

Introduction

The latest routine international evaluation for **conformation traits** took place as scheduled at the Interbull Centre. Data from twenty four (24) countries were included in this evaluation.

International genetic evaluations for calving traits of bulls from Australia, Belgium, Canada, Switzerland, Czech Republic, Germany, Denmark-Finland-Sweden, Spain, France, United Kingdom, Hungary, Ireland, Italy, Japan, Korea, The Netherlands, Norway, New Zealand, Poland, South Africa, Estonia, Slovenia, Portugal and the United States of America were computed.

Brown Swiss, Guernsey, Holstein, Jersey and Red Dairy Cattle breed data were included in this evaluation.

Changes in national procedures

Changes in the national genetic evaluation of conformation traits are as follows:

DFS HOL HOL and RED HOL (RED) have merged. Cows with min 87 % HOL genes and and bulls with min 93 % HOL genes have been converted to HOL.

Animals with less % HOL genes will no longer be a part of the evaluation, and it is the reason, number of bulls and daughters drop more for HOL. But for most of the bulls the drop is less than 1%.

SVN BSW/HOL Changes in the data base related to the pedigree completeness and phenotypic data improvement.

PRT HOL Implemented new changes to evaluation model: random contemporary groups, genetic groups and new variance components.

NOR RDC The scaling is according to a rolling base that changes somewhat at each evaluation. Therefore percentage changes in sire standard deviations between evaluations may solely be due to changes in the standard deviation in the rolling base.

DEU RDC Few bulls whose ownership has been corrected, they are now foreign AI bulls, therefore their Type of Proof changed and some of these are not publishable anymore.

CHE BSW/HOL Continuous improvement of data by herd-book organizations, thus possible decrease in herds/daughters/EDC.

USA HOL 9 bulls missing from the current evaluation due to a change in Type of Proof, as determined in conjunction with CDCB.

JPN HOL There are some small changes in proofs caused by additional records and in EDCs caused by modification of pedigree.

ITA BSW Participating for the first time with RWI

DEA BSW Base change.

HUN HOL Introduced new HOL conformation traits (bcs, loc, rtp)

EST HOL/RDC There are new estimated genetic parameters for all traits being used.

EST HOL Participating for the first time with BCS and LOC.

NZL HOL/JER The udder overall trait is now evaluated with the other udder traits instead of in a single trait model by itself. This has also had an affect on overall conformation because of the weighting on udder overall.

NZL BSW/GUE/ Continuous DNA parentage testing affecting daughters, herds, EDCs and reliabilities.
HOL/JER/
RDC

CAM RDC Participating for the first time with MSH in RDC population, with population code CAM

INTERBULL CHANGES COMPARED TO THE DECEMBER ROUTINE RUN

Subsetting:

As decided by the ITC in Orlando, new subsetting was introduced in the september test run. Sub-setting is necessary for operational purposes and restrictions of time scales. To minimize the effect of subsetting, larger subsets with 10-12 countries and with 4 link providing countries have been applied.

Window:

According to the decision taken by ITC in Orlando, the following changes have been introduced in regards to the windows used for post processing:

The upper bounds have been set to 0.99 as these were judged to have very little effect on evaluations. The lower values have been set to about the 25% percentile value. The largest changes are for the lower values for conformation traits, with the lowest window being 40% for OFL otherwise it is about 50% for all other confirmation traits. It is anticipated that these low values may not have large impact on evaluations since there were very few countries combinations whose estimated correlations fell between the old limit of 0.30 and these new limits. DATA AND METHOD OF ANALYSIS

Data were national genetic evaluations of AI sampled bulls with at least 10 daughters or 10 EDC (for clinical mastitis and maternal calving traits at least 50 daughters or 50 EDC, and for direct calving traits at least 50 calvings or 50 EDC) in at least 10 herds. Table 1 presents the amount of data included in this Interbull evaluation for all breeds.

National proofs were first de-regressed within country and then analysed jointly with a linear model including the effects of evaluation country, genetic group of bull and bull merit. Heritability estimates used in both the de-regression and international evaluation were as in each country's national evaluation.

Table 2 presents the date of evaluation as supplied by each country

Estimated genetic parameters and sire standard deviations are shown in APPENDIX I and the corresponding number of common bulls are listed in APPENDIX II.

SCIENTIFIC LITERATURE

The international genetic evaluation procedure is based on international work described in the following scientific publications:

International genetic evaluation computation:

Schaeffer. 1994. J. Dairy Sci. 77:2671-2678
Klei, 1998. Interbull Bulletin 17:3-7

Verification and Genetic trend validation:

Klei et al., 2002. Interbull Bulletin 29:178-182.
Boichard et al., 1995. J. Dairy Sci. 78:431-437

Weighting factors:

Fikse and Banos, 2001. J. Dairy Sci. 84:1759-1767

De-regression:

Sigurdsson and G. Banos. 1995. Acta Agric. Scand. 45:207-219
Jairath et al. 1998. J. Dairy Sci. Vol. 81:550-562

Genetic parameter estimation:

Klei and Weigel, 1998, Interbull Bulletin 17:8-14
Sullivan, 1999. Interbull Bulletin 22:146-148

Post-processing of estimated genetic correlations:

Mark et al., 2003, Interbull Bulletin 30:126-135
 Jorjani et al., 2003. J. Dairy Sci. 86:677-679
<https://wiki.interbull.org/public/rG%20procedure?action=print>

Time edits

Weigel and Banos. 1997. J. Dairy Sci. 80:3425-3430

International reliability estimation

Harris and Johnson. 1998. Interbull Bulletin 17:31-36

NEXT ROUTINE INTERNATIONAL EVALUATION

 Dates for the next routine evaluation can be found on
<http://www.interbull.org/ib/servicecalendar>.

NEXT TEST INTERNATIONAL EVALUATION

 Dates for the next test run can be found on
<http://www.interbull.org/ib/servicecalendar>.

PUBLICATION OF INTERBULL TEST RUN

 Test evaluation results are meant for review purposes only and should not be published.

^LTable 1. National evaluation data considered in the Interbull evaluation for conformation traits (December Routine Evaluation 2017).
 Number of records for stature by breed

| Country | BSW | GUE | HOL | JER | RDC | SIM |
|-------------|------|------|--------|-------|-------|-----|
| AUS | | 62 | 3631 | 694 | 261 | |
| BEL | | | 1117 | | | |
| CAN | 185 | 95 | 10815 | 643 | 799 | |
| CHE | 2536 | | 2970 | | | |
| CZE | | | 3759 | | | |
| DEA | 3237 | | | | | |
| DEU | | | 20430 | | 251 | |
| DFS | | | 11354 | 1858 | 5924 | |
| ESP | | | 3415 | | | |
| EST | | | 636 | | | |
| FRA | 322 | | 16188 | | | |
| FRM | | | | | | |
| GBR | 19 | 198 | 5372 | 401 | 288 | |
| HUN | | | 2399 | | | |
| IRL | | | 1477 | | | |
| ISR | | | | | | |
| ITA | 1949 | | 8769 | 97 | | |
| JPN | | | 5194 | | | |
| KOR | | | 1080 | | | |
| LTU | | | | | | |
| LVA | | | | | | |
| NLD | 109 | | 13966 | 36 | 42 | |
| NOR | | | | | 2206 | |
| NZL | | | 5622 | 3620 | 549 | |
| POL | | | 7941 | | | |
| PRT | | | 1925 | | | |
| SVK | | | | | | |
| SVN | 279 | | 428 | | | |
| URY | | | | | | |
| USA | 796 | 669 | 30880 | 3749 | 234 | |
| ZAF | | | 810 | 506 | | |
| HRV | | | | | | |
| MEX | | | | | | |
| CAM | | | | | 31 | |
| No. Records | 9432 | 1024 | 160178 | 11604 | 10585 | |
| Pub. Proofs | 7644 | 867 | 131808 | 10180 | 11477 | 0 |

 ^LAPPENDIX I. Sire standard deviations in diagonal and genetic correlations below diagonal

BSW sta

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| CAN | 6.92 | | | | | | | | |
| CHE | 0.95 | 12.41 | | | | | | | |
| FRA | 0.98 | 0.97 | 0.90 | | | | | | |
| ITA | 0.96 | 0.95 | 0.95 | 14.82 | | | | | |
| NLD | 0.95 | 0.94 | 0.96 | 0.92 | 4.71 | | | | |
| USA | 0.98 | 0.95 | 0.96 | 0.95 | 0.94 | 1.61 | | | |
| DEA | 0.96 | 0.98 | 0.97 | 0.96 | 0.95 | 0.96 | 11.35 | | |
| SVN | 0.91 | 0.90 | 0.90 | 0.93 | 0.91 | 0.90 | 0.92 | 16.63 | |
| GBR | 0.96 | 0.93 | 0.95 | 0.94 | 0.93 | 0.95 | 0.90 | 0.90 | 0.81 |

BSW cwi

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| CAN | 8.80 | | | | | | | | |
| CHE | 0.88 | 10.15 | | | | | | | |
| FRA | 0.84 | 0.82 | 0.91 | | | | | | |
| ITA | 0.81 | 0.84 | 0.86 | 22.08 | | | | | |
| NLD | 0.89 | 0.78 | 0.79 | 0.71 | 4.42 | | | | |
| USA | 0.91 | 0.90 | 0.87 | 0.85 | 0.81 | 0.86 | | | |
| DEA | 0.87 | 0.82 | 0.67 | 0.74 | 0.76 | 0.81 | 12.04 | | |
| SVN | 0.84 | 0.81 | 0.79 | 0.85 | 0.73 | 0.83 | 0.88 | 22.92 | |
| GBR | 0.91 | 0.85 | 0.83 | 0.73 | 0.89 | 0.82 | 0.83 | 0.81 | 1.39 |

BSW bde

| | CAN | CHE | FRA | ITA | NLD | DEA | SVN | GBR | USA |
|-----|------|-------|------|-------|------|-------|-------|------|------|
| CAN | 6.44 | | | | | | | | |
| CHE | 0.86 | 10.25 | | | | | | | |
| FRA | 0.75 | 0.87 | 0.90 | | | | | | |
| ITA | 0.80 | 0.90 | 0.90 | 18.07 | | | | | |
| NLD | 0.83 | 0.83 | 0.85 | 0.84 | 4.15 | | | | |
| DEA | 0.88 | 0.90 | 0.92 | 0.90 | 0.83 | 11.58 | | | |
| SVN | 0.80 | 0.82 | 0.79 | 0.89 | 0.79 | 0.81 | 26.01 | | |
| GBR | 0.86 | 0.88 | 0.83 | 0.85 | 0.90 | 0.85 | 0.85 | 1.31 | |
| USA | 0.74 | 0.77 | 0.86 | 0.78 | 0.86 | 0.80 | 0.79 | 0.88 | 0.80 |

BSW ang

| | CAN | CHE | FRA | NLD | USA | GBR |
|-----|------|-------|------|------|------|------|
| CAN | 8.22 | | | | | |
| CHE | 0.70 | 10.90 | | | | |
| FRA | 0.89 | 0.67 | 0.88 | | | |
| NLD | 0.74 | 0.65 | 0.65 | 3.81 | | |
| USA | 0.87 | 0.70 | 0.76 | 0.68 | 1.21 | |
| GBR | 0.88 | 0.76 | 0.79 | 0.78 | 0.89 | 0.75 |

BSW ran

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| CAN | 6.30 | | | | | | | | |
| CHE | 0.93 | 10.64 | | | | | | | |
| FRA | 0.97 | 0.96 | 0.93 | | | | | | |
| ITA | 0.95 | 0.93 | 0.94 | 23.03 | | | | | |
| NLD | 0.95 | 0.92 | 0.95 | 0.93 | 4.40 | | | | |
| USA | 0.97 | 0.94 | 0.97 | 0.92 | 0.95 | 1.13 | | | |
| DEA | 0.96 | 0.95 | 0.95 | 0.95 | 0.91 | 0.97 | 11.93 | | |
| SVN | 0.92 | 0.91 | 0.91 | 0.91 | 0.91 | 0.92 | 0.91 | 21.04 | |
| GBR | 0.96 | 0.94 | 0.97 | 0.94 | 0.97 | 0.96 | 0.91 | 0.91 | 1.83 |

| BSW | rwi | | | | | | | | |
|-----|------|------|------|------|------|-------|------|-------|-------|
| | CAN | CHE | FRA | NLD | USA | DEA | GBR | SVN | ITA |
| CAN | 7.07 | | | | | | | | |
| CHE | 0.90 | 9.94 | | | | | | | |
| FRA | 0.89 | 0.83 | 0.94 | | | | | | |
| NLD | 0.92 | 0.86 | 0.88 | 3.81 | | | | | |
| USA | 0.90 | 0.82 | 0.87 | 0.81 | 0.73 | | | | |
| DEA | 0.93 | 0.89 | 0.80 | 0.81 | 0.86 | 12.55 | | | |
| GBR | 0.93 | 0.86 | 0.92 | 0.88 | 0.93 | 0.82 | 1.15 | | |
| SVN | 0.91 | 0.83 | 0.83 | 0.88 | 0.84 | 0.87 | 0.89 | 27.26 | |
| ITA | 0.88 | 0.80 | 0.83 | 0.82 | 0.85 | 0.86 | 0.90 | 0.81 | 20.79 |

| BSW | rls | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
| CAN | 6.97 | | | | | | | | |
| CHE | 0.91 | 12.95 | | | | | | | |
| FRA | 0.91 | 0.90 | 1.00 | | | | | | |
| ITA | 0.91 | 0.85 | 0.92 | 23.87 | | | | | |
| NLD | 0.88 | 0.82 | 0.89 | 0.86 | 5.25 | | | | |
| USA | 0.94 | 0.92 | 0.90 | 0.86 | 0.86 | 0.75 | | | |
| DEA | 0.92 | 0.91 | 0.93 | 0.89 | 0.82 | 0.93 | 12.11 | | |
| SVN | 0.86 | 0.82 | 0.86 | 0.87 | 0.82 | 0.88 | 0.87 | 21.86 | |
| GBR | 0.85 | 0.89 | 0.91 | 0.84 | 0.88 | 0.84 | 0.88 | 0.82 | 1.09 |

| BSW | fan | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
| CAN | 8.48 | | | | | | | | |
| CHE | 0.69 | 13.79 | | | | | | | |
| FRA | 0.73 | 0.73 | 1.07 | | | | | | |
| ITA | 0.71 | 0.86 | 0.79 | 22.88 | | | | | |
| NLD | 0.73 | 0.66 | 0.81 | 0.69 | 5.67 | | | | |
| USA | 0.79 | 0.69 | 0.84 | 0.85 | 0.81 | 0.71 | | | |
| DEA | 0.66 | 0.90 | 0.68 | 0.89 | 0.65 | 0.64 | 11.40 | | |
| SVN | 0.71 | 0.83 | 0.70 | 0.85 | 0.67 | 0.69 | 0.94 | 25.05 | |
| GBR | 0.81 | 0.70 | 0.90 | 0.72 | 0.88 | 0.83 | 0.68 | 0.69 | 0.96 |

| BSW | hde | | | | | | | | |
|-----|------|-------|------|-------|------|-------|-------|------|--|
| | CAN | CHE | FRA | ITA | NLD | DEA | SVN | USA | |
| CAN | 8.44 | | | | | | | | |
| CHE | 0.87 | 12.70 | | | | | | | |
| FRA | 0.81 | 0.80 | 1.13 | | | | | | |
| ITA | 0.79 | 0.83 | 0.84 | 23.09 | | | | | |
| NLD | 0.77 | 0.72 | 0.84 | 0.73 | 5.67 | | | | |
| DEA | 0.78 | 0.86 | 0.83 | 0.90 | 0.77 | 12.24 | | | |
| SVN | 0.77 | 0.76 | 0.82 | 0.89 | 0.75 | 0.89 | 30.71 | | |
| USA | 0.84 | 0.74 | 0.86 | 0.89 | 0.82 | 0.76 | 0.82 | 0.71 | |

| BSW | fua | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
| CAN | 6.98 | | | | | | | | |
| CHE | 0.85 | 11.56 | | | | | | | |
| FRA | 0.87 | 0.83 | 0.93 | | | | | | |
| ITA | 0.89 | 0.84 | 0.81 | 21.27 | | | | | |
| NLD | 0.91 | 0.82 | 0.88 | 0.83 | 4.59 | | | | |
| USA | 0.93 | 0.82 | 0.82 | 0.88 | 0.86 | 1.30 | | | |
| DEA | 0.87 | 0.82 | 0.92 | 0.80 | 0.84 | 0.84 | 11.72 | | |
| SVN | 0.81 | 0.76 | 0.85 | 0.86 | 0.81 | 0.79 | 0.90 | 22.04 | |
| GBR | 0.93 | 0.85 | 0.87 | 0.89 | 0.90 | 0.91 | 0.79 | 0.72 | 1.24 |

| | | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| BSW | ruh | | | | | | | | |
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
| CAN | 7.08 | | | | | | | | |
| CHE | 0.91 | 11.48 | | | | | | | |
| FRA | 0.88 | 0.83 | 0.94 | | | | | | |
| ITA | 0.79 | 0.86 | 0.85 | 13.43 | | | | | |
| NLD | 0.80 | 0.84 | 0.87 | 0.87 | 4.46 | | | | |
| USA | 0.87 | 0.85 | 0.88 | 0.88 | 0.87 | 1.18 | | | |
| DEA | 0.82 | 0.85 | 0.88 | 0.92 | 0.92 | 0.88 | 12.55 | | |
| SVN | 0.80 | 0.79 | 0.78 | 0.85 | 0.88 | 0.82 | 0.90 | 19.76 | |
| GBR | 0.78 | 0.83 | 0.86 | 0.86 | 0.88 | 0.91 | 0.78 | 0.76 | 1.24 |

| | | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|--|
| BSW | ruw | | | | | | | | |
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | |
| CAN | 7.61 | | | | | | | | |
| CHE | 0.91 | 11.61 | | | | | | | |
| FRA | 0.88 | 0.88 | 0.87 | | | | | | |
| ITA | 0.81 | 0.88 | 0.80 | 13.68 | | | | | |
| NLD | 0.73 | 0.65 | 0.79 | 0.71 | 4.46 | | | | |
| USA | 0.87 | 0.88 | 0.85 | 0.90 | 0.79 | 1.04 | | | |
| DEA | 0.85 | 0.90 | 0.76 | 0.96 | 0.56 | 0.90 | 12.29 | | |
| SVN | 0.80 | 0.78 | 0.73 | 0.82 | 0.69 | 0.78 | 0.81 | 18.14 | |

| | | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| BSW | usu | | | | | | | | |
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
| CAN | 8.03 | | | | | | | | |
| CHE | 0.90 | 11.85 | | | | | | | |
| FRA | 0.84 | 0.91 | 0.92 | | | | | | |
| ITA | 0.91 | 0.87 | 0.88 | 18.62 | | | | | |
| NLD | 0.83 | 0.83 | 0.90 | 0.84 | 4.51 | | | | |
| USA | 0.85 | 0.89 | 0.86 | 0.85 | 0.89 | 1.08 | | | |
| DEA | 0.92 | 0.90 | 0.87 | 0.93 | 0.79 | 0.79 | 11.79 | | |
| SVN | 0.82 | 0.83 | 0.71 | 0.79 | 0.68 | 0.72 | 0.84 | 23.83 | |
| GBR | 0.84 | 0.80 | 0.87 | 0.88 | 0.91 | 0.93 | 0.76 | 0.68 | 2.49 |

| | | | | | | | | | |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| BSW | ude | | | | | | | | |
| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
| CAN | 6.64 | | | | | | | | |
| CHE | 0.96 | 11.94 | | | | | | | |
| FRA | 0.95 | 0.95 | 0.99 | | | | | | |
| ITA | 0.94 | 0.97 | 0.95 | 21.37 | | | | | |
| NLD | 0.97 | 0.96 | 0.95 | 0.95 | 4.20 | | | | |
| USA | 0.95 | 0.95 | 0.96 | 0.95 | 0.95 | 1.22 | | | |
| DEA | 0.93 | 0.98 | 0.92 | 0.97 | 0.95 | 0.92 | 12.06 | | |
| SVN | 0.93 | 0.95 | 0.91 | 0.96 | 0.94 | 0.92 | 0.94 | 21.47 | |
| GBR | 0.96 | 0.94 | 0.95 | 0.94 | 0.96 | 0.96 | 0.91 | 0.90 | 1.86 |

| | | | | | | | | | |
|-----|------|-------|------|------|------|-------|-------|------|-------|
| BSW | ftp | | | | | | | | |
| | CAN | CHE | FRA | NLD | USA | DEA | SVN | GBR | ITA |
| CAN | 7.05 | | | | | | | | |
| CHE | 0.97 | 14.13 | | | | | | | |
| FRA | 0.97 | 0.95 | 0.94 | | | | | | |
| NLD | 0.96 | 0.95 | 0.95 | 4.80 | | | | | |
| USA | 0.92 | 0.90 | 0.88 | 0.91 | 1.19 | | | | |
| DEA | 0.96 | 0.99 | 0.95 | 0.95 | 0.90 | 11.43 | | | |
| SVN | 0.94 | 0.93 | 0.93 | 0.91 | 0.89 | 0.92 | 17.92 | | |
| GBR | 0.95 | 0.92 | 0.90 | 0.94 | 0.94 | 0.89 | 0.91 | 1.28 | |
| ITA | 0.87 | 0.85 | 0.85 | 0.86 | 0.88 | 0.85 | 0.86 | 0.89 | 23.72 |

