

Appendix 3: Parameter estimates and standard errors

Appendix 3-1. Parameter estimates from the OLS model specification

| | DM | £ | ¥ | FF | BF | IL |
|---|------------------|------------------|------------------|------------------|-------------------|------------------|
| <i>Conditional mean equation parameters</i> | | | | | | |
| C | 0.024 (0.013) | 0.012 (0.013) | 0.027 (0.013) | 0.021 (0.013) | 0.026 (0.014) | 0.009 (0.013) |
| AR(1) | 0.493 (0.182) | 0.740 (0.182) | 0.439 (0.182) | 0.557 (0.182) | | |
| AR(3) | | | | | | 0.413 (0.182) |
| AR(6) | | | | | -0.380 (0.182) | -0.382 (0.18) |
| AR(8) | | | | | -0.034 (0.18) | |
| MA(1) | | | | | 0.044 (0.018) | 0.039 (0.019) |
| <i>Log Likelihood Values</i> | | | | | | |
| Ln(L) | -3342.2 | -3200.6 | -3236.5 | -3197.9 | -3309.6 | -3251.4 |

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Appendix 3-2 Parameter estimates from the Gaussian-GARCH model specification

| | DM | £ | ¥ | FF | BF | IL |
|---|------------------|------------------|------------------|------------------|-------------------|-------------------|
| <i>Conditional mean equation parameters</i> | | | | | | |
| C | 0.019 (0.012) | 0.017 (0.011) | 0.022 (0.012) | 0.018 (0.012) | 0.022 (0.013) | 0.015 (0.012) |
| AR(1) | 0.576 (0.193) | 0.647 (0.191) | 0.445 (0.196) | 0.598 (0.194) | | |
| AR(3) | | | | | | 0.230 (0.195) |
| AR(6) | | | | | -0.285 (0.189) | -0.217 (0.190) |
| AR(8) | | | | | -0.353 (0.187) | |
| MA(1) | | | | | 0.052 (0.019) | 0.035 (0.020) |
| <i>Conditional variance equation parameters</i> | | | | | | |
| w | 0.019 (0.005) | 0.010 (.) | 0.016 (0.004) | 0.021 (0.005) | 0.021 (0.006) | 0.031 (0.006) |
| á | 0.069 (0.011) | 0.056 (0.007) | 0.060 (0.009) | 0.076 (0.012) | 0.071 (0.011) | 0.106 (0.014) |
| â | 0.897 (0.017) | 0.924 (0.006) | 0.909 (0.015) | 0.881 (0.019) | 0.890 (0.019) | 0.835 (0.021) |
| <i>Log Likelihood Value</i> | | | | | | |
| Ln(L) | -3228.5 | -3122.0 | -3059.3 | -3085.9 | -3201.0 | -3078.2 |

Appendix 3-3. Parameter estimates from the GARCH-t model specification

| | DM | £ | ¥ | FF | BF | IL |
|---|------------------|------------------|------------------|------------------|-------------------|-------------------|
| <i>Conditional mean equation parameters</i> | | | | | | |
| C | 0.017 (0.012) | 0.024 (0.011) | 0.002 (0.010) | 0.016 (0.011) | 0.020 (0.012) | 0.016 (0.011) |
| AR(1) | 0.394 (0.183) | 0.400 (0.181) | 0.068 (0.177) | 0.407 (0.184) | | |
| AR(3) | | | | | | 0.222 (0.181) |
| AR(6) | | | | | -0.224 (0.180) | -0.174 (0.178) |
| AR(8) | | | | | -0.321 (0.178) | |
| MA(1) | | | | | 0.035 (0.019) | 0.006 (0.019) |
| <i>Conditional variance equation parameters</i> | | | | | | |
| w | 0.015 (0.005) | 0.005 (0.002) | 0.011 (0.004) | 0.015 (0.006) | 0.014 (0.005) | 0.022 (0.007) |
| á | 0.065 (0.012) | 0.049 (0.011) | 0.064 (0.014) | 0.071 (0.013) | 0.066 (0.013) | 0.074 (0.014) |
| â | 0.910 (0.018) | 0.943 (0.014) | 0.922 (0.019) | 0.901 (0.021) | 0.911 (0.019) | 0.885 (0.024) |
| <i>Distribution parameters</i> | | | | | | |
| ð | 6.093 (0.673) | 5.816 (0.635) | 4.240 (0.351) | 6.210 (0.698) | 6.075 (0.680) | 5.785 (0.643) |
| <i>Log-Likelihood Values</i> | | | | | | |
| Ln(L) | -3163.5 | -2991.0 | -2970.2 | -3024.2 | -3137.1 | -3005.8 |

