14.447 | 3.343\*\*\* |
| GTH-C | 13.768 | 3.134\*\*\* |  | 0.364 | 0.138 |  |  |  |  | 2.231 | 0.543 |
| SPGEI | −1.045 | −0.563 |  | 1.157 | 1.043 |  |  |  |  | 4.648 | 2.682\*\*\* |
| DCPS | 0.871 | 1.206 |  | −0.057 | −0.132 |  | 0.16 | 1.145 |  | −0.204 | −0.302 |
| Inflation | 0.080 | 0.326 |  | −0.171 | −1.171 |  | 0.211 | 2.210\*\* |  | 0.168 | 0.733 |
| ASavings | 0.018 | 0.201 |  | −0.004 | −0.066 |  |  |  |  | −0.017 | −0.209 |
| FDInvest | −0.659 | −1.342 |  | −0.362 | −1.234 |  |  |  |  | 0.576 | 1.257 |
| COL-AI | 14.1 | 2.369\*\* |  | 9.673 | 2.719\*\*\* |  | −2.983 | −2.022\*\* |  | 2.126 | 0.382 |
| PPI-AI | −4.097 | −0.926 |  | −7.582 | −2.868\*\*\* |  | 2.194 | 1.565 |  | −1.893 | −0.458 |
| PopDensity | −1.063 | −1.549 |  | −0.272 | −0.662 |  |  |  |  | −0.272 | −0.424 |
| Panel C: Cross-effect analysis on developed markets | | | | | | | | | | | |
|  | Event window | | | | | | | | | | |
|  | CAR[−17,−2] | |  | CAR[−6,−2] | |  | CAR[−1,+3] | |  | CAR[0,+15] | |
|  | R Square = 0.195 | F = 2.701 |  | R Square = 0.054 | F = 0.644 |  | R Square = 0.285 | F = 4.462 |  | R Square = 0.092 | F = 1.847 |
| Variables | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |
| Constant | −1.929 | −3.774\*\*\* |  | −0.317 | −0.459 |  | 0.145 | 0.393 |  | 0.851 | 0.580 |
| GTAB-C | 0.411 | 0.853 |  | 0.224 | 0.345 |  | 1.722 | 4.939\*\*\* |  | 3.184 | 1.913\* |
| GTAB-Y | 1.043 | 2.256\*\* |  | 0.058 | 0.093 |  | −0.548 | −1.639 |  | −3.594 | −2.300\*\* |
| GTH-C | 0.796 | 1.812\* |  | 0.239 | 0.404 |  | −0.635 | −1.999\*\* |  |  |  |
| SPGEI | 0.356 | 1.921\* |  | −0.213 | −0.852 |  | 0.116 | 0.862 |  |  |  |
| DCPS | 0.188 | 2.599\*\*\* |  | 0.011 | 0.118 |  | 0.006 | 0.116 |  | 0.482 | 2.084\*\* |
| Inflation | 0.009 | 0.383 |  | 0.019 | 0.567 |  | −0.011 | −0.645 |  | 0.101 | 1.215 |
| ASavings | −0.005 | −0.606 |  | −0.002 | −0.166 |  | −0.013 | −1.963\*\* |  | 0.042 | 1.646\* |
| FDInvest | −0.123 | −2.503\*\* |  | −0.057 | −0.859 |  | 0.072 | 2.032\*\* |  | −0.324 | −1.887\* |
| COL-AI | 0.59 | 0.992 |  | 0.167 | 0.208 |  | −1.599 | −3.715\*\*\* |  | −2.607 | −1.807\* |
| PPI-AI | −0.765 | −1.729\* |  | −0.276 | −0.462 |  | 0.911 | 2.848\*\*\* |  |  |  |
| PopDensity | 0.047 | 0.679 |  | 0.040 | 0.427 |  | 0.114 | 2.289\*\* |  |  |  |
| Panel D: Cross-effect analysis on emerging and frontier markets | | | | | | | | | | | |
|  | Event window | | | | | | | | | | |
|  | CAR[−17,−2] | |  | CAR[−6,−2] | |  | CAR[−1,+3] | |  | CAR[0,+15] | |
|  | R Square = 0.053 | F = 1.455 |  | R Square = 0.033 | F = 0.881 |  | R Square = 0.062 | F = 1.735 |  | R Square = 0.087 | F = 2.510 |
| Variables | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |  | Coefficient | t-statistic |
| Constant | −2.618 | −1.202 |  | 1.814 | 0.937 |  | 0.141 | 0.077 |  | −6.638 | −2.029\* |
| GTAB-C | −1.510 | −1.361 |  | −1.233 | −1.741\* |  | −1.418 | −2.126\*\* |  | −0.972 | −0.812 |
| GTAB-Y | 4.284 | 2.117\*\* |  | 0.140 | 0.088 |  | 1.589 | 1.060 |  | 9.513 | 3.541\*\*\* |
| GTH-C | 0.412 | 0.413 |  | −0.774 | −0.865 |  | 1.966 | 2.333\*\* |  | 2.750 | 1.819\* |
| SPGEI | 1.899 | 1.637 |  | 0.888 | 1.172 |  | 0.403 | 0.565 |  | 1.665 | 1.301 |
| DCPS |  |  |  | −0.328 | −1.761\* |  | 0.445 | 2.539\*\* |  | 0.408 | 1.298 |
| Inflation |  |  |  | 0.061 | 0.828 |  | −0.012 | −0.179 |  | −0.076 | −0.605 |
| ASavings |  |  |  | −0.035 | −0.927 |  | 0.056 | 1.560 |  | 0.038 | 0.599 |
| FDInvest |  |  |  | 0.046 | 0.458 |  | −0.157 | −1.647\* |  | 0.082 | 0.478 |
| COL-AI | −0.621 | −0.369 |  | −0.103 | −0.070 |  | −2.784 | −1.997\*\* |  | −3.619 | −1.447 |
| PPI-AI |  |  |  | −0.485 | −0.409 |  | 0.14 | 0.125 |  | 1.558 | 0.776 |
| PopDensity |  |  |  | 0.172 | 1.116 |  | −0.313 | −2.154\*\* |  | −0.320 | −1.228 |

Note: This research investigation employed regression analysis to examine the relationship between cumulative abnormal returns (CAR) and a set of trend and financial independent variables across four consecutive windows. The results obtained from the analysis are presented in four separate panels. Panels A and B display the regression analysis results for a direct examination of developed and emerging/frontier markets, respectively. Panels C and D present the regression analysis results for a comparative cross-examination, specifically the cross-effect analyses for developed and emerging/frontier markets, respectively. The regression models utilized in this study incorporated a diverse set of independent variables. The trend variables, namely GTAB-C, GTAB-Y, and GTH-C, were measured on a scale ranging from 0 to 100, capturing the magnitude of their respective trends. The financial variables included the SPGEI variable, expressed as a percentage, and DCPS, which was measured in USD billions. Additionally, the inflation variable was calculated as a percentage, ASavings as a percentage, and FDInvest in USD billions. COL-AI and PPI-AI were scored on a scale ranging from 0 to 100, while PopDensity was measured as the number of people per square kilometer of land area. The vacant cells denote the extracted variables aimed at enhancing the statistical significance of the regression analysis. The statistical significance of the regression analysis results is indicated by p-values, with asterisks \*\*\*, \*\*, and \* denoting significance levels of 1%, 5%, and 10%, respectively.