BSW ftl

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| CAN | 6.15 | | | | | | | | |
| CHE | 0.90 | 14.75 | | | | | | | |
| FRA | 0.92 | 0.95 | 0.96 | | | | | | |
| ITA | 0.91 | 0.94 | 0.95 | 19.07 | | | | | |
| NLD | 0.91 | 0.96 | 0.92 | 0.93 | 5.02 | | | | |
| USA | 0.91 | 0.96 | 0.95 | 0.94 | 0.96 | 1.37 | | | |
| DEA | 0.88 | 0.97 | 0.97 | 0.96 | 0.93 | 0.96 | 11.46 | | |
| SVN | 0.89 | 0.93 | 0.89 | 0.94 | 0.94 | 0.91 | 0.92 | 18.29 | |
| GBR | 0.94 | 0.93 | 0.92 | 0.95 | 0.96 | 0.96 | 0.91 | 0.91 | 1.37 |

BSW rtp

| | CAN | CHE | FRA | ITA | NLD | DEA | SVN | USA |
|-----|------|-------|------|-------|------|-------|-------|------|
| CAN | 6.95 | | | | | | | |
| CHE | 0.97 | 14.68 | | | | | | |
| FRA | 0.97 | 0.98 | 0.93 | | | | | |
| ITA | 0.92 | 0.93 | 0.94 | 21.71 | | | | |
| NLD | 0.97 | 0.97 | 0.97 | 0.93 | 4.59 | | | |
| DEA | 0.95 | 0.98 | 0.97 | 0.95 | 0.96 | 11.45 | | |
| SVN | 0.94 | 0.94 | 0.93 | 0.94 | 0.95 | 0.94 | 17.58 | |
| USA | 0.93 | 0.90 | 0.92 | 0.91 | 0.94 | 0.90 | 0.91 | 1.19 |

BSW ocs

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|------|------|------|------|------|-------|-------|------|
| CAN | 7.91 | | | | | | | | |
| CHE | 0.87 | 8.76 | | | | | | | |
| FRA | 0.82 | 0.89 | 0.99 | | | | | | |
| ITA | 0.83 | 0.84 | 0.89 | 9.66 | | | | | |
| NLD | 0.78 | 0.78 | 0.82 | 0.78 | 3.53 | | | | |
| USA | 0.87 | 0.77 | 0.85 | 0.84 | 0.83 | 0.62 | | | |
| DEA | 0.81 | 0.91 | 0.90 | 0.89 | 0.76 | 0.75 | 10.97 | | |
| SVN | 0.79 | 0.78 | 0.78 | 0.77 | 0.78 | 0.79 | 0.77 | 23.18 | |
| GBR | 0.84 | 0.88 | 0.89 | 0.84 | 0.89 | 0.89 | 0.81 | 0.79 | 1.55 |

BSW ous

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| CAN | 7.89 | | | | | | | | |
| CHE | 0.89 | 13.02 | | | | | | | |
| FRA | 0.89 | 0.94 | 1.01 | | | | | | |
| ITA | 0.84 | 0.92 | 0.88 | 13.64 | | | | | |
| NLD | 0.89 | 0.89 | 0.92 | 0.84 | 4.44 | | | | |
| USA | 0.87 | 0.90 | 0.89 | 0.92 | 0.87 | 0.94 | | | |
| DEA | 0.87 | 0.95 | 0.91 | 0.93 | 0.88 | 0.88 | 11.87 | | |
| SVN | 0.77 | 0.79 | 0.75 | 0.82 | 0.77 | 0.79 | 0.90 | 21.50 | |
| GBR | 0.83 | 0.85 | 0.76 | 0.84 | 0.80 | 0.88 | 0.77 | 0.76 | 1.35 |

BSW ofl

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|------|-------|------|-------|------|------|-------|-------|------|
| CAN | 7.75 | | | | | | | | |
| CHE | 0.86 | 11.19 | | | | | | | |
| FRA | 0.65 | 0.69 | 1.31 | | | | | | |
| ITA | 0.69 | 0.72 | 0.86 | 18.34 | | | | | |
| NLD | 0.67 | 0.67 | 0.75 | 0.67 | 4.53 | | | | |
| USA | 0.73 | 0.68 | 0.78 | 0.75 | 0.68 | 1.00 | | | |
| DEA | 0.67 | 0.82 | 0.71 | 0.81 | 0.65 | 0.63 | 11.68 | | |
| SVN | 0.76 | 0.86 | 0.68 | 0.76 | 0.69 | 0.75 | 0.87 | 28.94 | |
| GBR | 0.75 | 0.77 | 0.80 | 0.70 | 0.75 | 0.73 | 0.68 | 0.68 | 1.50 |

BSW ofr

| | CAN | CHE | DEA | ITA | SVN | USA | FRA |
|-----|------|-------|-------|-------|-------|------|------|
| CAN | 7.37 | | | | | | |
| CHE | 0.84 | 11.96 | | | | | |
| DEA | 0.86 | 0.90 | 11.21 | | | | |
| ITA | 0.84 | 0.91 | 0.94 | 19.01 | | | |
| SVN | 0.82 | 0.84 | 0.80 | 0.87 | 24.20 | | |
| USA | 0.85 | 0.83 | 0.91 | 0.86 | 0.80 | 1.61 | |
| FRA | 0.83 | 0.86 | 0.93 | 0.90 | 0.84 | 0.90 | 0.87 |

BSW tpl

| | CAN | CHE | DEA | ITA | SVN | FRA |
|-----|------|-------|-------|-------|-------|------|
| CAN | 7.32 | | | | | |
| CHE | 0.91 | 11.78 | | | | |
| DEA | 0.91 | 0.91 | 11.80 | | | |
| ITA | 0.93 | 0.92 | 0.93 | 24.41 | | |
| SVN | 0.91 | 0.89 | 0.90 | 0.89 | 23.98 | |
| FRA | 0.97 | 0.94 | 0.91 | 0.91 | 0.90 | 1.28 |

BSW oru

| | CAN | CHE | DEA | ITA | SVN | USA | FRA |
|-----|------|-------|-------|-------|-------|------|------|
| CAN | 7.69 | | | | | | |
| CHE | 0.78 | 15.46 | | | | | |
| DEA | 0.69 | 0.89 | 12.77 | | | | |
| ITA | 0.92 | 0.81 | 0.78 | 19.38 | | | |
| SVN | 0.82 | 0.67 | 0.64 | 0.71 | 28.60 | | |
| USA | 0.92 | 0.56 | 0.47 | 0.83 | 0.76 | 0.73 | |
| FRA | 0.91 | 0.90 | 0.83 | 0.90 | 0.77 | 0.84 | 1.04 |

BSW rle

| | CHE | DEA | ITA | SVN | USA | FRA |
|-----|-------|-------|-------|-------|------|------|
| CHE | 11.80 | | | | | |
| DEA | 0.96 | 12.12 | | | | |
| ITA | 0.83 | 0.88 | 22.09 | | | |
| SVN | 0.81 | 0.85 | 0.82 | 27.54 | | |
| USA | 0.53 | 0.51 | 0.77 | 0.71 | 0.73 | |
| FRA | 0.92 | 0.93 | 0.91 | 0.84 | 0.73 | 1.01 |

BSW thp

| | CAN | CHE | DEA | ITA | SVN | USA | FRA |
|-----|------|-------|-------|-------|-------|------|------|
| CAN | 7.81 | | | | | | |
| CHE | 0.86 | 11.16 | | | | | |
| DEA | 0.78 | 0.87 | 12.26 | | | | |
| ITA | 0.89 | 0.93 | 0.85 | 31.81 | | | |
| SVN | 0.80 | 0.87 | 0.89 | 0.86 | 37.90 | | |
| USA | 0.89 | 0.87 | 0.72 | 0.86 | 0.75 | 1.13 | |
| FRA | 0.89 | 0.87 | 0.87 | 0.85 | 0.86 | 0.81 | 1.01 |

BSW hoq

| | CAN | CHE | DEA | ITA | SVN | FRA |
|-----|------|-------|-------|-------|-------|------|
| CAN | 6.47 | | | | | |
| CHE | 0.93 | 11.73 | | | | |
| DEA | 0.91 | 0.89 | 11.67 | | | |
| ITA | 0.90 | 0.82 | 0.86 | 20.58 | | |
| SVN | 0.91 | 0.80 | 0.83 | 0.85 | 21.74 | |
| FRA | 0.89 | 0.83 | 0.90 | 0.88 | 0.88 | 0.99 |

BSW ful

| | CHE | DEA | ITA | SVN | FRA |
|-----|-------|-------|-------|-------|------|
| CHE | 11.62 | | | | |
| DEA | 0.91 | 12.27 | | | |
| ITA | 0.91 | 0.97 | 12.86 | | |
| SVN | 0.77 | 0.88 | 0.86 | 21.75 | |
| FRA | 0.67 | 0.81 | 0.74 | 0.74 | 0.97 |

BSW udb

| | CHE | DEA | ITA | SVN | FRA |
|-----|-------|-------|-------|-------|------|
| CHE | 11.09 | | | | |
| DEA | 0.97 | 13.07 | | | |
| ITA | 0.94 | 0.97 | 26.91 | | |
| SVN | 0.82 | 0.88 | 0.81 | 26.06 | |
| FRA | 0.90 | 0.89 | 0.85 | 0.79 | 0.96 |

BSW tdi

| | CHE | DEA | ITA | SVN | FRA |
|-----|-------|-------|-------|-------|------|
| CHE | 15.63 | | | | |
| DEA | 0.96 | 11.44 | | | |
| ITA | 0.94 | 0.95 | 21.34 | | |
| SVN | 0.91 | 0.92 | 0.94 | 18.10 | |
| FRA | 0.97 | 0.96 | 0.92 | 0.91 | 0.92 |

BSW tth

| | CHE | DEA | ITA | SVN | FRA |
|-----|-------|-------|-------|-------|------|
| CHE | 14.36 | | | | |
| DEA | 0.97 | 12.72 | | | |
| ITA | 0.92 | 0.94 | 22.86 | | |
| SVN | 0.90 | 0.92 | 0.88 | 20.21 | |
| FRA | 0.93 | 0.92 | 0.94 | 0.88 | 0.88 |

GUE sta

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 6.34 | | | |
| GBR | 0.97 | 1.09 | | |
| USA | 0.98 | 0.95 | 2.46 | |
| AUS | 0.88 | 0.91 | 0.89 | 4.60 |

GUE cwi

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 6.87 | | | |
| GBR | 0.92 | 1.62 | | |
| USA | 0.88 | 0.87 | 1.33 | |
| AUS | 0.75 | 0.80 | 0.65 | 7.68 |

GUE bde

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 6.05 | | | |
| GBR | 0.88 | 1.35 | | |
| USA | 0.78 | 0.90 | 1.49 | |
| AUS | 0.83 | 0.80 | 0.77 | 5.38 |

GUE ang

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 7.78 | | | |
| GBR | 0.85 | 1.42 | | |
| USA | 0.85 | 0.91 | 1.80 | |
| AUS | 0.61 | 0.79 | 0.72 | 6.63 |

GUE ran

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 6.43 | | | |
| GBR | 0.97 | 1.62 | | |
| USA | 0.97 | 0.97 | 1.60 | |
| AUS | 0.93 | 0.96 | 0.92 | 8.34 |

GUE rwi

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 6.92 | | | |
| GBR | 0.94 | 1.41 | | |
| USA | 0.92 | 0.91 | 1.38 | |
| AUS | 0.90 | 0.88 | 0.80 | 5.04 |

GUE rls

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 7.45 | | | |
| GBR | 0.80 | 1.75 | | |
| USA | 0.92 | 0.77 | 1.01 | |
| AUS | 0.76 | 0.84 | 0.73 | 6.20 |

GUE rlr

| | CAN | USA | AUS |
|-----|------|------|------|
| CAN | 7.22 | | |
| USA | 0.86 | 0.72 | |
| AUS | 0.63 | 0.62 | 6.90 |

GUE fan

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 8.00 | | | |
| GBR | 0.75 | 1.61 | | |
| USA | 0.83 | 0.74 | 0.82 | |
| AUS | 0.64 | 0.81 | 0.69 | 8.89 |

GUE fua

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 7.24 | | | |
| GBR | 0.94 | 1.51 | | |
| USA | 0.92 | 0.91 | 1.67 | |
| AUS | 0.82 | 0.82 | 0.74 | 8.91 |

GUE ruh

| | CAN | GBR | USA | AUS |
|-----|------|------|------|------|
| CAN | 6.78 | | | |
| GBR | 0.76 | 1.71 | | |
| USA | 0.82 | 0.90 | 1.54 | |
| AUS | 0.79 | 0.77 | 0.75 | 6.42 |

| | | | | |
|-----|------|------|------|------|
| GUE | usu | | | |
| | CAN | GBR | USA | AUS |
| CAN | 7.24 | | | |
| GBR | 0.79 | 1.51 | | |
| USA | 0.81 | 0.84 | 1.15 | |
| AUS | 0.79 | 0.79 | 0.79 | 7.43 |

| | | | | |
|-----|------|------|------|------|
| GUE | ude | | | |
| | CAN | GBR | USA | AUS |
| CAN | 6.20 | | | |
| GBR | 0.97 | 1.56 | | |
| USA | 0.95 | 0.93 | 1.63 | |
| AUS | 0.91 | 0.92 | 0.87 | 4.92 |

| | | | | |
|-----|------|------|------|------|
| GUE | ftp | | | |
| | CAN | GBR | USA | AUS |
| CAN | 5.74 | | | |
| GBR | 0.96 | 1.22 | | |
| USA | 0.92 | 0.91 | 1.37 | |
| AUS | 0.90 | 0.89 | 0.87 | 7.01 |

| | | | | |
|-----|------|------|------|------|
| GUE | ftl | | | |
| | CAN | GBR | USA | AUS |
| CAN | 4.87 | | | |
| GBR | 0.91 | 1.76 | | |
| USA | 0.93 | 0.97 | 1.48 | |
| AUS | 0.86 | 0.94 | 0.93 | 6.73 |

| | | | |
|-----|------|------|------|
| GUE | rtp | | |
| | CAN | AUS | USA |
| CAN | 5.43 | | |
| AUS | 0.88 | 8.26 | |
| USA | 0.93 | 0.92 | 1.37 |

| | | | | |
|-----|------|------|------|------|
| GUE | ocs | | | |
| | CAN | GBR | USA | AUS |
| CAN | 8.28 | | | |
| GBR | 0.86 | 1.53 | | |
| USA | 0.80 | 0.85 | 1.19 | |
| AUS | 0.55 | 0.61 | 0.61 | 9.04 |

| | | | | |
|-----|------|------|------|------|
| GUE | ous | | | |
| | CAN | GBR | USA | AUS |
| CAN | 8.10 | | | |
| GBR | 0.86 | 1.38 | | |
| USA | 0.90 | 0.83 | 0.75 | |
| AUS | 0.64 | 0.70 | 0.65 | 5.07 |

| | | | | |
|-----|------|------|------|------|
| GUE | ofl | | | |
| | CAN | GBR | USA | AUS |
| CAN | 7.63 | | | |
| GBR | 0.71 | 1.38 | | |
| USA | 0.81 | 0.67 | 1.25 | |
| AUS | 0.55 | 0.48 | 0.50 | 8.89 |

| HOL | sta | | | | | | | | | | |
|------|------|------|------|-------|-------|-------|-------|------|------|-------|------|
| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 4.55 | | | | | | | | | | |
| BEL | 0.87 | 1.09 | | | | | | | | | |
| CAN | 0.88 | 0.95 | 5.76 | | | | | | | | |
| CHE | 0.88 | 0.91 | 0.95 | 10.57 | | | | | | | |
| DEU | 0.88 | 0.93 | 0.98 | 0.96 | 12.77 | | | | | | |
| DFS | 0.86 | 0.95 | 0.97 | 0.95 | 0.98 | 10.78 | | | | | |
| ESP | 0.87 | 0.94 | 0.98 | 0.96 | 0.98 | 0.97 | 0.85 | | | | |
| FRA | 0.88 | 0.96 | 0.98 | 0.97 | 0.97 | 0.97 | 0.98 | 1.07 | | | |
| GBR | 0.91 | 0.93 | 0.97 | 0.95 | 0.96 | 0.94 | 0.96 | 0.97 | 1.14 | | |
| ITA | 0.85 | 0.88 | 0.95 | 0.92 | 0.94 | 0.93 | 0.96 | 0.95 | 0.95 | 1.15 | |
| NLD | 0.85 | 0.94 | 0.96 | 0.96 | 0.97 | 0.98 | 0.96 | 0.97 | 0.94 | 0.92 | 4.56 |
| USA | 0.89 | 0.91 | 0.98 | 0.94 | 0.95 | 0.94 | 0.96 | 0.95 | 0.97 | 0.94 | 0.93 |
| 1.20 | | | | | | | | | | | |
| HUN | 0.88 | 0.93 | 0.97 | 0.94 | 0.96 | 0.94 | 0.96 | 0.97 | 0.95 | 0.93 | 0.94 |
| 0.95 | 0.93 | | | | | | | | | | |
| POL | 0.85 | 0.88 | 0.92 | 0.89 | 0.93 | 0.92 | 0.94 | 0.93 | 0.91 | 0.92 | 0.92 |
| 0.90 | 0.92 | 7.21 | | | | | | | | | |
| NZL | 0.87 | 0.85 | 0.85 | 0.85 | 0.85 | 0.84 | 0.85 | 0.88 | 0.91 | 0.85 | 0.84 |
| 0.86 | 0.86 | 0.84 | 0.43 | | | | | | | | |
| ZAF | 0.89 | 0.91 | 0.92 | 0.90 | 0.91 | 0.88 | 0.90 | 0.92 | 0.94 | 0.88 | 0.87 |
| 0.92 | 0.90 | 0.86 | 0.89 | 8.88 | | | | | | | |
| JPN | 0.87 | 0.95 | 0.98 | 0.96 | 0.97 | 0.97 | 0.97 | 0.98 | 0.96 | 0.95 | 0.96 |
| 0.97 | 0.96 | 0.92 | 0.86 | 0.92 | 1.26 | | | | | | |
| CZE | 0.86 | 0.94 | 0.97 | 0.93 | 0.97 | 0.95 | 0.96 | 0.95 | 0.94 | 0.93 | 0.94 |
| 0.93 | 0.95 | 0.93 | 0.85 | 0.92 | 0.95 | 15.16 | | | | | |
| EST | 0.84 | 0.90 | 0.92 | 0.90 | 0.95 | 0.94 | 0.92 | 0.93 | 0.90 | 0.91 | 0.95 |
| 0.89 | 0.91 | 0.90 | 0.83 | 0.84 | 0.92 | 0.93 | 12.01 | | | | |
| IRL | 0.90 | 0.91 | 0.94 | 0.92 | 0.92 | 0.90 | 0.93 | 0.95 | 0.98 | 0.92 | 0.90 |
| 0.94 | 0.94 | 0.88 | 0.92 | 0.94 | 0.93 | 0.93 | 0.86 | 0.80 | | | |
| KOR | 0.84 | 0.86 | 0.85 | 0.84 | 0.84 | 0.84 | 0.85 | 0.85 | 0.85 | 0.83 | 0.84 |
| 0.84 | 0.85 | 0.82 | 0.84 | 0.85 | 0.85 | 0.85 | 0.83 | 0.84 | 4.65 | | |
| SVN | 0.87 | 0.93 | 0.95 | 0.93 | 0.95 | 0.95 | 0.95 | 0.95 | 0.92 | 0.90 | 0.95 |
| 0.92 | 0.92 | 0.93 | 0.86 | 0.86 | 0.95 | 0.93 | 0.91 | 0.90 | 0.86 | 15.09 | |
| PRT | 0.86 | 0.91 | 0.94 | 0.91 | 0.95 | 0.93 | 0.93 | 0.93 | 0.94 | 0.91 | 0.91 |
| 0.92 | 0.93 | 0.89 | 0.85 | 0.89 | 0.93 | 0.94 | 0.88 | 0.90 | 0.85 | 0.88 | 1.41 |