Appendix 3-4. Parameter estimates from the EGARCH-t model specification

| | DM | £ | ¥ | FF | BF | IL |
|---|------------------|------------------|------------------|-------------------|-------------------|-------------------|
| <i>Conditional mean equation parameters</i> | | | | | | |
| C | 0.018 (0.012) | 0.026 (0.011) | 0.002 (0.010) | 0.018 (0.011) | 0.020 (0.012) | 0.019 (0.011) |
| AR(1) | 0.398 (0.182) | 0.406 (0.180) | 0.088 (0.177) | 0.393 (0.182) | | |
| AR(3) | | | | | | 0.234 (0.179) |
| AR(6) | | | | | -0.190 (0.178) | -0.176 (0.174) |
| AR(8) | | | | | -0.333 (0.177) | |
| MA(1) | | | | | 0.031 (0.019) | 0.002 (0.019) |
| <i>Conditional variance equation parameters</i> | | | | | | |
| w | 0.004 (0.007) | 0.010 (0.006) | 0.022 (0.010) | -0.001 (0.009) | 0.004 (0.008) | -0.003 (0.012) |
| $\hat{\alpha}$ | 0.973 (0.009) | 0.984 (0.006) | 0.974 (0.010) | 0.967 (0.010) | 0.973 (0.009) | 0.953 (0.013) |
| $\hat{\epsilon}$ | 0.026 (0.011) | 0.003 (0.011) | 0.013 (0.011) | 0.018 (0.012) | 0.019 (0.011) | 0.001 (0.014) |
| $\hat{\alpha}$ | 0.138 (0.022) | 0.126 (0.022) | 0.154 (0.029) | 0.155 (0.024) | 0.142 (0.023) | 0.166 (0.026) |
| <i>Distribution parameters</i> | | | | | | |
| $\hat{\sigma}$ | 6.164 (0.689) | 5.723 (0.618) | 4.254 (0.352) | 6.275 (0.712) | 6.170 (0.697) | 5.535 (0.603) |
| <i>Log Likelihood Value</i> | | | | | | |
| Ln(L) | -3158.2 | -2989.0 | -2969.5 | -3018.8 | -3132.0 | -3006.7 |

Appendix 3-5. Parameter estimates from the GARCH-EGB2 model specification

| | DM | £ | ¥ | FF | BF | IL |
|---|------------------|------------------|------------------|------------------|-------------------|-------------------|
| <i>Conditional mean equation parameters</i> | | | | | | |
| C | 0.021 (0.012) | 0.020 (0.012) | 0.023 (0.012) | 0.020 (0.012) | 0.024 (0.013) | 0.014 (0.012) |
| AR(1) | 0.378 (0.183) | 0.345 (0.183) | 0.040 (0.178) | 0.392 (0.184) | | |
| AR(3) | | | | | | 0.218 (0.179) |
| AR(6) | | | | | -0.248 (0.179) | -0.189 (0.174) |
| AR(8) | | | | | -0.319 (0.177) | |
| MA(1) | | | | | 0.033 (0.019) | 0.006 (0.019) |
| <i>Conditional variance equation parameters</i> | | | | | | |
| w | 0.015 (0.005) | 0.010 (. .) | 0.011 (0.004) | 0.016 (0.006) | 0.015 (0.006) | 0.022 (0.007) |
| á | 0.065 (0.012) | 0.061 (0.010) | 0.058 (0.013) | 0.071 (0.014) | 0.065 (0.013) | 0.081 (0.016) |
| â | 0.908 (0.018) | 0.920 (0.008) | 0.922 (0.018) | 0.897 (0.021) | 0.908 (0.020) | 0.876 (0.025) |
| <i>Distribution parameters</i> | | | | | | |
| p | 0.746 (0.122) | 0.596 (0.099) | 0.425 (0.077) | 0.775 (0.128) | 0.730 (0.122) | 0.538 (0.108) |
| q | 0.698 (0.112) | 0.625 (0.106) | 0.351 (0.061) | 0.724 (0.117) | 0.690 (0.113) | 0.548 (0.112) |
| <i>Log Likelihood Value</i> | | | | | | |
| Ln(L) | -3161.3 | -2987.8 | -2963.7 | -3022.1 | -3134.8 | -3002 |

Standard errors reported in parentheses. (.) indicate the conventional standard error.

(.) indicates the standard error cannot be estimated because the parameter estimate lies on the boundary of the feasible parameter space.