HOL cwi

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 5.13 | | | | | | | | | | |
| BEL | 0.66 | 1.67 | | | | | | | | | |
| CAN | 0.69 | 0.87 | 6.45 | | | | | | | | |
| CHE | 0.64 | 0.85 | 0.92 | 11.38 | | | | | | | |
| DEU | 0.67 | 0.86 | 0.89 | 0.84 | 12.32 | | | | | | |
| DFS | 0.69 | 0.87 | 0.92 | 0.85 | 0.93 | 12.46 | | | | | |
| ESP | 0.65 | 0.88 | 0.93 | 0.88 | 0.82 | 0.85 | 1.06 | | | | |
| FRA | 0.62 | 0.90 | 0.87 | 0.92 | 0.85 | 0.83 | 0.86 | 1.16 | | | |
| GBR | 0.78 | 0.86 | 0.91 | 0.87 | 0.90 | 0.90 | 0.85 | 0.83 | 1.24 | | |
| ITA | 0.58 | 0.78 | 0.79 | 0.82 | 0.71 | 0.68 | 0.81 | 0.88 | 0.72 | 1.24 | |
| NLD | 0.65 | 0.88 | 0.91 | 0.88 | 0.93 | 0.91 | 0.86 | 0.89 | 0.90 | 0.73 | 4.64 |
| USA | 0.61 | 0.83 | 0.89 | 0.88 | 0.82 | 0.80 | 0.86 | 0.92 | 0.81 | 0.91 | 0.83 |
| 1.27 | | | | | | | | | | | |
| HUN | 0.63 | 0.83 | 0.85 | 0.83 | 0.84 | 0.83 | 0.83 | 0.88 | 0.76 | 0.81 | 0.81 |
| 0.88 | 1.10 | | | | | | | | | | |
| POL | 0.63 | 0.87 | 0.88 | 0.83 | 0.85 | 0.85 | 0.88 | 0.85 | 0.84 | 0.76 | 0.85 |
| 0.83 | 0.84 | 12.34 | | | | | | | | | |
| NZL | 0.77 | 0.66 | 0.70 | 0.66 | 0.70 | 0.69 | 0.70 | 0.65 | 0.80 | 0.65 | 0.66 |
| 0.66 | 0.65 | 0.65 | 0.37 | | | | | | | | |
| ZAF | 0.66 | 0.89 | 0.87 | 0.88 | 0.86 | 0.87 | 0.87 | 0.88 | 0.91 | 0.80 | 0.87 |
| 0.87 | 0.83 | 0.85 | 0.72 | 10.31 | | | | | | | |
| JPN | 0.60 | 0.81 | 0.77 | 0.82 | 0.71 | 0.70 | 0.80 | 0.90 | 0.66 | 0.91 | 0.73 |
| 0.90 | 0.82 | 0.73 | 0.61 | 0.75 | 1.49 | | | | | | |
| CZE | 0.67 | 0.90 | 0.92 | 0.85 | 0.90 | 0.90 | 0.92 | 0.84 | 0.87 | 0.78 | 0.88 |
| 0.84 | 0.86 | 0.88 | 0.69 | 0.87 | 0.77 | 15.56 | | | | | |
| EST | 0.66 | 0.79 | 0.82 | 0.73 | 0.70 | 0.83 | 0.81 | 0.71 | 0.76 | 0.64 | 0.78 |
| 0.65 | 0.66 | 0.77 | 0.66 | 0.71 | 0.65 | 0.76 | 14.95 | | | | |
| IRL | 0.76 | 0.82 | 0.85 | 0.84 | 0.89 | 0.84 | 0.78 | 0.82 | 0.96 | 0.72 | 0.87 |
| 0.79 | 0.77 | 0.81 | 0.84 | 0.89 | 0.65 | 0.84 | 0.70 | 1.48 | | | |
| KOR | 0.64 | 0.74 | 0.65 | 0.65 | 0.68 | 0.71 | 0.69 | 0.69 | 0.65 | 0.64 | 0.66 |
| 0.69 | 0.70 | 0.63 | 0.67 | 0.66 | 0.68 | 0.74 | 0.64 | 0.66 | 2.67 | | |
| SVN | 0.66 | 0.74 | 0.82 | 0.81 | 0.83 | 0.80 | 0.83 | 0.75 | 0.80 | 0.74 | 0.79 |
| 0.82 | 0.80 | 0.81 | 0.67 | 0.86 | 0.66 | 0.79 | 0.68 | 0.81 | 0.66 | 20.34 | |
| PRT | 0.65 | 0.83 | 0.82 | 0.79 | 0.85 | 0.83 | 0.82 | 0.84 | 0.79 | 0.74 | 0.84 |
| 0.83 | 0.85 | 0.85 | 0.65 | 0.81 | 0.77 | 0.84 | 0.67 | 0.80 | 0.69 | 0.77 | 2.25 |

HOL bde

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|------|-------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | PRT | SVN |
| AUS | 5.29 | | | | | | | | | | |
| BEL | 0.70 | 1.38 | | | | | | | | | |
| CAN | 0.87 | 0.77 | 5.87 | | | | | | | | |
| CHE | 0.72 | 0.90 | 0.85 | 11.17 | | | | | | | |
| DEU | 0.80 | 0.89 | 0.89 | 0.90 | 11.70 | | | | | | |
| DFS | 0.86 | 0.84 | 0.92 | 0.85 | 0.93 | 11.63 | | | | | |
| ESP | 0.77 | 0.90 | 0.89 | 0.92 | 0.91 | 0.88 | 0.99 | | | | |
| FRA | 0.65 | 0.92 | 0.69 | 0.89 | 0.81 | 0.72 | 0.85 | 1.08 | | | |
| GBR | 0.80 | 0.91 | 0.87 | 0.91 | 0.91 | 0.89 | 0.92 | 0.83 | 1.19 | | |
| ITA | 0.67 | 0.86 | 0.72 | 0.85 | 0.85 | 0.75 | 0.87 | 0.89 | 0.87 | 1.20 | |
| NLD | 0.71 | 0.88 | 0.83 | 0.92 | 0.91 | 0.84 | 0.90 | 0.86 | 0.91 | 0.88 | 4.73 |
| USA | 0.68 | 0.91 | 0.75 | 0.90 | 0.88 | 0.79 | 0.90 | 0.91 | 0.89 | 0.92 | 0.90 |
| 1.16 | | | | | | | | | | | |
| HUN | 0.70 | 0.91 | 0.78 | 0.87 | 0.88 | 0.85 | 0.90 | 0.85 | 0.88 | 0.85 | 0.84 |
| 0.90 | 1.04 | | | | | | | | | | |
| POL | 0.79 | 0.78 | 0.86 | 0.80 | 0.90 | 0.89 | 0.86 | 0.69 | 0.84 | 0.77 | 0.81 |
| 0.78 | 0.85 | 12.28 | | | | | | | | | |
| NZL | 0.78 | 0.69 | 0.69 | 0.69 | 0.70 | 0.70 | 0.69 | 0.67 | 0.69 | 0.68 | 0.66 |
| 0.68 | 0.69 | 0.71 | 0.37 | | | | | | | | |
| ZAF | 0.80 | 0.86 | 0.85 | 0.85 | 0.88 | 0.88 | 0.90 | 0.76 | 0.93 | 0.81 | 0.83 |
| 0.85 | 0.85 | 0.89 | 0.71 | 10.59 | | | | | | | |
| JPN | 0.67 | 0.93 | 0.71 | 0.89 | 0.86 | 0.77 | 0.88 | 0.95 | 0.85 | 0.90 | 0.89 |
| 0.94 | 0.87 | 0.72 | 0.65 | 0.78 | 1.41 | | | | | | |
| CZE | 0.83 | 0.83 | 0.92 | 0.82 | 0.94 | 0.93 | 0.88 | 0.69 | 0.88 | 0.77 | 0.83 |
| 0.79 | 0.87 | 0.92 | 0.70 | 0.89 | 0.76 | 14.95 | | | | | |
| EST | 0.76 | 0.84 | 0.86 | 0.82 | 0.87 | 0.87 | 0.87 | 0.78 | 0.86 | 0.77 | 0.83 |
| 0.84 | 0.85 | 0.85 | 0.68 | 0.81 | 0.80 | 0.86 | 14.17 | | | | |
| IRL | 0.83 | 0.90 | 0.87 | 0.89 | 0.93 | 0.91 | 0.92 | 0.81 | 0.97 | 0.87 | 0.89 |
| 0.87 | 0.86 | 0.87 | 0.72 | 0.93 | 0.82 | 0.88 | 0.82 | 1.28 | | | |
| KOR | 0.69 | 0.79 | 0.70 | 0.78 | 0.81 | 0.82 | 0.78 | 0.74 | 0.73 | 0.69 | 0.71 |
| 0.72 | 0.80 | 0.71 | 0.68 | 0.74 | 0.78 | 0.78 | 0.70 | 0.75 | 3.43 | | |
| PRT | 0.76 | 0.82 | 0.78 | 0.78 | 0.89 | 0.87 | 0.83 | 0.70 | 0.84 | 0.78 | 0.79 |
| 0.81 | 0.85 | 0.86 | 0.70 | 0.85 | 0.78 | 0.87 | 0.79 | 0.87 | 0.72 | 2.13 | |
| SVN | 0.74 | 0.87 | 0.83 | 0.88 | 0.91 | 0.81 | 0.91 | 0.82 | 0.87 | 0.83 | 0.90 |
| 0.85 | 0.85 | 0.81 | 0.71 | 0.81 | 0.86 | 0.85 | 0.83 | 0.85 | 0.79 | 0.78 | 20.42 |

HOL ang

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|------|------|-------|-------|-------|------|------|------|-------|------|
| USA | HUN | POL | ZAF | JPN | CZE | EST | IRL | KOR | PRT | SVN | |
| AUS | 6.38 | | | | | | | | | | |
| BEL | 0.60 | 1.07 | | | | | | | | | |
| CAN | 0.67 | 0.76 | 6.38 | | | | | | | | |
| CHE | 0.59 | 0.77 | 0.87 | 11.61 | | | | | | | |
| DEU | 0.60 | 0.75 | 0.86 | 0.78 | 12.57 | | | | | | |
| DFS | 0.65 | 0.85 | 0.89 | 0.81 | 0.87 | 10.75 | | | | | |
| ESP | 0.67 | 0.77 | 0.88 | 0.78 | 0.74 | 0.84 | 0.74 | | | | |
| FRA | 0.62 | 0.83 | 0.89 | 0.87 | 0.81 | 0.88 | 0.84 | 0.97 | | | |
| GBR | 0.80 | 0.76 | 0.90 | 0.79 | 0.81 | 0.88 | 0.82 | 0.80 | 1.21 | | |
| ITA | 0.71 | 0.74 | 0.90 | 0.76 | 0.82 | 0.86 | 0.84 | 0.81 | 0.88 | 1.30 | |
| NLD | 0.74 | 0.60 | 0.73 | 0.67 | 0.59 | 0.65 | 0.75 | 0.63 | 0.78 | 0.71 | 4.57 |
| USA | 0.71 | 0.77 | 0.94 | 0.81 | 0.86 | 0.90 | 0.85 | 0.85 | 0.91 | 0.88 | 0.66 |
| 1.38 | | | | | | | | | | | |
| HUN | 0.60 | 0.71 | 0.77 | 0.71 | 0.86 | 0.78 | 0.70 | 0.80 | 0.71 | 0.76 | 0.59 |
| 0.79 | 1.00 | | | | | | | | | | |
| POL | 0.58 | 0.67 | 0.72 | 0.71 | 0.64 | 0.72 | 0.77 | 0.76 | 0.67 | 0.76 | 0.65 |
| 0.70 | 0.60 | 6.51 | | | | | | | | | |
| ZAF | 0.67 | 0.80 | 0.72 | 0.66 | 0.78 | 0.80 | 0.71 | 0.73 | 0.85 | 0.78 | 0.59 |
| 0.76 | 0.77 | 0.62 | 8.87 | | | | | | | | |
| JPN | 0.67 | 0.80 | 0.90 | 0.77 | 0.82 | 0.91 | 0.88 | 0.86 | 0.86 | 0.90 | 0.74 |
| 0.86 | 0.73 | 0.77 | 0.77 | 1.54 | | | | | | | |
| CZE | 0.61 | 0.77 | 0.83 | 0.74 | 0.79 | 0.85 | 0.73 | 0.77 | 0.74 | 0.81 | 0.59 |
| 0.78 | 0.81 | 0.62 | 0.68 | 0.77 | 14.41 | | | | | | |
| EST | 0.62 | 0.75 | 0.67 | 0.63 | 0.70 | 0.80 | 0.62 | 0.67 | 0.64 | 0.62 | 0.61 |
| 0.64 | 0.74 | 0.65 | 0.70 | 0.71 | 0.77 | 16.29 | | | | | |
| IRL | 0.76 | 0.77 | 0.91 | 0.80 | 0.84 | 0.87 | 0.81 | 0.86 | 0.95 | 0.86 | 0.67 |
| 0.92 | 0.77 | 0.69 | 0.84 | 0.85 | 0.76 | 0.65 | 0.81 | | | | |
| KOR | 0.68 | 0.78 | 0.79 | 0.74 | 0.73 | 0.75 | 0.78 | 0.74 | 0.79 | 0.75 | 0.61 |
| 0.76 | 0.72 | 0.62 | 0.81 | 0.82 | 0.66 | 0.70 | 0.79 | 2.38 | | | |
| PRT | 0.60 | 0.71 | 0.78 | 0.62 | 0.76 | 0.78 | 0.74 | 0.73 | 0.79 | 0.80 | 0.59 |
| 0.79 | 0.70 | 0.63 | 0.70 | 0.78 | 0.70 | 0.61 | 0.74 | 0.79 | 1.49 | | |
| SVN | 0.63 | 0.72 | 0.74 | 0.81 | 0.61 | 0.66 | 0.73 | 0.69 | 0.71 | 0.72 | 0.76 |
| 0.71 | 0.62 | 0.82 | 0.62 | 0.69 | 0.68 | 0.63 | 0.68 | 0.71 | 0.67 | 22.75 | |

HOL ran

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 5.77 | | | | | | | | | | |
| BEL | 0.95 | 1.63 | | | | | | | | | |
| CAN | 0.93 | 0.97 | 6.06 | | | | | | | | |
| CHE | 0.94 | 0.96 | 0.96 | 11.37 | | | | | | | |
| DEU | 0.93 | 0.96 | 0.98 | 0.95 | 12.00 | | | | | | |
| DFS | 0.93 | 0.98 | 0.98 | 0.96 | 0.98 | 11.64 | | | | | |
| ESP | 0.93 | 0.97 | 0.97 | 0.96 | 0.98 | 0.97 | 1.14 | | | | |
| FRA | 0.96 | 0.97 | 0.97 | 0.96 | 0.96 | 0.97 | 0.97 | 1.08 | | | |
| GBR | 0.96 | 0.95 | 0.97 | 0.94 | 0.97 | 0.96 | 0.96 | 0.98 | 1.27 | | |
| ITA | 0.90 | 0.95 | 0.96 | 0.93 | 0.95 | 0.95 | 0.96 | 0.96 | 0.94 | 1.54 | |
| NLD | 0.93 | 0.96 | 0.97 | 0.94 | 0.98 | 0.97 | 0.97 | 0.96 | 0.97 | 0.95 | 5.02 |
| USA | 0.92 | 0.95 | 0.97 | 0.94 | 0.96 | 0.97 | 0.96 | 0.96 | 0.97 | 0.95 | 0.96 |
| 1.46 | | | | | | | | | | | |
| HUN | 0.93 | 0.97 | 0.96 | 0.95 | 0.97 | 0.96 | 0.97 | 0.97 | 0.95 | 0.95 | 0.96 |
| 0.95 | 1.01 | | | | | | | | | | |
| POL | 0.91 | 0.95 | 0.96 | 0.94 | 0.96 | 0.96 | 0.96 | 0.95 | 0.93 | 0.95 | 0.95 |
| 0.92 | 0.95 | 11.96 | | | | | | | | | |
| NZL | 0.96 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.93 | 0.95 | 0.90 | 0.90 |
| 0.90 | 0.90 | 0.89 | 0.33 | | | | | | | | |
| ZAF | 0.97 | 0.96 | 0.93 | 0.92 | 0.94 | 0.94 | 0.95 | 0.96 | 0.95 | 0.92 | 0.94 |
| 0.93 | 0.96 | 0.91 | 0.93 | 10.78 | | | | | | | |
| JPN | 0.90 | 0.95 | 0.98 | 0.95 | 0.96 | 0.97 | 0.97 | 0.95 | 0.93 | 0.95 | 0.95 |
| 0.95 | 0.96 | 0.96 | 0.88 | 0.90 | 1.49 | | | | | | |
| CZE | 0.90 | 0.94 | 0.96 | 0.91 | 0.97 | 0.96 | 0.95 | 0.93 | 0.95 | 0.95 | 0.95 |
| 0.96 | 0.95 | 0.94 | 0.89 | 0.92 | 0.94 | 15.57 | | | | | |
| EST | 0.88 | 0.91 | 0.92 | 0.88 | 0.93 | 0.92 | 0.90 | 0.90 | 0.90 | 0.91 | 0.95 |
| 0.90 | 0.89 | 0.91 | 0.86 | 0.88 | 0.92 | 0.92 | 14.42 | | | | |
| IRL | 0.96 | 0.93 | 0.94 | 0.93 | 0.95 | 0.93 | 0.94 | 0.97 | 0.99 | 0.93 | 0.95 |
| 0.95 | 0.92 | 0.90 | 0.95 | 0.94 | 0.90 | 0.91 | 0.88 | 1.76 | | | |
| KOR | 0.89 | 0.89 | 0.90 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.89 | 0.89 | 0.89 |
| 0.89 | 0.90 | 0.90 | 0.89 | 0.90 | 0.90 | 0.89 | 0.87 | 0.88 | 5.18 | | |
| SVN | 0.90 | 0.94 | 0.94 | 0.93 | 0.95 | 0.96 | 0.93 | 0.94 | 0.92 | 0.94 | 0.92 |
| 0.92 | 0.92 | 0.94 | 0.88 | 0.90 | 0.93 | 0.91 | 0.89 | 0.91 | 0.89 | 18.51 | |
| PRT | 0.90 | 0.93 | 0.93 | 0.91 | 0.95 | 0.93 | 0.95 | 0.94 | 0.94 | 0.93 | 0.94 |
| 0.93 | 0.94 | 0.92 | 0.90 | 0.90 | 0.91 | 0.93 | 0.89 | 0.92 | 0.90 | 0.93 | 1.88 |

HOL rwi

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|------|-------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | PRT | SVN |
| AUS | 5.19 | | | | | | | | | | |
| BEL | 0.88 | 1.43 | | | | | | | | | |
| CAN | 0.90 | 0.95 | 5.84 | | | | | | | | |
| CHE | 0.88 | 0.95 | 0.93 | 11.02 | | | | | | | |
| DEU | 0.84 | 0.92 | 0.95 | 0.88 | 11.35 | | | | | | |
| DFS | 0.83 | 0.93 | 0.95 | 0.89 | 0.97 | 12.40 | | | | | |
| ESP | 0.91 | 0.93 | 0.97 | 0.91 | 0.94 | 0.94 | 1.02 | | | | |
| FRA | 0.89 | 0.96 | 0.96 | 0.92 | 0.95 | 0.95 | 0.95 | 1.11 | | | |
| GBR | 0.87 | 0.90 | 0.94 | 0.87 | 0.89 | 0.91 | 0.91 | 0.94 | 1.16 | | |
| ITA | 0.80 | 0.83 | 0.88 | 0.82 | 0.84 | 0.85 | 0.87 | 0.89 | 0.91 | 1.30 | |
| NLD | 0.88 | 0.94 | 0.95 | 0.92 | 0.96 | 0.93 | 0.94 | 0.95 | 0.89 | 0.81 | 4.64 |
| USA | 0.80 | 0.84 | 0.91 | 0.81 | 0.84 | 0.87 | 0.88 | 0.89 | 0.95 | 0.89 | 0.81 |
| 1.29 | | | | | | | | | | | |
| HUN | 0.82 | 0.91 | 0.92 | 0.85 | 0.92 | 0.92 | 0.89 | 0.93 | 0.90 | 0.89 | 0.90 |
| 0.88 | 1.03 | | | | | | | | | | |
| POL | 0.84 | 0.91 | 0.91 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.88 | 0.86 | 0.89 |
| 0.83 | 0.90 | 10.75 | | | | | | | | | |
| NZL | 0.88 | 0.83 | 0.85 | 0.80 | 0.81 | 0.80 | 0.85 | 0.83 | 0.85 | 0.80 | 0.82 |
| 0.80 | 0.80 | 0.79 | 0.30 | | | | | | | | |
| ZAF | 0.80 | 0.82 | 0.85 | 0.80 | 0.84 | 0.84 | 0.80 | 0.84 | 0.91 | 0.82 | 0.80 |
| 0.88 | 0.87 | 0.81 | 0.80 | 10.96 | | | | | | | |
| JPN | 0.85 | 0.94 | 0.96 | 0.92 | 0.94 | 0.95 | 0.94 | 0.97 | 0.94 | 0.89 | 0.93 |
| 0.90 | 0.94 | 0.91 | 0.83 | 0.88 | 1.51 | | | | | | |
| CZE | 0.85 | 0.91 | 0.94 | 0.87 | 0.94 | 0.93 | 0.94 | 0.91 | 0.89 | 0.86 | 0.92 |
| 0.85 | 0.91 | 0.91 | 0.84 | 0.81 | 0.92 | 16.53 | | | | | |
| EST | 0.83 | 0.87 | 0.88 | 0.86 | 0.90 | 0.87 | 0.87 | 0.87 | 0.83 | 0.81 | 0.90 |
| 0.79 | 0.85 | 0.89 | 0.80 | 0.80 | 0.86 | 0.86 | 13.27 | | | | |
| IRL | 0.77 | 0.80 | 0.83 | 0.79 | 0.80 | 0.82 | 0.80 | 0.81 | 0.91 | 0.80 | 0.80 |
| 0.90 | 0.82 | 0.79 | 0.80 | 0.84 | 0.82 | 0.81 | 0.78 | 1.65 | | | |
| KOR | 0.79 | 0.85 | 0.81 | 0.81 | 0.81 | 0.80 | 0.80 | 0.85 | 0.80 | 0.77 | 0.80 |
| 0.79 | 0.84 | 0.79 | 0.80 | 0.80 | 0.84 | 0.80 | 0.80 | 0.79 | 3.55 | | |
| PRT | 0.80 | 0.86 | 0.86 | 0.80 | 0.87 | 0.88 | 0.85 | 0.86 | 0.85 | 0.84 | 0.81 |
| 0.84 | 0.88 | 0.84 | 0.80 | 0.83 | 0.85 | 0.85 | 0.81 | 0.80 | 0.80 | 1.88 | |
| SVN | 0.82 | 0.90 | 0.93 | 0.88 | 0.93 | 0.91 | 0.93 | 0.89 | 0.90 | 0.80 | 0.92 |
| 0.85 | 0.85 | 0.89 | 0.81 | 0.85 | 0.90 | 0.92 | 0.86 | 0.81 | 0.80 | 0.81 | 22.25 |

HOL rls

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 6.44 | | | | | | | | | | |
| BEL | 0.83 | 1.82 | | | | | | | | | |
| CAN | 0.77 | 0.95 | 6.46 | | | | | | | | |
| CHE | 0.84 | 0.93 | 0.93 | 11.51 | | | | | | | |
| DEU | 0.78 | 0.94 | 0.95 | 0.90 | 11.81 | | | | | | |
| DFS | 0.74 | 0.94 | 0.97 | 0.90 | 0.96 | 13.36 | | | | | |
| ESP | 0.79 | 0.95 | 0.95 | 0.91 | 0.95 | 0.95 | 1.19 | | | | |
| FRA | 0.83 | 0.91 | 0.87 | 0.89 | 0.88 | 0.87 | 0.90 | 1.08 | | | |
| GBR | 0.87 | 0.87 | 0.85 | 0.89 | 0.87 | 0.83 | 0.84 | 0.91 | 1.29 | | |
| ITA | 0.71 | 0.88 | 0.89 | 0.84 | 0.90 | 0.89 | 0.90 | 0.88 | 0.83 | 1.54 | |
| NLD | 0.78 | 0.92 | 0.92 | 0.90 | 0.94 | 0.93 | 0.92 | 0.89 | 0.88 | 0.88 | 5.21 |
| USA | 0.75 | 0.94 | 0.96 | 0.88 | 0.93 | 0.95 | 0.95 | 0.87 | 0.84 | 0.88 | 0.90 |
| 1.64 | | | | | | | | | | | |
| HUN | 0.79 | 0.92 | 0.93 | 0.87 | 0.94 | 0.91 | 0.94 | 0.88 | 0.84 | 0.90 | 0.88 |
| 0.91 | 1.03 | | | | | | | | | | |
| POL | 0.77 | 0.93 | 0.93 | 0.87 | 0.95 | 0.91 | 0.92 | 0.89 | 0.83 | 0.89 | 0.86 |
| 0.90 | 0.95 | 13.25 | | | | | | | | | |
| NZL | 0.77 | 0.71 | 0.71 | 0.72 | 0.71 | 0.70 | 0.71 | 0.73 | 0.77 | 0.71 | 0.69 |
| 0.71 | 0.72 | 0.72 | 0.15 | | | | | | | | |
| ZAF | 0.89 | 0.82 | 0.79 | 0.82 | 0.76 | 0.72 | 0.80 | 0.84 | 0.89 | 0.75 | 0.78 |
| 0.78 | 0.78 | 0.79 | 0.73 | 10.33 | | | | | | | |
| JPN | 0.73 | 0.91 | 0.97 | 0.89 | 0.94 | 0.97 | 0.94 | 0.86 | 0.81 | 0.88 | 0.89 |
| 0.94 | 0.90 | 0.93 | 0.69 | 0.73 | 1.84 | | | | | | |
| CZE | 0.76 | 0.92 | 0.91 | 0.82 | 0.94 | 0.92 | 0.90 | 0.85 | 0.84 | 0.87 | 0.88 |
| 0.90 | 0.92 | 0.95 | 0.71 | 0.78 | 0.92 | 15.78 | | | | | |
| EST | 0.73 | 0.82 | 0.82 | 0.79 | 0.86 | 0.85 | 0.86 | 0.81 | 0.74 | 0.82 | 0.88 |
| 0.83 | 0.80 | 0.83 | 0.68 | 0.67 | 0.83 | 0.82 | 15.16 | | | | |
| IRL | 0.89 | 0.83 | 0.76 | 0.83 | 0.79 | 0.74 | 0.76 | 0.85 | 0.96 | 0.76 | 0.82 |
| 0.75 | 0.77 | 0.77 | 0.77 | 0.89 | 0.74 | 0.80 | 0.69 | 1.70 | | | |
| KOR | 0.69 | 0.84 | 0.86 | 0.78 | 0.84 | 0.88 | 0.88 | 0.81 | 0.73 | 0.79 | 0.84 |
| 0.86 | 0.85 | 0.82 | 0.70 | 0.72 | 0.87 | 0.81 | 0.75 | 0.69 | 2.40 | | |
| SVN | 0.73 | 0.91 | 0.94 | 0.89 | 0.93 | 0.94 | 0.90 | 0.88 | 0.82 | 0.86 | 0.90 |
| 0.90 | 0.89 | 0.90 | 0.72 | 0.71 | 0.91 | 0.85 | 0.83 | 0.72 | 0.82 | 22.79 | |
| PRT | 0.75 | 0.85 | 0.83 | 0.78 | 0.83 | 0.85 | 0.86 | 0.82 | 0.80 | 0.86 | 0.81 |
| 0.85 | 0.85 | 0.82 | 0.72 | 0.72 | 0.82 | 0.81 | 0.72 | 0.72 | 0.83 | 0.83 | 2.60 |

HOL rlr

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|------|------|-------|------|------|
| USA | HUN | POL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT | |
| AUS | 6.63 | | | | | | | | | | |
| BEL | 0.66 | 1.90 | | | | | | | | | |
| CAN | 0.63 | 0.84 | 6.58 | | | | | | | | |
| CHE | 0.78 | 0.85 | 0.75 | 12.09 | | | | | | | |
| DEU | 0.61 | 0.90 | 0.89 | 0.73 | 11.29 | | | | | | |
| DFS | 0.66 | 0.86 | 0.91 | 0.76 | 0.92 | 12.92 | | | | | |
| ESP | 0.61 | 0.87 | 0.86 | 0.73 | 0.87 | 0.90 | 1.12 | | | | |
| FRA | 0.72 | 0.91 | 0.84 | 0.86 | 0.84 | 0.82 | 0.86 | 1.08 | | | |
| GBR | 0.52 | 0.63 | 0.69 | 0.58 | 0.65 | 0.62 | 0.70 | 0.64 | 1.28 | | |
| ITA | 0.56 | 0.78 | 0.81 | 0.66 | 0.79 | 0.74 | 0.79 | 0.81 | 0.74 | 1.86 | |
| NLD | 0.61 | 0.89 | 0.87 | 0.72 | 0.91 | 0.91 | 0.85 | 0.82 | 0.66 | 0.75 | 4.73 |
| USA | 0.57 | 0.77 | 0.87 | 0.63 | 0.77 | 0.83 | 0.78 | 0.77 | 0.70 | 0.87 | 0.81 |
| 1.81 | | | | | | | | | | | |
| HUN | 0.64 | 0.86 | 0.78 | 0.78 | 0.81 | 0.81 | 0.76 | 0.83 | 0.55 | 0.78 | 0.79 |
| 0.80 | 1.06 | | | | | | | | | | |
| POL | 0.63 | 0.84 | 0.84 | 0.71 | 0.81 | 0.83 | 0.77 | 0.81 | 0.54 | 0.78 | 0.78 |
| 0.80 | 0.74 | 13.96 | | | | | | | | | |
| ZAF | 0.63 | 0.71 | 0.55 | 0.61 | 0.54 | 0.56 | 0.54 | 0.65 | 0.54 | 0.63 | 0.55 |
| 0.70 | 0.66 | 0.66 | 8.94 | | | | | | | | |
| JPN | 0.70 | 0.81 | 0.90 | 0.79 | 0.83 | 0.92 | 0.80 | 0.81 | 0.54 | 0.71 | 0.83 |
| 0.79 | 0.77 | 0.79 | 0.58 | 1.91 | | | | | | | |
| CZE | 0.62 | 0.83 | 0.81 | 0.67 | 0.86 | 0.81 | 0.78 | 0.77 | 0.57 | 0.82 | 0.79 |
| 0.78 | 0.80 | 0.87 | 0.67 | 0.76 | 18.18 | | | | | | |
| EST | 0.58 | 0.65 | 0.58 | 0.57 | 0.72 | 0.77 | 0.63 | 0.60 | 0.54 | 0.56 | 0.72 |
| 0.57 | 0.59 | 0.60 | 0.54 | 0.71 | 0.58 | 14.58 | | | | | |
| IRL | 0.52 | 0.56 | 0.62 | 0.54 | 0.56 | 0.56 | 0.63 | 0.58 | 0.77 | 0.71 | 0.61 |
| 0.60 | 0.54 | 0.57 | 0.55 | 0.54 | 0.56 | 0.55 | 1.78 | | | | |
| KOR | 0.56 | 0.73 | 0.80 | 0.68 | 0.74 | 0.82 | 0.81 | 0.80 | 0.53 | 0.70 | 0.73 |
| 0.75 | 0.69 | 0.75 | 0.55 | 0.85 | 0.73 | 0.62 | 0.53 | 2.17 | | | |
| SVN | 0.57 | 0.86 | 0.79 | 0.74 | 0.81 | 0.85 | 0.77 | 0.80 | 0.55 | 0.71 | 0.87 |
| 0.80 | 0.83 | 0.74 | 0.55 | 0.83 | 0.71 | 0.62 | 0.56 | 0.73 | 25.16 | | |
| PRT | 0.59 | 0.84 | 0.73 | 0.68 | 0.85 | 0.77 | 0.75 | 0.78 | 0.59 | 0.70 | 0.76 |
| 0.69 | 0.73 | 0.74 | 0.55 | 0.68 | 0.79 | 0.56 | 0.54 | 0.69 | 0.85 | 2.75 | |

HOL fan

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| USA | HUN | POL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT | |
| AUS | 5.82 | | | | | | | | | | |
| BEL | 0.70 | 1.97 | | | | | | | | | |
| CAN | 0.66 | 0.83 | 6.73 | | | | | | | | |
| CHE | 0.70 | 0.87 | 0.75 | 11.43 | | | | | | | |
| DEU | 0.72 | 0.88 | 0.83 | 0.74 | 12.80 | | | | | | |
| DFS | 0.64 | 0.90 | 0.88 | 0.74 | 0.85 | 13.17 | | | | | |
| ESP | 0.71 | 0.77 | 0.86 | 0.67 | 0.85 | 0.83 | 1.04 | | | | |
| FRA | 0.82 | 0.78 | 0.78 | 0.70 | 0.89 | 0.71 | 0.85 | 1.05 | | | |
| GBR | 0.81 | 0.78 | 0.83 | 0.68 | 0.91 | 0.74 | 0.87 | 0.92 | 1.35 | | |
| ITA | 0.63 | 0.68 | 0.76 | 0.64 | 0.74 | 0.70 | 0.74 | 0.71 | 0.73 | 1.63 | |
| NLD | 0.74 | 0.79 | 0.76 | 0.67 | 0.90 | 0.77 | 0.80 | 0.85 | 0.89 | 0.70 | 5.20 |
| USA | 0.68 | 0.75 | 0.88 | 0.66 | 0.83 | 0.79 | 0.85 | 0.82 | 0.84 | 0.86 | 0.81 |
| 1.62 | | | | | | | | | | | |
| HUN | 0.82 | 0.78 | 0.78 | 0.76 | 0.87 | 0.71 | 0.84 | 0.92 | 0.88 | 0.67 | 0.82 |
| 0.80 | 1.11 | | | | | | | | | | |
| POL | 0.65 | 0.74 | 0.80 | 0.72 | 0.72 | 0.74 | 0.75 | 0.74 | 0.74 | 0.72 | 0.65 |
| 0.79 | 0.78 | 12.40 | | | | | | | | | |
| ZAF | 0.87 | 0.77 | 0.77 | 0.74 | 0.84 | 0.72 | 0.80 | 0.86 | 0.89 | 0.73 | 0.77 |
| 0.81 | 0.87 | 0.69 | 10.94 | | | | | | | | |
| JPN | 0.79 | 0.75 | 0.70 | 0.79 | 0.80 | 0.71 | 0.74 | 0.77 | 0.75 | 0.64 | 0.78 |
| 0.74 | 0.87 | 0.66 | 0.77 | 2.14 | | | | | | | |
| CZE | 0.75 | 0.85 | 0.84 | 0.71 | 0.91 | 0.82 | 0.85 | 0.86 | 0.84 | 0.70 | 0.83 |
| 0.82 | 0.92 | 0.75 | 0.80 | 0.85 | 18.31 | | | | | | |
| EST | 0.72 | 0.74 | 0.68 | 0.66 | 0.78 | 0.73 | 0.84 | 0.81 | 0.75 | 0.64 | 0.81 |
| 0.72 | 0.81 | 0.65 | 0.68 | 0.82 | 0.83 | 15.42 | | | | | |
| IRL | 0.77 | 0.73 | 0.81 | 0.64 | 0.83 | 0.72 | 0.80 | 0.81 | 0.95 | 0.73 | 0.79 |
| 0.78 | 0.77 | 0.73 | 0.82 | 0.64 | 0.76 | 0.66 | 1.70 | | | | |
| KOR | 0.64 | 0.64 | 0.73 | 0.62 | 0.74 | 0.65 | 0.79 | 0.76 | 0.76 | 0.69 | 0.73 |
| 0.78 | 0.79 | 0.68 | 0.67 | 0.65 | 0.76 | 0.65 | 0.66 | 1.68 | | | |
| SVN | 0.65 | 0.65 | 0.74 | 0.65 | 0.70 | 0.72 | 0.72 | 0.65 | 0.66 | 0.65 | 0.65 |
| 0.71 | 0.65 | 0.65 | 0.64 | 0.65 | 0.68 | 0.63 | 0.72 | 0.64 | 22.59 | | |
| PRT | 0.65 | 0.65 | 0.65 | 0.65 | 0.75 | 0.65 | 0.71 | 0.74 | 0.69 | 0.65 | 0.70 |
| 0.72 | 0.66 | 0.65 | 0.66 | 0.66 | 0.71 | 0.72 | 0.65 | 0.73 | 0.66 | 2.53 | |

HOL fua

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 5.36 | | | | | | | | | | |
| BEL | 0.75 | 1.55 | | | | | | | | | |
| CAN | 0.77 | 0.76 | 5.74 | | | | | | | | |
| CHE | 0.82 | 0.78 | 0.91 | 11.70 | | | | | | | |
| DEU | 0.75 | 0.82 | 0.93 | 0.84 | 12.15 | | | | | | |
| DFS | 0.82 | 0.84 | 0.92 | 0.90 | 0.89 | 11.87 | | | | | |
| ESP | 0.78 | 0.77 | 0.88 | 0.84 | 0.82 | 0.82 | 0.85 | | | | |
| FRA | 0.79 | 0.91 | 0.89 | 0.86 | 0.90 | 0.92 | 0.83 | 1.07 | | | |
| GBR | 0.79 | 0.77 | 0.95 | 0.86 | 0.95 | 0.88 | 0.88 | 0.88 | 1.17 | | |
| ITA | 0.70 | 0.66 | 0.89 | 0.82 | 0.86 | 0.79 | 0.86 | 0.80 | 0.91 | 1.38 | |
| NLD | 0.75 | 0.87 | 0.93 | 0.89 | 0.95 | 0.92 | 0.86 | 0.93 | 0.92 | 0.82 | 5.15 |
| USA | 0.74 | 0.68 | 0.95 | 0.85 | 0.89 | 0.85 | 0.88 | 0.83 | 0.94 | 0.94 | 0.87 |
| 1.43 | | | | | | | | | | | |
| HUN | 0.81 | 0.73 | 0.90 | 0.87 | 0.87 | 0.88 | 0.82 | 0.85 | 0.87 | 0.81 | 0.86 |
| 0.83 | 1.04 | | | | | | | | | | |
| POL | 0.71 | 0.81 | 0.85 | 0.85 | 0.90 | 0.89 | 0.80 | 0.88 | 0.86 | 0.78 | 0.89 |
| 0.80 | 0.84 | 10.05 | | | | | | | | | |
| NZL | 0.78 | 0.77 | 0.81 | 0.77 | 0.83 | 0.77 | 0.79 | 0.83 | 0.85 | 0.77 | 0.83 |
| 0.82 | 0.71 | 0.74 | 0.39 | | | | | | | | |
| ZAF | 0.80 | 0.78 | 0.87 | 0.81 | 0.91 | 0.87 | 0.83 | 0.84 | 0.91 | 0.79 | 0.88 |
| 0.83 | 0.85 | 0.82 | 0.76 | 10.47 | | | | | | | |
| JPN | 0.75 | 0.74 | 0.95 | 0.91 | 0.89 | 0.92 | 0.82 | 0.85 | 0.91 | 0.87 | 0.89 |
| 0.91 | 0.88 | 0.84 | 0.77 | 0.82 | 1.54 | | | | | | |
| CZE | 0.79 | 0.85 | 0.90 | 0.85 | 0.94 | 0.91 | 0.79 | 0.91 | 0.91 | 0.79 | 0.92 |
| 0.81 | 0.93 | 0.91 | 0.75 | 0.91 | 0.87 | 15.46 | | | | | |
| EST | 0.67 | 0.73 | 0.81 | 0.75 | 0.79 | 0.84 | 0.68 | 0.82 | 0.76 | 0.69 | 0.82 |
| 0.72 | 0.78 | 0.80 | 0.71 | 0.72 | 0.79 | 0.79 | 14.56 | | | | |
| IRL | 0.79 | 0.77 | 0.88 | 0.82 | 0.88 | 0.81 | 0.89 | 0.86 | 0.95 | 0.88 | 0.86 |
| 0.90 | 0.76 | 0.82 | 0.88 | 0.85 | 0.82 | 0.82 | 0.70 | 1.28 | | | |
| KOR | 0.74 | 0.75 | 0.72 | 0.77 | 0.73 | 0.78 | 0.73 | 0.77 | 0.77 | 0.68 | 0.77 |
| 0.69 | 0.77 | 0.80 | 0.69 | 0.81 | 0.75 | 0.81 | 0.69 | 0.75 | 3.31 | | |
| SVN | 0.69 | 0.80 | 0.68 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.68 | 0.68 | 0.69 |
| 0.68 | 0.68 | 0.68 | 0.69 | 0.68 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 18.67 | 0.68 |
| PRT | 0.68 | 0.72 | 0.68 | 0.68 | 0.68 | 0.68 | 0.71 | 0.68 | 0.68 | 0.68 | 0.68 |
| 0.68 | 0.68 | 0.68 | 0.70 | 0.69 | 0.68 | 0.68 | 0.68 | 0.69 | 0.69 | 0.74 | 1.86 |

HOL ruh

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 5.04 | | | | | | | | | | |
| BEL | 0.84 | 1.34 | | | | | | | | | |
| CAN | 0.79 | 0.92 | 5.78 | | | | | | | | |
| CHE | 0.79 | 0.89 | 0.92 | 10.96 | | | | | | | |
| DEU | 0.82 | 0.88 | 0.88 | 0.87 | 13.09 | | | | | | |
| DFS | 0.79 | 0.90 | 0.89 | 0.91 | 0.95 | 11.59 | | | | | |
| ESP | 0.83 | 0.85 | 0.82 | 0.84 | 0.90 | 0.91 | 0.81 | | | | |
| FRA | 0.78 | 0.89 | 0.89 | 0.88 | 0.90 | 0.93 | 0.88 | 1.09 | | | |
| GBR | 0.83 | 0.82 | 0.79 | 0.83 | 0.87 | 0.90 | 0.88 | 0.88 | 1.17 | | |
| ITA | 0.75 | 0.75 | 0.75 | 0.76 | 0.83 | 0.86 | 0.91 | 0.82 | 0.88 | 1.31 | |
| NLD | 0.77 | 0.84 | 0.78 | 0.83 | 0.92 | 0.94 | 0.91 | 0.87 | 0.88 | 0.85 | 4.77 |
| USA | 0.77 | 0.84 | 0.85 | 0.86 | 0.89 | 0.92 | 0.89 | 0.88 | 0.93 | 0.88 | 0.85 |
| 1.51 | | | | | | | | | | | |
| HUN | 0.84 | 0.78 | 0.81 | 0.79 | 0.88 | 0.84 | 0.89 | 0.84 | 0.84 | 0.83 | 0.83 |
| 0.83 | 0.97 | | | | | | | | | | |
| POL | 0.75 | 0.82 | 0.74 | 0.77 | 0.85 | 0.86 | 0.87 | 0.82 | 0.82 | 0.83 | 0.85 |
| 0.79 | 0.79 | 7.21 | | | | | | | | | |
| NZL | 0.83 | 0.81 | 0.77 | 0.82 | 0.82 | 0.85 | 0.83 | 0.83 | 0.90 | 0.82 | 0.82 |
| 0.88 | 0.83 | 0.77 | 0.38 | | | | | | | | |
| ZAF | 0.75 | 0.78 | 0.75 | 0.82 | 0.80 | 0.83 | 0.81 | 0.77 | 0.87 | 0.80 | 0.79 |
| 0.82 | 0.76 | 0.75 | 0.79 | 9.80 | | | | | | | |
| JPN | 0.81 | 0.90 | 0.91 | 0.91 | 0.89 | 0.93 | 0.93 | 0.90 | 0.84 | 0.87 | 0.88 |
| 0.87 | 0.86 | 0.86 | 0.81 | 0.83 | 1.48 | | | | | | |
| CZE | 0.81 | 0.87 | 0.89 | 0.82 | 0.89 | 0.85 | 0.79 | 0.84 | 0.76 | 0.75 | 0.76 |
| 0.79 | 0.85 | 0.75 | 0.77 | 0.80 | 0.84 | 15.53 | | | | | |
| EST | 0.74 | 0.80 | 0.76 | 0.73 | 0.77 | 0.80 | 0.79 | 0.76 | 0.76 | 0.76 | 0.76 |
| 0.78 | 0.78 | 0.78 | 0.75 | 0.73 | 0.79 | 0.76 | 12.55 | | | | |
| IRL | 0.76 | 0.78 | 0.75 | 0.80 | 0.83 | 0.87 | 0.88 | 0.83 | 0.96 | 0.90 | 0.85 |
| 0.91 | 0.81 | 0.80 | 0.87 | 0.85 | 0.82 | 0.74 | 0.75 | 1.12 | | | |
| KOR | 0.75 | 0.85 | 0.83 | 0.76 | 0.74 | 0.75 | 0.77 | 0.76 | 0.72 | 0.73 | 0.74 |
| 0.74 | 0.75 | 0.72 | 0.74 | 0.75 | 0.83 | 0.78 | 0.73 | 0.71 | 3.68 | | |
| SVN | 0.75 | 0.91 | 0.81 | 0.78 | 0.87 | 0.84 | 0.80 | 0.83 | 0.77 | 0.75 | 0.83 |
| 0.76 | 0.74 | 0.77 | 0.75 | 0.73 | 0.80 | 0.82 | 0.81 | 0.74 | 0.77 | 16.93 | |
| PRT | 0.76 | 0.78 | 0.75 | 0.75 | 0.79 | 0.82 | 0.85 | 0.80 | 0.85 | 0.83 | 0.82 |
| 0.80 | 0.80 | 0.80 | 0.75 | 0.76 | 0.77 | 0.75 | 0.75 | 0.81 | 0.75 | 0.75 | 1.62 |

HOL usu

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 5.97 | | | | | | | | | | |
| BEL | 0.69 | 1.38 | | | | | | | | | |
| CAN | 0.82 | 0.77 | 5.49 | | | | | | | | |
| CHE | 0.76 | 0.89 | 0.90 | 11.92 | | | | | | | |
| DEU | 0.76 | 0.79 | 0.91 | 0.91 | 11.60 | | | | | | |
| DFS | 0.71 | 0.86 | 0.82 | 0.91 | 0.82 | 11.80 | | | | | |
| ESP | 0.80 | 0.71 | 0.87 | 0.81 | 0.79 | 0.80 | 0.80 | | | | |
| FRA | 0.75 | 0.86 | 0.79 | 0.86 | 0.73 | 0.91 | 0.83 | 1.08 | | | |
| GBR | 0.83 | 0.68 | 0.84 | 0.80 | 0.75 | 0.83 | 0.92 | 0.89 | 1.22 | | |
| ITA | 0.75 | 0.72 | 0.84 | 0.80 | 0.79 | 0.80 | 0.91 | 0.82 | 0.88 | 1.45 | |
| NLD | 0.79 | 0.81 | 0.84 | 0.86 | 0.79 | 0.90 | 0.89 | 0.92 | 0.92 | 0.82 | 4.59 |
| USA | 0.79 | 0.71 | 0.85 | 0.79 | 0.75 | 0.86 | 0.91 | 0.89 | 0.94 | 0.89 | 0.90 |
| 1.50 | | | | | | | | | | | |
| HUN | 0.75 | 0.90 | 0.83 | 0.92 | 0.85 | 0.92 | 0.78 | 0.90 | 0.80 | 0.80 | 0.86 |
| 0.81 | 1.02 | | | | | | | | | | |
| POL | 0.73 | 0.78 | 0.84 | 0.86 | 0.90 | 0.82 | 0.77 | 0.73 | 0.71 | 0.79 | 0.75 |
| 0.74 | 0.83 | 9.68 | | | | | | | | | |
| NZL | 0.66 | 0.60 | 0.63 | 0.61 | 0.61 | 0.60 | 0.66 | 0.61 | 0.63 | 0.66 | 0.61 |
| 0.64 | 0.62 | 0.62 | 0.37 | | | | | | | | |
| ZAF | 0.83 | 0.66 | 0.70 | 0.68 | 0.63 | 0.77 | 0.80 | 0.78 | 0.85 | 0.76 | 0.80 |
| 0.85 | 0.76 | 0.67 | 0.65 | 10.22 | | | | | | | |
| JPN | 0.64 | 0.94 | 0.71 | 0.84 | 0.69 | 0.83 | 0.63 | 0.88 | 0.66 | 0.67 | 0.78 |
| 0.68 | 0.87 | 0.69 | 0.56 | 0.63 | 1.69 | | | | | | |
| CZE | 0.64 | 0.87 | 0.79 | 0.86 | 0.88 | 0.78 | 0.65 | 0.70 | 0.63 | 0.71 | 0.68 |
| 0.64 | 0.87 | 0.87 | 0.60 | 0.63 | 0.77 | 14.66 | | | | | |
| EST | 0.70 | 0.85 | 0.81 | 0.82 | 0.85 | 0.81 | 0.67 | 0.78 | 0.67 | 0.67 | 0.80 |
| 0.68 | 0.83 | 0.79 | 0.59 | 0.61 | 0.82 | 0.83 | 14.51 | | | | |
| IRL | 0.86 | 0.73 | 0.88 | 0.83 | 0.80 | 0.78 | 0.91 | 0.83 | 0.95 | 0.90 | 0.87 |
| 0.89 | 0.80 | 0.77 | 0.72 | 0.80 | 0.67 | 0.71 | 0.70 | 1.18 | | | |
| KOR | 0.73 | 0.73 | 0.85 | 0.80 | 0.81 | 0.70 | 0.75 | 0.65 | 0.64 | 0.78 | 0.65 |
| 0.72 | 0.76 | 0.82 | 0.61 | 0.64 | 0.67 | 0.76 | 0.65 | 0.71 | 2.91 | | |
| SVN | 0.67 | 0.77 | 0.82 | 0.78 | 0.87 | 0.72 | 0.68 | 0.63 | 0.63 | 0.64 | 0.64 |
| 0.63 | 0.70 | 0.79 | 0.62 | 0.60 | 0.65 | 0.87 | 0.80 | 0.71 | 0.70 | 20.48 | |
| PRT | 0.71 | 0.67 | 0.76 | 0.73 | 0.82 | 0.70 | 0.79 | 0.64 | 0.75 | 0.81 | 0.73 |
| 0.70 | 0.72 | 0.77 | 0.63 | 0.64 | 0.62 | 0.73 | 0.66 | 0.80 | 0.71 | 0.74 | 2.02 |

HOL ude

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|------|-------|-------|-------|-------|------|------|-------|------|------|
| USA | HUN | POL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT | |
| AUS | 4.15 | | | | | | | | | | |
| BEL | 0.95 | 1.43 | | | | | | | | | |
| CAN | 0.94 | 0.96 | 5.64 | | | | | | | | |
| CHE | 0.97 | 0.95 | 0.95 | 11.59 | | | | | | | |
| DEU | 0.94 | 0.96 | 0.98 | 0.96 | 12.99 | | | | | | |
| DFS | 0.93 | 0.95 | 0.97 | 0.96 | 0.97 | 11.71 | | | | | |
| ESP | 0.95 | 0.96 | 0.97 | 0.96 | 0.96 | 0.97 | 1.06 | | | | |
| FRA | 0.96 | 0.96 | 0.97 | 0.97 | 0.98 | 0.97 | 0.97 | 1.10 | | | |
| GBR | 0.95 | 0.96 | 0.97 | 0.95 | 0.96 | 0.95 | 0.96 | 0.96 | 1.16 | | |
| ITA | 0.94 | 0.94 | 0.97 | 0.95 | 0.96 | 0.96 | 0.98 | 0.97 | 0.95 | 1.39 | |
| NLD | 0.94 | 0.96 | 0.97 | 0.96 | 0.98 | 0.97 | 0.96 | 0.98 | 0.97 | 0.95 | 5.09 |
| USA | 0.94 | 0.95 | 0.96 | 0.96 | 0.96 | 0.97 | 0.97 | 0.97 | 0.97 | 0.96 | 0.97 |
| 1.48 | | | | | | | | | | | |
| HUN | 0.93 | 0.95 | 0.97 | 0.95 | 0.95 | 0.96 | 0.97 | 0.96 | 0.95 | 0.96 | 0.95 |
| 0.96 | 1.08 | | | | | | | | | | |
| POL | 0.94 | 0.95 | 0.94 | 0.95 | 0.96 | 0.95 | 0.95 | 0.96 | 0.94 | 0.95 | 0.95 |
| 0.94 | 0.94 | 9.21 | | | | | | | | | |
| ZAF | 0.94 | 0.95 | 0.96 | 0.93 | 0.96 | 0.94 | 0.94 | 0.95 | 0.98 | 0.93 | 0.95 |
| 0.96 | 0.95 | 0.93 | 11.40 | | | | | | | | |
| JPN | 0.95 | 0.95 | 0.98 | 0.96 | 0.96 | 0.97 | 0.98 | 0.97 | 0.96 | 0.97 | 0.96 |
| 0.97 | 0.96 | 0.94 | 0.94 | 1.32 | | | | | | | |
| CZE | 0.94 | 0.96 | 0.98 | 0.94 | 0.97 | 0.94 | 0.96 | 0.95 | 0.95 | 0.95 | 0.95 |
| 0.94 | 0.96 | 0.95 | 0.96 | 0.94 | 14.80 | | | | | | |
| EST | 0.91 | 0.92 | 0.94 | 0.91 | 0.93 | 0.94 | 0.94 | 0.91 | 0.92 | 0.92 | 0.94 |
| 0.93 | 0.93 | 0.93 | 0.91 | 0.92 | 0.94 | 12.96 | | | | | |
| IRL | 0.95 | 0.95 | 0.93 | 0.94 | 0.93 | 0.91 | 0.93 | 0.93 | 0.98 | 0.92 | 0.94 |
| 0.95 | 0.91 | 0.91 | 0.96 | 0.93 | 0.92 | 0.90 | 1.37 | | | | |
| KOR | 0.89 | 0.88 | 0.90 | 0.90 | 0.89 | 0.89 | 0.91 | 0.90 | 0.89 | 0.90 | 0.90 |
| 0.90 | 0.90 | 0.89 | 0.90 | 0.93 | 0.89 | 0.87 | 0.89 | 4.83 | | | |
| SVN | 0.90 | 0.93 | 0.93 | 0.91 | 0.95 | 0.92 | 0.93 | 0.92 | 0.91 | 0.93 | 0.93 |
| 0.90 | 0.92 | 0.93 | 0.91 | 0.91 | 0.95 | 0.91 | 0.88 | 0.89 | 16.77 | | |
| PRT | 0.90 | 0.93 | 0.92 | 0.90 | 0.92 | 0.91 | 0.91 | 0.90 | 0.91 | 0.92 | 0.91 |
| 0.90 | 0.92 | 0.90 | 0.92 | 0.91 | 0.94 | 0.90 | 0.90 | 0.90 | 0.90 | 1.74 | |

HOL ftp

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|------|------|-------|-------|-------|-------|------|------|-------|------|
| USA | HUN | POL | NZL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT |
| AUS | 5.42 | | | | | | | | | | |
| BEL | 0.95 | 1.40 | | | | | | | | | |
| CAN | 0.96 | 0.95 | 6.00 | | | | | | | | |
| CHE | 0.97 | 0.97 | 0.97 | 11.82 | | | | | | | |
| DEU | 0.95 | 0.94 | 0.98 | 0.96 | 13.68 | | | | | | |
| DFS | 0.92 | 0.96 | 0.97 | 0.95 | 0.96 | 10.83 | | | | | |
| ESP | 0.95 | 0.92 | 0.97 | 0.95 | 0.97 | 0.93 | 0.94 | | | | |
| FRA | 0.94 | 0.98 | 0.96 | 0.97 | 0.95 | 0.97 | 0.92 | 1.11 | | | |
| GBR | 0.95 | 0.90 | 0.97 | 0.94 | 0.96 | 0.93 | 0.97 | 0.90 | 1.21 | | |
| ITA | 0.84 | 0.84 | 0.88 | 0.84 | 0.86 | 0.87 | 0.86 | 0.84 | 0.89 | 1.22 | |
| NLD | 0.95 | 0.96 | 0.98 | 0.97 | 0.98 | 0.96 | 0.95 | 0.96 | 0.95 | 0.85 | 4.76 |
| USA | 0.88 | 0.87 | 0.93 | 0.88 | 0.92 | 0.93 | 0.93 | 0.87 | 0.95 | 0.89 | 0.91 |
| 1.40 | | | | | | | | | | | |
| HUN | 0.96 | 0.93 | 0.96 | 0.95 | 0.96 | 0.92 | 0.96 | 0.93 | 0.93 | 0.86 | 0.94 |
| 0.90 | 0.96 | | | | | | | | | | |
| POL | 0.90 | 0.88 | 0.94 | 0.91 | 0.94 | 0.91 | 0.93 | 0.89 | 0.93 | 0.86 | 0.93 |
| 0.90 | 0.92 | 9.12 | | | | | | | | | |
| NZL | 0.94 | 0.89 | 0.92 | 0.91 | 0.89 | 0.88 | 0.88 | 0.90 | 0.91 | 0.85 | 0.90 |
| 0.87 | 0.90 | 0.86 | 0.30 | | | | | | | | |
| ZAF | 0.95 | 0.92 | 0.95 | 0.94 | 0.94 | 0.92 | 0.94 | 0.93 | 0.94 | 0.86 | 0.94 |
| 0.90 | 0.95 | 0.89 | 0.90 | 10.14 | | | | | | | |
| JPN | 0.95 | 0.98 | 0.97 | 0.97 | 0.95 | 0.96 | 0.92 | 0.98 | 0.91 | 0.84 | 0.97 |
| 0.86 | 0.93 | 0.91 | 0.89 | 0.92 | 1.52 | | | | | | |
| CZE | 0.95 | 0.94 | 0.96 | 0.95 | 0.95 | 0.92 | 0.95 | 0.93 | 0.93 | 0.84 | 0.95 |
| 0.88 | 0.96 | 0.91 | 0.90 | 0.94 | 0.94 | 15.43 | | | | | |
| EST | 0.92 | 0.92 | 0.94 | 0.92 | 0.93 | 0.91 | 0.92 | 0.92 | 0.90 | 0.84 | 0.95 |
| 0.87 | 0.91 | 0.91 | 0.86 | 0.88 | 0.93 | 0.93 | 13.16 | | | | |
| IRL | 0.95 | 0.89 | 0.96 | 0.93 | 0.95 | 0.92 | 0.94 | 0.90 | 0.98 | 0.85 | 0.93 |
| 0.92 | 0.92 | 0.90 | 0.92 | 0.92 | 0.90 | 0.90 | 0.88 | 1.44 | | | |
| KOR | 0.92 | 0.93 | 0.91 | 0.93 | 0.91 | 0.92 | 0.91 | 0.91 | 0.88 | 0.84 | 0.90 |
| 0.85 | 0.93 | 0.87 | 0.85 | 0.92 | 0.92 | 0.92 | 0.87 | 0.87 | 3.52 | | |
| SVN | 0.94 | 0.94 | 0.96 | 0.95 | 0.96 | 0.94 | 0.96 | 0.93 | 0.94 | 0.85 | 0.96 |
| 0.90 | 0.94 | 0.91 | 0.88 | 0.89 | 0.94 | 0.92 | 0.93 | 0.94 | 0.90 | 17.09 | |
| PRT | 0.91 | 0.89 | 0.92 | 0.90 | 0.94 | 0.88 | 0.93 | 0.87 | 0.93 | 0.85 | 0.90 |
| 0.88 | 0.92 | 0.92 | 0.85 | 0.88 | 0.88 | 0.92 | 0.89 | 0.92 | 0.88 | 0.93 | 1.74 |

HOL ftl

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| USA | HUN | POL | ZAF | JPN | CZE | EST | IRL | KOR | SVN | PRT | |
| AUS | 5.85 | | | | | | | | | | |
| BEL | 0.95 | 1.51 | | | | | | | | | |
| CAN | 0.95 | 0.93 | 5.60 | | | | | | | | |
| CHE | 0.93 | 0.96 | 0.91 | 11.44 | | | | | | | |
| DEU | 0.95 | 0.98 | 0.95 | 0.96 | 13.52 | | | | | | |
| DFS | 0.95 | 0.97 | 0.93 | 0.98 | 0.97 | 10.90 | | | | | |
| ESP | 0.94 | 0.98 | 0.93 | 0.96 | 0.98 | 0.97 | 1.10 | | | | |
| FRA | 0.95 | 0.91 | 0.98 | 0.90 | 0.93 | 0.92 | 0.92 | 1.07 | | | |
| GBR | 0.96 | 0.97 | 0.96 | 0.94 | 0.98 | 0.96 | 0.97 | 0.94 | 1.31 | | |
| ITA | 0.90 | 0.92 | 0.93 | 0.91 | 0.93 | 0.93 | 0.93 | 0.92 | 0.96 | 1.59 | |
| NLD | 0.95 | 0.98 | 0.93 | 0.96 | 0.98 | 0.98 | 0.98 | 0.91 | 0.97 | 0.92 | 4.99 |
| USA | 0.95 | 0.95 | 0.96 | 0.93 | 0.96 | 0.96 | 0.96 | 0.94 | 0.97 | 0.95 | 0.95 |
| 1.46 | | | | | | | | | | | |
| HUN | 0.91 | 0.96 | 0.90 | 0.96 | 0.94 | 0.95 | 0.95 | 0.89 | 0.92 | 0.90 | 0.95 |
| 0.91 | 1.06 | | | | | | | | | | |
| POL | 0.94 | 0.96 | 0.92 | 0.96 | 0.97 | 0.97 | 0.96 | 0.90 | 0.95 | 0.92 | 0.96 |
| 0.94 | 0.96 | 11.50 | | | | | | | | | |
| ZAF | 0.94 | 0.94 | 0.90 | 0.92 | 0.93 | 0.94 | 0.95 | 0.90 | 0.93 | 0.91 | 0.94 |
| 0.92 | 0.93 | 0.94 | 10.56 | | | | | | | | |
| JPN | 0.96 | 0.98 | 0.94 | 0.97 | 0.98 | 0.98 | 0.98 | 0.92 | 0.97 | 0.94 | 0.98 |
| 0.97 | 0.95 | 0.97 | 0.95 | 1.44 | | | | | | | |
| CZE | 0.94 | 0.96 | 0.92 | 0.96 | 0.97 | 0.97 | 0.97 | 0.90 | 0.96 | 0.91 | 0.97 |
| 0.95 | 0.96 | 0.98 | 0.94 | 0.98 | 16.41 | | | | | | |
| EST | 0.92 | 0.93 | 0.91 | 0.94 | 0.95 | 0.96 | 0.94 | 0.90 | 0.92 | 0.90 | 0.94 |
| 0.91 | 0.94 | 0.96 | 0.89 | 0.94 | 0.95 | 13.91 | | | | | |
| IRL | 0.96 | 0.96 | 0.96 | 0.93 | 0.97 | 0.95 | 0.96 | 0.95 | 0.99 | 0.94 | 0.96 |
| 0.96 | 0.91 | 0.95 | 0.92 | 0.96 | 0.95 | 0.92 | 1.79 | | | | |
| KOR | 0.92 | 0.94 | 0.90 | 0.94 | 0.94 | 0.94 | 0.95 | 0.89 | 0.93 | 0.89 | 0.95 |
| 0.92 | 0.93 | 0.94 | 0.91 | 0.96 | 0.95 | 0.90 | 0.91 | 4.75 | | | |
| SVN | 0.91 | 0.94 | 0.90 | 0.95 | 0.95 | 0.95 | 0.95 | 0.90 | 0.94 | 0.92 | 0.95 |
| 0.92 | 0.93 | 0.95 | 0.90 | 0.95 | 0.94 | 0.93 | 0.94 | 0.91 | 17.58 | | |
| PRT | 0.90 | 0.95 | 0.91 | 0.92 | 0.95 | 0.95 | 0.94 | 0.90 | 0.94 | 0.91 | 0.94 |
| 0.94 | 0.92 | 0.95 | 0.90 | 0.94 | 0.95 | 0.92 | 0.94 | 0.92 | 0.90 | 1.98 | |

HOL rtp

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|-------|------|------|-------|-------|-------|------|-------|------|------|------|
| USA | POL | NZL | JPN | CZE | EST | IRL | KOR | SVN | PRT | ZAF | HUN |
| AUS | 5.57 | | | | | | | | | | |
| BEL | 0.96 | 1.40 | | | | | | | | | |
| CAN | 0.96 | 0.96 | 5.98 | | | | | | | | |
| CHE | 0.96 | 0.97 | 0.98 | 11.93 | | | | | | | |
| DEU | 0.94 | 0.96 | 0.97 | 0.97 | 13.83 | | | | | | |
| DFS | 0.93 | 0.95 | 0.96 | 0.96 | 0.97 | 11.03 | | | | | |
| ESP | 0.94 | 0.96 | 0.98 | 0.96 | 0.98 | 0.97 | 0.90 | | | | |
| FRA | 0.96 | 0.97 | 0.98 | 0.98 | 0.97 | 0.97 | 0.98 | 1.06 | | | |
| GBR | 0.96 | 0.96 | 0.97 | 0.96 | 0.97 | 0.97 | 0.97 | 0.98 | 1.28 | | |
| ITA | 0.88 | 0.90 | 0.90 | 0.90 | 0.94 | 0.93 | 0.93 | 0.93 | 0.92 | 1.27 | |
| NLD | 0.95 | 0.96 | 0.98 | 0.97 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.92 | 4.77 |
| USA | 0.92 | 0.93 | 0.95 | 0.93 | 0.95 | 0.97 | 0.96 | 0.94 | 0.97 | 0.91 | 0.96 |
| 1.61 | | | | | | | | | | | |
| POL | 0.90 | 0.92 | 0.94 | 0.92 | 0.97 | 0.95 | 0.96 | 0.95 | 0.94 | 0.92 | 0.95 |
| 0.92 | 10.15 | | | | | | | | | | |
| NZL | 0.96 | 0.95 | 0.95 | 0.94 | 0.94 | 0.92 | 0.93 | 0.95 | 0.95 | 0.89 | 0.94 |
| 0.91 | 0.92 | 0.46 | | | | | | | | | |
| JPN | 0.96 | 0.97 | 0.99 | 0.97 | 0.97 | 0.97 | 0.98 | 0.98 | 0.97 | 0.92 | 0.98 |
| 0.95 | 0.95 | 0.95 | 1.57 | | | | | | | | |
| CZE | 0.92 | 0.96 | 0.94 | 0.94 | 0.96 | 0.95 | 0.95 | 0.94 | 0.95 | 0.91 | 0.93 |
| 0.94 | 0.95 | 0.93 | 0.94 | 14.71 | | | | | | | |
| EST | 0.92 | 0.93 | 0.93 | 0.92 | 0.96 | 0.92 | 0.94 | 0.93 | 0.94 | 0.90 | 0.95 |
| 0.91 | 0.93 | 0.91 | 0.93 | 0.93 | 13.13 | | | | | | |
| IRL | 0.94 | 0.95 | 0.96 | 0.95 | 0.95 | 0.94 | 0.95 | 0.96 | 0.97 | 0.90 | 0.95 |
| 0.93 | 0.91 | 0.94 | 0.96 | 0.91 | 0.90 | 1.34 | | | | | |
| KOR | 0.89 | 0.91 | 0.93 | 0.92 | 0.93 | 0.93 | 0.95 | 0.93 | 0.90 | 0.93 | 0.93 |
| 0.92 | 0.91 | 0.90 | 0.94 | 0.89 | 0.87 | 0.91 | 2.41 | | | | |
| SVN | 0.91 | 0.94 | 0.94 | 0.95 | 0.96 | 0.93 | 0.96 | 0.95 | 0.94 | 0.91 | 0.95 |
| 0.92 | 0.92 | 0.92 | 0.93 | 0.92 | 0.92 | 0.92 | 0.93 | 14.96 | | | |
| PRT | 0.89 | 0.92 | 0.93 | 0.91 | 0.93 | 0.93 | 0.93 | 0.92 | 0.94 | 0.89 | 0.91 |
| 0.92 | 0.93 | 0.91 | 0.93 | 0.91 | 0.89 | 0.90 | 0.89 | 0.92 | 1.76 | | |
| ZAF | 0.92 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.87 | 0.89 | 0.89 | 0.89 | 0.89 | 7.07 | |
| HUN | 0.91 | 0.95 | 0.94 | 0.94 | 0.97 | 0.96 | 0.97 | 0.96 | 0.96 | 0.91 | 0.96 |
| 0.94 | 0.96 | 0.92 | 0.94 | 0.95 | 0.95 | 0.93 | 0.89 | 0.94 | 0.93 | 0.89 | 1.04 |

| HOL | ocs | | | | | | | | | | |
|------|------|------|------|-------|-------|-------|------|------|-------|------|------|
| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
| USA | HUN | POL | NZL | JPN | CZE | EST | IRL | KOR | SVN | PRT | |
| AUS | 6.36 | | | | | | | | | | |
| BEL | 0.58 | 1.20 | | | | | | | | | |
| CAN | 0.56 | 0.74 | 5.51 | | | | | | | | |
| CHE | 0.55 | 0.78 | 0.92 | 11.68 | | | | | | | |
| DEU | 0.60 | 0.72 | 0.86 | 0.84 | 12.95 | | | | | | |
| DFS | 0.64 | 0.73 | 0.79 | 0.80 | 0.88 | 10.33 | | | | | |
| ESP | 0.65 | 0.75 | 0.79 | 0.79 | 0.86 | 0.87 | 0.81 | | | | |
| FRA | 0.56 | 0.75 | 0.79 | 0.87 | 0.86 | 0.87 | 0.88 | 1.11 | | | |
| GBR | 0.67 | 0.74 | 0.85 | 0.90 | 0.93 | 0.89 | 0.87 | 0.90 | 0.92 | | |
| ITA | 0.57 | 0.72 | 0.82 | 0.82 | 0.83 | 0.82 | 0.86 | 0.87 | 0.85 | 0.81 | |
| NLD | 0.61 | 0.74 | 0.78 | 0.81 | 0.89 | 0.89 | 0.87 | 0.85 | 0.89 | 0.79 | 3.03 |
| USA | 0.61 | 0.73 | 0.84 | 0.85 | 0.89 | 0.88 | 0.86 | 0.86 | 0.91 | 0.84 | 0.86 |
| 0.90 | | | | | | | | | | | |
| HUN | 0.55 | 0.75 | 0.81 | 0.80 | 0.84 | 0.75 | 0.77 | 0.81 | 0.83 | 0.80 | 0.75 |
| 0.79 | 1.07 | | | | | | | | | | |
| POL | 0.53 | 0.72 | 0.70 | 0.72 | 0.70 | 0.72 | 0.75 | 0.73 | 0.73 | 0.73 | 0.74 |
| 0.72 | 0.74 | 6.85 | | | | | | | | | |
| NZL | 0.78 | 0.56 | 0.64 | 0.60 | 0.63 | 0.57 | 0.62 | 0.56 | 0.70 | 0.55 | 0.64 |
| 0.66 | 0.59 | 0.54 | 0.29 | | | | | | | | |
| JPN | 0.55 | 0.79 | 0.89 | 0.93 | 0.80 | 0.80 | 0.80 | 0.85 | 0.83 | 0.84 | 0.80 |
| 0.86 | 0.75 | 0.74 | 0.56 | 0.70 | | | | | | | |
| CZE | 0.63 | 0.72 | 0.85 | 0.80 | 0.88 | 0.78 | 0.79 | 0.77 | 0.83 | 0.77 | 0.78 |
| 0.80 | 0.85 | 0.70 | 0.70 | 0.74 | 13.91 | | | | | | |
| EST | 0.58 | 0.74 | 0.77 | 0.74 | 0.80 | 0.75 | 0.75 | 0.74 | 0.75 | 0.74 | 0.76 |
| 0.74 | 0.75 | 0.71 | 0.62 | 0.75 | 0.78 | 12.77 | | | | | |
| IRL | 0.63 | 0.54 | 0.72 | 0.69 | 0.76 | 0.69 | 0.68 | 0.63 | 0.77 | 0.67 | 0.64 |
| 0.67 | 0.69 | 0.52 | 0.60 | 0.59 | 0.73 | 0.65 | 1.57 | | | | |
| KOR | 0.55 | 0.69 | 0.69 | 0.72 | 0.70 | 0.70 | 0.75 | 0.71 | 0.70 | 0.72 | 0.73 |
| 0.71 | 0.72 | 0.71 | 0.54 | 0.73 | 0.67 | 0.74 | 0.53 | 6.93 | | | |
| SVN | 0.58 | 0.81 | 0.76 | 0.77 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| 0.76 | 0.77 | 0.76 | 0.61 | 0.77 | 0.76 | 0.79 | 0.59 | 0.78 | 19.35 | | |
| PRT | 0.57 | 0.75 | 0.75 | 0.75 | 0.78 | 0.79 | 0.78 | 0.76 | 0.81 | 0.76 | 0.78 |
| 0.75 | 0.75 | 0.75 | 0.56 | 0.75 | 0.75 | 0.77 | 0.58 | 0.75 | 0.76 | 0.30 | |

HOL ous

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|------|------|-------|-------|-------|------|-------|------|------|------|
| USA | HUN | POL | NZL | JPN | CZE | EST | IRL | SVN | PRT | | |
| AUS | 4.28 | | | | | | | | | | |
| BEL | 0.56 | 1.30 | | | | | | | | | |
| CAN | 0.65 | 0.78 | 5.38 | | | | | | | | |
| CHE | 0.69 | 0.86 | 0.95 | 11.73 | | | | | | | |
| DEU | 0.64 | 0.79 | 0.90 | 0.91 | 13.50 | | | | | | |
| DFS | 0.49 | 0.81 | 0.85 | 0.90 | 0.89 | 12.91 | | | | | |
| ESP | 0.70 | 0.70 | 0.84 | 0.86 | 0.84 | 0.76 | 0.88 | | | | |
| FRA | 0.55 | 0.82 | 0.86 | 0.93 | 0.90 | 0.95 | 0.81 | 1.03 | | | |
| GBR | 0.79 | 0.69 | 0.84 | 0.86 | 0.86 | 0.70 | 0.89 | 0.76 | 1.09 | | |
| ITA | 0.64 | 0.72 | 0.88 | 0.91 | 0.86 | 0.84 | 0.92 | 0.89 | 0.85 | 1.03 | |
| NLD | 0.59 | 0.83 | 0.89 | 0.93 | 0.90 | 0.91 | 0.83 | 0.93 | 0.80 | 0.86 | 4.83 |
| USA | 0.68 | 0.77 | 0.93 | 0.95 | 0.90 | 0.86 | 0.90 | 0.89 | 0.89 | 0.94 | 0.89 |
| 1.14 | | | | | | | | | | | |
| HUN | 0.59 | 0.81 | 0.85 | 0.88 | 0.88 | 0.83 | 0.82 | 0.84 | 0.78 | 0.83 | 0.78 |
| 0.83 | 1.18 | | | | | | | | | | |
| POL | 0.66 | 0.79 | 0.74 | 0.78 | 0.79 | 0.71 | 0.71 | 0.73 | 0.77 | 0.72 | 0.71 |
| 0.74 | 0.72 | 7.42 | | | | | | | | | |
| NZL | 0.80 | 0.74 | 0.84 | 0.88 | 0.81 | 0.75 | 0.75 | 0.81 | 0.82 | 0.76 | 0.82 |
| 0.85 | 0.75 | 0.73 | 0.40 | | | | | | | | |
| JPN | 0.71 | 0.83 | 0.93 | 0.93 | 0.89 | 0.80 | 0.81 | 0.84 | 0.87 | 0.88 | 0.86 |
| 0.93 | 0.79 | 0.81 | 0.82 | 0.76 | | | | | | | |
| CZE | 0.58 | 0.84 | 0.89 | 0.91 | 0.94 | 0.91 | 0.80 | 0.92 | 0.77 | 0.86 | 0.88 |
| 0.85 | 0.91 | 0.77 | 0.79 | 0.85 | 13.90 | | | | | | |
| EST | 0.56 | 0.80 | 0.83 | 0.86 | 0.86 | 0.91 | 0.77 | 0.90 | 0.71 | 0.82 | 0.88 |
| 0.85 | 0.80 | 0.72 | 0.73 | 0.79 | 0.90 | 12.67 | | | | | |
| IRL | 0.83 | 0.62 | 0.76 | 0.79 | 0.79 | 0.58 | 0.85 | 0.69 | 0.96 | 0.79 | 0.70 |
| 0.83 | 0.74 | 0.75 | 0.83 | 0.80 | 0.71 | 0.65 | 1.04 | | | | |
| SVN | 0.59 | 0.73 | 0.71 | 0.73 | 0.71 | 0.71 | 0.71 | 0.71 | 0.72 | 0.71 | 0.71 |
| 0.71 | 0.72 | 0.77 | 0.65 | 0.72 | 0.71 | 0.74 | 0.67 | 20.01 | | | |
| PRT | 0.69 | 0.70 | 0.77 | 0.78 | 0.78 | 0.70 | 0.77 | 0.73 | 0.79 | 0.75 | 0.76 |
| 0.78 | 0.71 | 0.70 | 0.72 | 0.78 | 0.78 | 0.72 | 0.73 | 0.72 | 0.46 | | |

HOL ofl

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD |
|------|------|-------|------|-------|-------|-------|-------|------|------|------|------|
| USA | HUN | POL | JPN | CZE | EST | IRL | SVN | PRT | | | |
| AUS | 5.82 | | | | | | | | | | |
| BEL | 0.44 | 1.74 | | | | | | | | | |
| CAN | 0.38 | 0.73 | 6.22 | | | | | | | | |
| CHE | 0.40 | 0.79 | 0.90 | 11.64 | | | | | | | |
| DEU | 0.38 | 0.74 | 0.85 | 0.77 | 11.81 | | | | | | |
| DFS | 0.38 | 0.66 | 0.87 | 0.78 | 0.79 | 13.01 | | | | | |
| ESP | 0.40 | 0.73 | 0.82 | 0.76 | 0.72 | 0.82 | 0.93 | | | | |
| FRA | 0.38 | 0.79 | 0.68 | 0.71 | 0.74 | 0.64 | 0.75 | 1.08 | | | |
| GBR | 0.38 | 0.73 | 0.77 | 0.79 | 0.75 | 0.72 | 0.81 | 0.83 | 1.22 | | |
| ITA | 0.39 | 0.71 | 0.72 | 0.69 | 0.72 | 0.62 | 0.69 | 0.79 | 0.71 | 1.69 | |
| NLD | 0.39 | 0.83 | 0.68 | 0.68 | 0.74 | 0.64 | 0.66 | 0.82 | 0.76 | 0.68 | 5.21 |
| USA | 0.40 | 0.72 | 0.82 | 0.77 | 0.74 | 0.66 | 0.72 | 0.72 | 0.74 | 0.77 | 0.68 |
| 1.55 | | | | | | | | | | | |
| HUN | 0.47 | 0.72 | 0.64 | 0.64 | 0.67 | 0.61 | 0.65 | 0.76 | 0.65 | 0.75 | 0.69 |
| 0.72 | 1.14 | | | | | | | | | | |
| POL | 0.47 | 0.75 | 0.72 | 0.70 | 0.73 | 0.62 | 0.65 | 0.69 | 0.65 | 0.74 | 0.64 |
| 0.79 | 0.72 | 10.76 | | | | | | | | | |
| JPN | 0.39 | 0.65 | 0.87 | 0.81 | 0.77 | 0.71 | 0.68 | 0.64 | 0.65 | 0.71 | 0.63 |
| 0.86 | 0.63 | 0.75 | 0.63 | | | | | | | | |
| CZE | 0.45 | 0.77 | 0.81 | 0.72 | 0.80 | 0.64 | 0.65 | 0.68 | 0.67 | 0.77 | 0.65 |
| 0.84 | 0.80 | 0.88 | 0.79 | 18.41 | | | | | | | |
| EST | 0.42 | 0.67 | 0.64 | 0.62 | 0.66 | 0.64 | 0.67 | 0.70 | 0.64 | 0.66 | 0.72 |
| 0.66 | 0.67 | 0.66 | 0.64 | 0.67 | 15.22 | | | | | | |
| IRL | 0.59 | 0.75 | 0.77 | 0.82 | 0.70 | 0.69 | 0.73 | 0.68 | 0.83 | 0.70 | 0.65 |
| 0.70 | 0.69 | 0.65 | 0.70 | 0.69 | 0.48 | 1.51 | | | | | |
| SVN | 0.43 | 0.70 | 0.68 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 | 0.70 |
| 0.85 | 0.76 | 0.74 | 0.79 | 0.80 | 0.72 | 0.60 | 25.34 | | | | |
| PRT | 0.40 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.72 | 0.66 | 0.71 | 0.70 |
| 0.67 | 0.71 | 0.65 | 0.65 | 0.65 | 0.72 | 0.53 | 0.66 | 0.20 | | | |

HOL loc

| | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA |
|-------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| CZE | IRL | KOR | SVN | PRT | EST | HUN | | | | | |
| BEL | 1.90 | | | | | | | | | | |
| CAN | 0.84 | 6.58 | | | | | | | | | |
| CHE | 0.56 | 0.61 | 12.36 | | | | | | | | |
| DEU | 0.62 | 0.73 | 0.64 | 11.76 | | | | | | | |
| DFS | 0.85 | 0.91 | 0.52 | 0.65 | 12.91 | | | | | | |
| ESP | 0.56 | 0.71 | 0.69 | 0.74 | 0.71 | 0.97 | | | | | |
| FRA | 0.77 | 0.76 | 0.70 | 0.80 | 0.69 | 0.75 | 1.08 | | | | |
| GBR | 0.62 | 0.66 | 0.86 | 0.78 | 0.61 | 0.78 | 0.84 | 1.28 | | | |
| ITA | 0.57 | 0.67 | 0.65 | 0.71 | 0.54 | 0.73 | 0.76 | 0.74 | 1.96 | | |
| NLD | 0.83 | 0.78 | 0.64 | 0.83 | 0.77 | 0.68 | 0.81 | 0.74 | 0.62 | 4.75 | |
| USA | 0.52 | 0.70 | 0.51 | 0.75 | 0.63 | 0.70 | 0.73 | 0.68 | 0.78 | 0.59 | 1.55 |
| CZE | 0.46 | 0.54 | 0.57 | 0.66 | 0.50 | 0.57 | 0.61 | 0.62 | 0.67 | 0.50 | 0.64 |
| 18.84 | | | | | | | | | | | |
| IRL | 0.62 | 0.64 | 0.61 | 0.71 | 0.58 | 0.71 | 0.73 | 0.77 | 0.64 | 0.67 | 0.65 |
| 0.49 | 1.78 | | | | | | | | | | |
| KOR | 0.61 | 0.76 | 0.63 | 0.57 | 0.71 | 0.75 | 0.70 | 0.69 | 0.66 | 0.62 | 0.61 |
| 0.68 | 0.59 | 10.68 | | | | | | | | | |
| SVN | 0.59 | 0.63 | 0.58 | 0.63 | 0.61 | 0.58 | 0.70 | 0.63 | 0.58 | 0.69 | 0.62 |
| 0.59 | 0.53 | 0.71 | 29.82 | | | | | | | | |
| PRT | 0.50 | 0.50 | 0.51 | 0.62 | 0.50 | 0.58 | 0.51 | 0.60 | 0.54 | 0.51 | 0.50 |
| 0.64 | 0.51 | 0.65 | 0.57 | 2.78 | | | | | | | |
| EST | 0.54 | 0.54 | 0.57 | 0.53 | 0.54 | 0.53 | 0.59 | 0.54 | 0.54 | 0.54 | 0.54 |
| 0.58 | 0.56 | 0.61 | 0.73 | 0.54 | 14.00 | | | | | | |
| HUN | 0.67 | 0.68 | 0.54 | 0.67 | 0.69 | 0.57 | 0.75 | 0.67 | 0.63 | 0.65 | 0.60 |
| 0.82 | 0.56 | 0.72 | 0.68 | 0.61 | 0.64 | 1.13 | | | | | |

HOL bcs

| | BEL | CHE | DEU | DFS | FRA | GBR | ITA | NLD | USA | CZE | JPN |
|------|------|-------|-------|-------|-------|-------|------|------|------|-------|------|
| IRL | KOR | CAN | PRT | ESP | SVN | EST | HUN | | | | |
| BEL | 1.05 | | | | | | | | | | |
| CHE | 0.74 | 11.68 | | | | | | | | | |
| DEU | 0.75 | 0.90 | 13.14 | | | | | | | | |
| DFS | 0.76 | 0.88 | 0.95 | 12.18 | | | | | | | |
| FRA | 0.75 | 0.92 | 0.93 | 0.95 | 1.00 | | | | | | |
| GBR | 0.75 | 0.91 | 0.89 | 0.89 | 0.93 | 1.21 | | | | | |
| ITA | 0.75 | 0.89 | 0.95 | 0.95 | 0.95 | 0.89 | 6.70 | | | | |
| NLD | 0.75 | 0.93 | 0.95 | 0.95 | 0.94 | 0.90 | 0.93 | 4.86 | | | |
| USA | 0.79 | 0.74 | 0.75 | 0.77 | 0.76 | 0.75 | 0.75 | 0.75 | 1.38 | | |
| CZE | 0.76 | 0.86 | 0.96 | 0.94 | 0.91 | 0.87 | 0.93 | 0.93 | 0.74 | 14.92 | |
| JPN | 0.76 | 0.92 | 0.95 | 0.96 | 0.96 | 0.92 | 0.95 | 0.94 | 0.78 | 0.93 | 1.82 |
| IRL | 0.73 | 0.89 | 0.83 | 0.83 | 0.89 | 0.96 | 0.82 | 0.87 | 0.73 | 0.81 | 0.87 |
| 1.09 | | | | | | | | | | | |
| KOR | 0.73 | 0.77 | 0.80 | 0.83 | 0.84 | 0.80 | 0.84 | 0.77 | 0.73 | 0.80 | 0.84 |
| 0.75 | 2.57 | | | | | | | | | | |
| CAN | 0.75 | 0.92 | 0.94 | 0.93 | 0.94 | 0.95 | 0.93 | 0.94 | 0.77 | 0.93 | 0.97 |
| 0.91 | 0.83 | 6.08 | | | | | | | | | |
| PRT | 0.76 | 0.83 | 0.87 | 0.85 | 0.87 | 0.85 | 0.85 | 0.87 | 0.75 | 0.85 | 0.86 |
| 0.80 | 0.83 | 0.87 | 2.21 | | | | | | | | |
| ESP | 0.77 | 0.88 | 0.94 | 0.94 | 0.95 | 0.94 | 0.93 | 0.93 | 0.75 | 0.93 | 0.95 |
| 0.88 | 0.87 | 0.95 | 0.89 | 1.08 | | | | | | | |
| SVN | 0.77 | 0.80 | 0.87 | 0.88 | 0.81 | 0.76 | 0.84 | 0.87 | 0.76 | 0.87 | 0.84 |
| 0.77 | 0.78 | 0.81 | 0.77 | 0.85 | 21.96 | | | | | | |
| EST | 0.78 | 0.84 | 0.86 | 0.86 | 0.84 | 0.78 | 0.86 | 0.87 | 0.77 | 0.83 | 0.88 |
| 0.79 | 0.79 | 0.82 | 0.78 | 0.77 | 0.82 | 13.07 | | | | | |
| HUN | 0.76 | 0.89 | 0.94 | 0.90 | 0.91 | 0.88 | 0.92 | 0.90 | 0.75 | 0.94 | 0.91 |
| 0.81 | 0.81 | 0.91 | 0.83 | 0.91 | 0.85 | 0.80 | 0.96 | | | | |

JER sta

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|------|------|
| AUS | 6.19 | | | | | | | | |
| CAN | 0.86 | 6.44 | | | | | | | |
| DFS | 0.88 | 0.96 | 11.84 | | | | | | |
| GBR | 0.89 | 0.95 | 0.94 | 1.01 | | | | | |
| ITA | 0.89 | 0.94 | 0.92 | 0.95 | 1.19 | | | | |
| NZL | 0.89 | 0.86 | 0.88 | 0.92 | 0.90 | 0.37 | | | |
| USA | 0.89 | 0.97 | 0.95 | 0.97 | 0.93 | 0.90 | 1.30 | | |
| ZAF | 0.86 | 0.87 | 0.86 | 0.94 | 0.88 | 0.93 | 0.89 | 9.13 | |
| NLD | 0.87 | 0.96 | 0.97 | 0.94 | 0.92 | 0.87 | 0.93 | 0.88 | 4.93 |

JER cwi

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|------|------|
| AUS | 5.66 | | | | | | | | |
| CAN | 0.69 | 6.56 | | | | | | | |
| DFS | 0.81 | 0.83 | 15.49 | | | | | | |
| GBR | 0.78 | 0.90 | 0.82 | 1.59 | | | | | |
| ITA | 0.65 | 0.84 | 0.71 | 0.73 | 1.34 | | | | |
| NZL | 0.81 | 0.67 | 0.69 | 0.81 | 0.66 | 0.36 | | | |
| USA | 0.75 | 0.91 | 0.80 | 0.83 | 0.88 | 0.65 | 0.89 | | |
| ZAF | 0.74 | 0.83 | 0.73 | 0.85 | 0.73 | 0.77 | 0.80 | 8.84 | |
| NLD | 0.70 | 0.89 | 0.90 | 0.88 | 0.74 | 0.67 | 0.85 | 0.79 | 4.09 |

JER bde

| | AUS | CAN | DFS | GBR | ITA | NZL | ZAF | NLD | USA |
|-----|------|------|-------|------|------|------|------|------|------|
| AUS | 5.16 | | | | | | | | |
| CAN | 0.76 | 5.87 | | | | | | | |
| DFS | 0.85 | 0.86 | 13.62 | | | | | | |
| GBR | 0.74 | 0.84 | 0.83 | 1.53 | | | | | |
| ITA | 0.67 | 0.73 | 0.74 | 0.84 | 1.40 | | | | |
| NZL | 0.76 | 0.70 | 0.71 | 0.71 | 0.71 | 0.36 | | | |
| ZAF | 0.84 | 0.75 | 0.84 | 0.80 | 0.75 | 0.77 | 9.25 | | |
| NLD | 0.71 | 0.83 | 0.83 | 0.89 | 0.86 | 0.68 | 0.78 | 3.09 | |
| USA | 0.71 | 0.72 | 0.75 | 0.78 | 0.89 | 0.71 | 0.73 | 0.88 | 0.89 |

JER ang

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|------|
| AUS | 6.16 | | | | | | | |
| CAN | 0.61 | 7.27 | | | | | | |
| DFS | 0.69 | 0.79 | 13.24 | | | | | |
| GBR | 0.83 | 0.75 | 0.87 | 1.10 | | | | |
| ITA | 0.72 | 0.82 | 0.82 | 0.88 | 1.30 | | | |
| USA | 0.78 | 0.82 | 0.88 | 0.86 | 0.80 | 0.94 | | |
| ZAF | 0.65 | 0.63 | 0.74 | 0.83 | 0.73 | 0.74 | 9.08 | |
| NLD | 0.75 | 0.73 | 0.66 | 0.78 | 0.72 | 0.68 | 0.64 | 4.10 |

JER ran

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|------|------|
| AUS | 6.17 | | | | | | | | |
| CAN | 0.91 | 5.61 | | | | | | | |
| DFS | 0.91 | 0.96 | 11.46 | | | | | | |
| GBR | 0.96 | 0.95 | 0.96 | 1.19 | | | | | |
| ITA | 0.89 | 0.96 | 0.94 | 0.93 | 1.44 | | | | |
| NZL | 0.97 | 0.90 | 0.90 | 0.93 | 0.90 | 0.30 | | | |
| USA | 0.92 | 0.95 | 0.95 | 0.97 | 0.93 | 0.91 | 1.06 | | |
| ZAF | 0.94 | 0.91 | 0.91 | 0.96 | 0.91 | 0.91 | 0.92 | 9.50 | |
| NLD | 0.92 | 0.96 | 0.96 | 0.96 | 0.93 | 0.89 | 0.95 | 0.93 | 4.87 |

JER rwi

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|------|------|
| AUS | 6.09 | | | | | | | | |
| CAN | 0.87 | 6.48 | | | | | | | |
| DFS | 0.81 | 0.90 | 12.03 | | | | | | |
| GBR | 0.82 | 0.94 | 0.88 | 1.35 | | | | | |
| ITA | 0.77 | 0.84 | 0.82 | 0.85 | 1.48 | | | | |
| NZL | 0.89 | 0.87 | 0.81 | 0.82 | 0.80 | 0.29 | | | |
| USA | 0.80 | 0.84 | 0.83 | 0.86 | 0.85 | 0.78 | 0.77 | | |
| ZAF | 0.81 | 0.81 | 0.82 | 0.83 | 0.81 | 0.80 | 0.81 | 9.53 | |
| NLD | 0.87 | 0.92 | 0.91 | 0.86 | 0.79 | 0.83 | 0.78 | 0.80 | 4.25 |

JER rls

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|-------|------|
| AUS | 7.26 | | | | | | | | |
| CAN | 0.71 | 5.90 | | | | | | | |
| DFS | 0.71 | 0.94 | 12.75 | | | | | | |
| GBR | 0.77 | 0.83 | 0.79 | 1.71 | | | | | |
| ITA | 0.69 | 0.82 | 0.82 | 0.79 | 1.53 | | | | |
| NZL | 0.73 | 0.72 | 0.72 | 0.77 | 0.74 | 0.12 | | | |
| USA | 0.73 | 0.92 | 0.92 | 0.89 | 0.81 | 0.74 | 0.68 | | |
| ZAF | 0.84 | 0.74 | 0.73 | 0.84 | 0.74 | 0.88 | 0.79 | 12.51 | |
| NLD | 0.77 | 0.90 | 0.91 | 0.86 | 0.87 | 0.72 | 0.87 | 0.77 | 3.55 |

JER rlr

| | AUS | CAN | DFS | ITA | ZAF | NLD | USA |
|-----|------|------|-------|------|-------|------|------|
| AUS | 8.36 | | | | | | |
| CAN | 0.55 | 6.92 | | | | | |
| DFS | 0.61 | 0.75 | 12.95 | | | | |
| ITA | 0.58 | 0.77 | 0.65 | 1.09 | | | |
| ZAF | 0.58 | 0.60 | 0.59 | 0.59 | 13.52 | | |
| NLD | 0.61 | 0.84 | 0.87 | 0.73 | 0.66 | 5.73 | |
| USA | 0.56 | 0.78 | 0.66 | 0.80 | 0.57 | 0.75 | 0.68 |

JER fan

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|-------|------|
| AUS | 6.39 | | | | | | | |
| CAN | 0.66 | 5.70 | | | | | | |
| DFS | 0.68 | 0.87 | 12.74 | | | | | |
| GBR | 0.78 | 0.79 | 0.73 | 1.37 | | | | |
| ITA | 0.63 | 0.75 | 0.67 | 0.74 | 1.80 | | | |
| USA | 0.71 | 0.87 | 0.79 | 0.86 | 0.81 | 0.73 | | |
| ZAF | 0.80 | 0.68 | 0.72 | 0.90 | 0.69 | 0.81 | 10.26 | |
| NLD | 0.73 | 0.76 | 0.77 | 0.87 | 0.71 | 0.79 | 0.74 | 4.61 |

JER fua

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|-------|------|
| AUS | 5.87 | | | | | | | | |
| CAN | 0.74 | 5.25 | | | | | | | |
| DFS | 0.82 | 0.85 | 12.63 | | | | | | |
| GBR | 0.80 | 0.93 | 0.85 | 1.57 | | | | | |
| ITA | 0.69 | 0.86 | 0.80 | 0.86 | 1.50 | | | | |
| NZL | 0.84 | 0.72 | 0.73 | 0.80 | 0.73 | 0.40 | | | |
| USA | 0.80 | 0.94 | 0.87 | 0.93 | 0.90 | 0.73 | 1.21 | | |
| ZAF | 0.77 | 0.91 | 0.85 | 0.93 | 0.83 | 0.74 | 0.91 | 11.93 | |
| NLD | 0.78 | 0.90 | 0.91 | 0.91 | 0.82 | 0.81 | 0.86 | 0.87 | 5.00 |

JER ruh

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|------|------|
| AUS | 5.44 | | | | | | | | |
| CAN | 0.74 | 6.96 | | | | | | | |
| DFS | 0.76 | 0.88 | 10.96 | | | | | | |
| GBR | 0.85 | 0.82 | 0.86 | 1.14 | | | | | |
| ITA | 0.77 | 0.81 | 0.83 | 0.88 | 1.34 | | | | |
| NZL | 0.76 | 0.76 | 0.79 | 0.79 | 0.82 | 0.40 | | | |
| USA | 0.80 | 0.85 | 0.90 | 0.91 | 0.83 | 0.78 | 1.07 | | |
| ZAF | 0.87 | 0.76 | 0.85 | 0.91 | 0.82 | 0.77 | 0.89 | 9.45 | |
| NLD | 0.77 | 0.80 | 0.93 | 0.88 | 0.85 | 0.80 | 0.85 | 0.79 | 4.60 |

JER usu

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|-------|------|
| AUS | 5.18 | | | | | | | | |
| CAN | 0.82 | 6.39 | | | | | | | |
| DFS | 0.74 | 0.87 | 12.73 | | | | | | |
| GBR | 0.85 | 0.89 | 0.85 | 1.65 | | | | | |
| ITA | 0.65 | 0.76 | 0.71 | 0.75 | 1.54 | | | | |
| NZL | 0.63 | 0.64 | 0.63 | 0.64 | 0.66 | 0.38 | | | |
| USA | 0.74 | 0.86 | 0.87 | 0.82 | 0.79 | 0.62 | 0.80 | | |
| ZAF | 0.79 | 0.82 | 0.78 | 0.82 | 0.68 | 0.63 | 0.81 | 10.50 | |
| NLD | 0.82 | 0.83 | 0.89 | 0.89 | 0.80 | 0.63 | 0.88 | 0.80 | 5.20 |

JER ude

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|-------|------|
| AUS | 5.35 | | | | | | | |
| CAN | 0.95 | 5.02 | | | | | | |
| DFS | 0.94 | 0.94 | 12.37 | | | | | |
| GBR | 0.95 | 0.96 | 0.94 | 1.54 | | | | |
| ITA | 0.95 | 0.94 | 0.94 | 0.92 | 1.41 | | | |
| USA | 0.94 | 0.96 | 0.96 | 0.94 | 0.95 | 1.41 | | |
| ZAF | 0.93 | 0.91 | 0.94 | 0.94 | 0.92 | 0.93 | 11.02 | |
| NLD | 0.94 | 0.96 | 0.96 | 0.96 | 0.95 | 0.95 | 0.94 | 4.41 |

JER ftp

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|------|-------|------|
| AUS | 6.05 | | | | | | | | |
| CAN | 0.90 | 6.08 | | | | | | | |
| DFS | 0.88 | 0.95 | 12.99 | | | | | | |
| GBR | 0.91 | 0.92 | 0.90 | 1.35 | | | | | |
| ITA | 0.82 | 0.86 | 0.86 | 0.84 | 1.61 | | | | |
| NZL | 0.89 | 0.92 | 0.87 | 0.87 | 0.85 | 0.30 | | | |
| USA | 0.88 | 0.95 | 0.95 | 0.92 | 0.87 | 0.89 | 1.09 | | |
| ZAF | 0.87 | 0.93 | 0.91 | 0.93 | 0.86 | 0.91 | 0.91 | 10.60 | |
| NLD | 0.93 | 0.97 | 0.95 | 0.93 | 0.85 | 0.89 | 0.90 | 0.92 | 5.27 |

JER ftl

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|------|------|-------|------|------|------|-------|------|
| AUS | 6.36 | | | | | | | |
| CAN | 0.88 | 5.62 | | | | | | |
| DFS | 0.93 | 0.91 | 13.89 | | | | | |
| GBR | 0.95 | 0.91 | 0.94 | 1.38 | | | | |
| ITA | 0.90 | 0.86 | 0.91 | 0.93 | 1.62 | | | |
| USA | 0.94 | 0.92 | 0.95 | 0.96 | 0.93 | 0.93 | | |
| ZAF | 0.95 | 0.90 | 0.92 | 0.94 | 0.91 | 0.97 | 11.12 | |
| NLD | 0.95 | 0.93 | 0.97 | 0.97 | 0.91 | 0.96 | 0.95 | 4.76 |

JER rtp

| | AUS | CAN | DFS | NZL | ZAF | NLD | USA |
|-----|------|------|-------|------|-------|------|------|
| AUS | 5.84 | | | | | | |
| CAN | 0.95 | 6.30 | | | | | |
| DFS | 0.92 | 0.95 | 13.03 | | | | |
| NZL | 0.94 | 0.95 | 0.92 | 0.40 | | | |
| ZAF | 0.95 | 0.94 | 0.92 | 0.90 | 10.13 | | |
| NLD | 0.93 | 0.96 | 0.97 | 0.91 | 0.89 | 4.57 | |
| USA | 0.90 | 0.91 | 0.93 | 0.89 | 0.89 | 0.94 | 1.39 |

JER ocs

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | NLD |
|-----|------|------|-------|------|------|------|------|------|
| AUS | 6.21 | | | | | | | |
| CAN | 0.54 | 5.93 | | | | | | |
| DFS | 0.58 | 0.75 | 12.79 | | | | | |
| GBR | 0.66 | 0.85 | 0.82 | 1.96 | | | | |
| ITA | 0.53 | 0.81 | 0.75 | 0.81 | 0.75 | | | |
| NZL | 0.64 | 0.59 | 0.57 | 0.63 | 0.59 | 0.30 | | |
| USA | 0.67 | 0.79 | 0.81 | 0.86 | 0.81 | 0.60 | 0.91 | |
| NLD | 0.61 | 0.78 | 0.87 | 0.88 | 0.80 | 0.64 | 0.84 | 2.67 |

JER ous

| | AUS | CAN | DFS | GBR | NZL | USA | NLD |
|-----|------|------|-------|------|------|------|------|
| AUS | 5.07 | | | | | | |
| CAN | 0.63 | 6.13 | | | | | |
| DFS | 0.51 | 0.85 | 13.10 | | | | |
| GBR | 0.73 | 0.87 | 0.72 | 1.30 | | | |
| NZL | 0.80 | 0.72 | 0.64 | 0.74 | 0.42 | | |
| USA | 0.65 | 0.91 | 0.81 | 0.87 | 0.67 | 0.65 | |
| NLD | 0.59 | 0.89 | 0.90 | 0.79 | 0.77 | 0.90 | 4.58 |

JER ofl

| | AUS | CAN | DFS | GBR | ITA | USA | NLD |
|-----|------|------|-------|------|------|------|------|
| AUS | 6.39 | | | | | | |
| CAN | 0.57 | 6.02 | | | | | |
| DFS | 0.41 | 0.80 | 13.67 | | | | |
| GBR | 0.58 | 0.73 | 0.64 | 1.30 | | | |
| ITA | 0.47 | 0.75 | 0.64 | 0.73 | 1.14 | | |
| USA | 0.65 | 0.84 | 0.66 | 0.73 | 0.77 | 0.93 | |
| NLD | 0.43 | 0.67 | 0.65 | 0.74 | 0.68 | 0.68 | 5.70 |

RDC sta

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|------|------|-------|------|------|-------|------|------|------|------|
| AUS | 6.22 | | | | | | | | | |
| CAN | 0.88 | 5.90 | | | | | | | | |
| DEU | 0.89 | 0.97 | 13.12 | | | | | | | |
| DFS | 0.86 | 0.97 | 0.97 | 8.75 | | | | | | |
| GBR | 0.91 | 0.95 | 0.95 | 0.92 | 1.19 | | | | | |
| NOR | 0.89 | 0.94 | 0.96 | 0.98 | 0.93 | 13.46 | | | | |
| NZL | 0.89 | 0.90 | 0.87 | 0.90 | 0.92 | 0.93 | 0.48 | | | |
| USA | 0.89 | 0.97 | 0.95 | 0.94 | 0.96 | 0.93 | 0.89 | 2.15 | | |
| NLD | 0.86 | 0.96 | 0.97 | 0.97 | 0.93 | 0.96 | 0.85 | 0.93 | 5.01 | |
| CAM | 0.94 | 0.92 | 0.92 | 0.92 | 0.93 | 0.92 | 0.93 | 0.92 | 0.92 | 5.38 |

RDC cwi

| | AUS | CAN | DEU | DFS | GBR | NZL | USA | NLD | CAM |
|-----|------|------|-------|-------|------|------|------|------|------|
| AUS | 6.67 | | | | | | | | |
| CAN | 0.71 | 7.09 | | | | | | | |
| DEU | 0.70 | 0.86 | 12.08 | | | | | | |
| DFS | 0.77 | 0.84 | 0.88 | 12.75 | | | | | |
| GBR | 0.80 | 0.86 | 0.90 | 0.86 | 1.47 | | | | |
| NZL | 0.79 | 0.69 | 0.74 | 0.71 | 0.82 | 0.35 | | | |
| USA | 0.68 | 0.86 | 0.82 | 0.81 | 0.84 | 0.71 | 1.15 | | |
| NLD | 0.67 | 0.91 | 0.92 | 0.88 | 0.90 | 0.67 | 0.83 | 3.99 | |
| CAM | 0.80 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 6.73 |

RDC bde

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|------|------|------|-------|------|-------|------|------|------|------|
| AUS | 6.68 | | | | | | | | | |
| CAN | 0.83 | 5.85 | | | | | | | | |
| DEU | 0.80 | 0.88 | 9.99 | | | | | | | |
| DFS | 0.85 | 0.84 | 0.92 | 11.73 | | | | | | |
| GBR | 0.80 | 0.84 | 0.91 | 0.88 | 1.37 | | | | | |
| NOR | 0.85 | 0.83 | 0.80 | 0.89 | 0.83 | 15.23 | | | | |
| NZL | 0.79 | 0.70 | 0.73 | 0.78 | 0.75 | 0.82 | 0.35 | | | |
| USA | 0.72 | 0.76 | 0.88 | 0.82 | 0.90 | 0.83 | 0.74 | 1.03 | | |
| NLD | 0.72 | 0.83 | 0.90 | 0.83 | 0.91 | 0.77 | 0.69 | 0.90 | 3.96 | |
| CAM | 0.86 | 0.83 | 0.84 | 0.84 | 0.84 | 0.84 | 0.85 | 0.84 | 0.83 | 5.26 |

RDC ang

| | AUS | CAN | DEU | DFS | GBR | USA | NLD | CAM |
|-----|------|------|-------|------|------|------|------|------|
| AUS | 7.83 | | | | | | | |
| CAN | 0.66 | 6.61 | | | | | | |
| DEU | 0.62 | 0.85 | 12.62 | | | | | |
| DFS | 0.65 | 0.83 | 0.86 | 9.20 | | | | |
| GBR | 0.79 | 0.80 | 0.80 | 0.84 | 1.28 | | | |
| USA | 0.72 | 0.87 | 0.86 | 0.83 | 0.86 | 1.04 | | |
| NLD | 0.74 | 0.73 | 0.61 | 0.67 | 0.78 | 0.67 | 4.67 | |
| CAM | 0.73 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 7.17 |

RDC ran

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|------|------|------|-------|------|-------|------|------|------|------|
| AUS | 7.42 | | | | | | | | | |
| CAN | 0.92 | 5.82 | | | | | | | | |
| DEU | 0.93 | 0.97 | 8.94 | | | | | | | |
| DFS | 0.92 | 0.95 | 0.96 | 10.10 | | | | | | |
| GBR | 0.95 | 0.97 | 0.97 | 0.95 | 1.48 | | | | | |
| NOR | 0.92 | 0.95 | 0.93 | 0.91 | 0.95 | 12.54 | | | | |
| NZL | 0.94 | 0.92 | 0.91 | 0.90 | 0.93 | 0.93 | 0.29 | | | |
| USA | 0.92 | 0.98 | 0.96 | 0.94 | 0.97 | 0.95 | 0.91 | 1.07 | | |
| NLD | 0.93 | 0.97 | 0.98 | 0.96 | 0.97 | 0.95 | 0.90 | 0.96 | 5.63 | |
| CAM | 0.94 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 5.84 |

RDC rwi

| | AUS | CAN | DEU | DFS | GBR | NZL | USA | NLD | CAM |
|-----|------|------|------|-------|------|------|------|------|------|
| AUS | 6.22 | | | | | | | | |
| CAN | 0.89 | 5.99 | | | | | | | |
| DEU | 0.84 | 0.93 | 9.52 | | | | | | |
| DFS | 0.87 | 0.93 | 0.92 | 10.63 | | | | | |
| GBR | 0.87 | 0.90 | 0.89 | 0.87 | 1.30 | | | | |
| NZL | 0.88 | 0.87 | 0.82 | 0.89 | 0.88 | 0.32 | | | |
| USA | 0.81 | 0.91 | 0.84 | 0.88 | 0.93 | 0.85 | 1.18 | | |
| NLD | 0.88 | 0.94 | 0.95 | 0.93 | 0.88 | 0.83 | 0.81 | 5.90 | |
| CAM | 0.89 | 0.89 | 0.87 | 0.89 | 0.88 | 0.89 | 0.88 | 0.88 | 5.98 |


```

-----
RDC      ocs
-----
      AUS      CAN      DEU      DFS      GBR      NOR      NZL      USA      NLD      CAM
AUS      4.65
CAN      0.59      5.34
DEU      0.62      0.84      18.52
DFS      0.63      0.76      0.81      9.40
GBR      0.67      0.81      0.93      0.83      1.54
NOR      0.65      0.84      0.81      0.77      0.86      13.86
NZL      0.73      0.61      0.65      0.64      0.67      0.77      0.25
USA      0.62      0.83      0.89      0.82      0.88      0.86      0.69      0.79
NLD      0.64      0.78      0.88      0.87      0.89      0.80      0.65      0.86      3.26
CAM      0.72      0.86      0.86      0.86      0.86      0.86      0.79      0.86      0.86      6.01
-----

```

```

-----
RDC      ous
-----
      AUS      CAN      DEU      DFS      GBR      NOR      NZL      USA      NLD      CAM
AUS      5.74
CAN      0.67      5.49
DEU      0.65      0.89      15.46
DFS      0.56      0.80      0.83      11.12
GBR      0.78      0.85      0.85      0.71      1.46
NOR      0.63      0.88      0.80      0.84      0.87      13.19
NZL      0.81      0.77      0.80      0.72      0.77      0.73      0.33
USA      0.69      0.92      0.90      0.88      0.88      0.89      0.83      0.98
NLD      0.61      0.89      0.90      0.90      0.80      0.83      0.80      0.89      4.29
CAM      0.65      0.88      0.87      0.87      0.88      0.88      0.68      0.88      0.88      6.59
-----

```

```

-----
RDC      ofl
-----
      AUS      CAN      DEU      DFS      GBR      NOR      USA      NLD      CAM
AUS      7.15
CAN      0.42      5.81
DEU      0.42      0.82      15.10
DFS      0.43      0.81      0.79      13.16
GBR      0.42      0.74      0.73      0.69      1.42
NOR      0.49      0.71      0.74      0.66      0.73      16.04
USA      0.46      0.74      0.72      0.65      0.72      0.73      1.17
NLD      0.43      0.67      0.73      0.65      0.75      0.73      0.68      7.57
CAM      0.67      0.74      0.74      0.74      0.74      0.74      0.76      0.75      6.96
-----

```

^LAPPENDIX II. Number of common bulls

BSW

```

-----
common bulls below diagonal
common three quarter sib group above diagonal
      CAN CHE  FRA  ITA  NLD  USA  DEA  SVN  GBR
-----
CAN      0  104  66  102  35  122  91  20  16
CHE      83   0  142  397  58  246  454  48  14
FRA      56  108   0  155  52   85  154  36  13
ITA      80  340  127   0  77  182  483  63  15
NLD      28   54  42   59   0   51  72  27   9
USA     104  221   58  132  37   0  199  24  16
DEA      67  360  115  405  61  159   0  64  12
SVN      18   47   35   62  26   19   60   0   7
GBR      11   11   11   12   7   13   9   4   0
-----

```

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 98 | 66 | 102 | 29 | 122 | 89 | 19 | 16 |
| CHE | 81 | 0 | 125 | 342 | 53 | 217 | 390 | 45 | 14 |
| FRA | 56 | 92 | 0 | 155 | 48 | 85 | 152 | 35 | 13 |
| ITA | 80 | 286 | 127 | 0 | 69 | 182 | 448 | 61 | 15 |
| NLD | 25 | 51 | 39 | 55 | 0 | 37 | 66 | 27 | 9 |
| USA | 104 | 188 | 58 | 132 | 28 | 0 | 181 | 23 | 16 |
| DEA | 66 | 301 | 114 | 369 | 59 | 134 | 0 | 62 | 11 |
| SVN | 17 | 44 | 34 | 60 | 26 | 18 | 59 | 0 | 7 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 4 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | DEA | SVN | GBR | USA |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 29 | 91 | 13 | 16 | 122 |
| CHE | 83 | 0 | 142 | 397 | 57 | 454 | 34 | 14 | 246 |
| FRA | 56 | 108 | 0 | 155 | 48 | 154 | 24 | 13 | 85 |
| ITA | 80 | 340 | 127 | 0 | 69 | 483 | 45 | 15 | 182 |
| NLD | 25 | 54 | 39 | 55 | 0 | 67 | 19 | 9 | 37 |
| DEA | 67 | 360 | 115 | 405 | 60 | 0 | 45 | 12 | 199 |
| SVN | 12 | 32 | 25 | 43 | 19 | 43 | 0 | 6 | 16 |
| GBR | 11 | 11 | 11 | 12 | 7 | 9 | 3 | 0 | 16 |
| USA | 104 | 221 | 58 | 132 | 28 | 159 | 13 | 13 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | NLD | USA | GBR |
|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 103 | 66 | 18 | 121 | 16 |
| CHE | 83 | 0 | 138 | 35 | 244 | 14 |
| FRA | 56 | 104 | 0 | 32 | 85 | 13 |
| NLD | 15 | 34 | 27 | 0 | 22 | 6 |
| USA | 103 | 221 | 58 | 17 | 0 | 16 |
| GBR | 11 | 11 | 11 | 4 | 13 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 35 | 122 | 91 | 20 | 16 |
| CHE | 83 | 0 | 142 | 397 | 58 | 246 | 454 | 48 | 14 |
| FRA | 56 | 108 | 0 | 155 | 52 | 85 | 154 | 36 | 13 |
| ITA | 80 | 340 | 127 | 0 | 77 | 182 | 483 | 63 | 15 |
| NLD | 28 | 54 | 42 | 59 | 0 | 51 | 72 | 27 | 9 |
| USA | 104 | 221 | 58 | 132 | 37 | 0 | 199 | 24 | 16 |
| DEA | 67 | 360 | 115 | 405 | 61 | 159 | 0 | 64 | 12 |
| SVN | 18 | 47 | 35 | 62 | 26 | 19 | 60 | 0 | 7 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 4 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | NLD | USA | DEA | GBR | SVN | ITA |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 35 | 122 | 91 | 16 | 13 | 100 |
| CHE | 83 | 0 | 142 | 58 | 246 | 454 | 14 | 34 | 391 |
| FRA | 56 | 108 | 0 | 52 | 85 | 154 | 13 | 24 | 154 |
| NLD | 28 | 54 | 42 | 0 | 51 | 72 | 9 | 19 | 76 |
| USA | 104 | 221 | 58 | 37 | 0 | 199 | 16 | 16 | 170 |
| DEA | 67 | 360 | 115 | 61 | 159 | 0 | 12 | 45 | 477 |
| GBR | 11 | 11 | 11 | 7 | 13 | 9 | 0 | 6 | 15 |
| SVN | 12 | 32 | 25 | 19 | 13 | 43 | 3 | 0 | 45 |
| ITA | 79 | 335 | 127 | 59 | 120 | 398 | 12 | 43 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 35 | 122 | 91 | 20 | 16 |
| CHE | 83 | 0 | 142 | 397 | 58 | 246 | 454 | 48 | 14 |
| FRA | 56 | 108 | 0 | 155 | 52 | 85 | 154 | 36 | 13 |
| ITA | 80 | 340 | 127 | 0 | 77 | 182 | 483 | 63 | 15 |
| NLD | 28 | 54 | 42 | 59 | 0 | 51 | 72 | 27 | 9 |
| USA | 104 | 221 | 58 | 132 | 37 | 0 | 199 | 24 | 16 |
| DEA | 67 | 360 | 115 | 405 | 61 | 159 | 0 | 64 | 12 |
| SVN | 18 | 47 | 35 | 62 | 26 | 19 | 60 | 0 | 7 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 4 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 28 | 122 | 91 | 20 | 16 |
| CHE | 83 | 0 | 142 | 397 | 56 | 246 | 454 | 48 | 14 |
| FRA | 56 | 108 | 0 | 155 | 48 | 85 | 154 | 36 | 13 |
| ITA | 80 | 340 | 127 | 0 | 68 | 182 | 483 | 63 | 15 |
| NLD | 24 | 53 | 39 | 54 | 0 | 36 | 66 | 27 | 9 |
| USA | 104 | 221 | 58 | 132 | 26 | 0 | 199 | 24 | 16 |
| DEA | 67 | 360 | 115 | 405 | 59 | 159 | 0 | 64 | 12 |
| SVN | 18 | 47 | 35 | 62 | 26 | 19 | 60 | 0 | 7 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 4 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | DEA | SVN | USA |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 100 | 28 | 91 | 20 | 122 |
| CHE | 83 | 0 | 142 | 391 | 56 | 454 | 47 | 246 |
| FRA | 56 | 108 | 0 | 154 | 48 | 154 | 36 | 85 |
| ITA | 79 | 335 | 127 | 0 | 68 | 477 | 63 | 170 |
| NLD | 24 | 53 | 39 | 54 | 0 | 66 | 27 | 36 |
| DEA | 67 | 360 | 115 | 398 | 59 | 0 | 63 | 199 |
| SVN | 18 | 46 | 35 | 62 | 26 | 59 | 0 | 24 |
| USA | 104 | 221 | 58 | 120 | 26 | 159 | 19 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 37 | 63 | 28 | 122 | 58 | 13 | 16 |
| CHE | 83 | 0 | 79 | 224 | 57 | 245 | 260 | 34 | 14 |
| FRA | 34 | 57 | 0 | 74 | 32 | 49 | 82 | 24 | 10 |
| ITA | 54 | 179 | 61 | 0 | 49 | 85 | 202 | 39 | 12 |
| NLD | 24 | 54 | 28 | 44 | 0 | 36 | 54 | 19 | 9 |
| USA | 104 | 221 | 32 | 61 | 27 | 0 | 102 | 16 | 16 |
| DEA | 45 | 194 | 59 | 174 | 48 | 70 | 0 | 43 | 9 |
| SVN | 12 | 32 | 25 | 38 | 19 | 13 | 41 | 0 | 6 |
| GBR | 11 | 11 | 8 | 9 | 7 | 13 | 7 | 3 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 29 | 122 | 91 | 20 | 16 |
| CHE | 83 | 0 | 142 | 397 | 57 | 246 | 454 | 48 | 14 |
| FRA | 56 | 108 | 0 | 155 | 48 | 85 | 154 | 36 | 13 |
| ITA | 80 | 340 | 127 | 0 | 69 | 182 | 483 | 63 | 15 |
| NLD | 25 | 54 | 39 | 55 | 0 | 37 | 67 | 27 | 9 |
| USA | 104 | 221 | 58 | 132 | 28 | 0 | 199 | 24 | 16 |
| DEA | 67 | 360 | 115 | 405 | 60 | 159 | 0 | 64 | 12 |
| SVN | 18 | 47 | 35 | 62 | 26 | 19 | 60 | 0 | 7 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 4 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 29 | 122 | 91 | 20 |
| CHE | 83 | 0 | 142 | 397 | 57 | 246 | 454 | 48 |
| FRA | 56 | 108 | 0 | 155 | 48 | 85 | 154 | 36 |
| ITA | 80 | 340 | 127 | 0 | 69 | 182 | 483 | 63 |
| NLD | 25 | 54 | 39 | 55 | 0 | 37 | 67 | 27 |
| USA | 104 | 221 | 58 | 132 | 28 | 0 | 199 | 24 |
| DEA | 67 | 360 | 115 | 405 | 60 | 159 | 0 | 64 |
| SVN | 18 | 47 | 35 | 62 | 26 | 19 | 60 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 104 | 66 | 102 | 35 | 122 | 91 | 13 | 16 |
| CHE | 83 | 0 | 142 | 397 | 58 | 246 | 454 | 34 | 14 |
| FRA | 56 | 108 | 0 | 155 | 52 | 85 | 154 | 24 | 13 |
| ITA | 80 | 340 | 127 | 0 | 77 | 182 | 483 | 45 | 15 |
| NLD | 28 | 54 | 42 | 59 | 0 | 51 | 72 | 19 | 9 |
| USA | 104 | 221 | 58 | 132 | 37 | 0 | 199 | 16 | 16 |
| DEA | 67 | 360 | 115 | 405 | 61 | 159 | 0 | 45 | 12 |
| SVN | 12 | 32 | 25 | 43 | 19 | 13 | 43 | 0 | 6 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 3 | 0 |

BSW

```

common bulls below diagonal
common three quarter sib group above diagonal
  CAN  CHE  FRA  ITA  NLD  USA  DEA  SVN  GBR
-----
CAN    0  104  66  102  35  120  91  20  16
CHE   83   0  142  397  58  246  454  48  14
FRA   56  108   0  155  52   85  154  36  13
ITA   80  340  127   0  77  182  483  63  15
NLD   28   54  42  59   0  51  72  27   9
USA  103  221  58  132  37   0  199  24  16
DEA   67  360  115  405  61  159   0  64  12
SVN   18   47  35  62  26  19  60   0   7
GBR   11   11  11  12   7  13   9   4   0
-----

```

BSW

```

common bulls below diagonal
common three quarter sib group above diagonal
  CAN  CHE  FRA  NLD  USA  DEA  SVN  GBR  ITA
-----
CAN    0  104  66  35  122  80  19  16  92
CHE   83   0  142  58  246  422  46  14  355
FRA   56  108   0  52  85  144  35  13  142
NLD   28   54  42   0  51  66  27   9  68
USA  104  221  58  37   0  174  23  16  140
DEA   60  329  107  59  131   0  62  11  391
SVN   17   45  34  26  18  59   0   7  61
GBR   11   11  11   7  13   9   4   0  15
ITA   72  303  115  55  101  335  60  12   0
-----

```

BSW

```

common bulls below diagonal
common three quarter sib group above diagonal
  CAN  CHE  FRA  ITA  NLD  USA  DEA  SVN  GBR
-----
CAN    0  104  66  102  35  122  91  19  16
CHE   83   0  142  397  58  246  454  47  14
FRA   56  108   0  155  52   85  154  35  13
ITA   80  340  127   0  77  180  483  62  15
NLD   28   54  42  59   0  51  72  27   9
USA  104  221  58  131  37   0  199  23  16
DEA   67  360  115  405  61  159   0  63  12
SVN   17   46  34  61  26  18  59   0   7
GBR   11   11  11  12   7  13   9   4   0
-----

```

BSW

```

common bulls below diagonal
common three quarter sib group above diagonal
  CAN  CHE  FRA  ITA  NLD  DEA  SVN  USA
-----
CAN    0  104  66  63  24  58  19  122
CHE   83   0  139  224  53  260  46  245
FRA   56  105   0  94  45  102  35  85
ITA   54  179  75   0  48  202  49  85
NLD   21   52  37  44   0  53  26  31
DEA   45  194  70  174  48   0  55  102
SVN   17   45  34  49  26  50   0  22
USA  104  221  58  61  23  70  18   0
-----

```

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 98 | 56 | 102 | 35 | 122 | 58 | 13 | 16 |
| CHE | 81 | 0 | 104 | 341 | 53 | 217 | 255 | 34 | 14 |
| FRA | 52 | 80 | 0 | 121 | 42 | 70 | 91 | 24 | 13 |
| ITA | 80 | 284 | 103 | 0 | 75 | 179 | 237 | 45 | 15 |
| NLD | 28 | 51 | 37 | 59 | 0 | 51 | 54 | 19 | 9 |
| USA | 104 | 188 | 51 | 132 | 37 | 0 | 102 | 16 | 16 |
| DEA | 45 | 190 | 67 | 208 | 48 | 70 | 0 | 43 | 9 |
| SVN | 12 | 32 | 25 | 43 | 19 | 13 | 41 | 0 | 6 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 7 | 3 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 98 | 56 | 102 | 35 | 121 | 91 | 13 | 16 |
| CHE | 81 | 0 | 104 | 342 | 53 | 217 | 399 | 34 | 14 |
| FRA | 52 | 80 | 0 | 121 | 42 | 70 | 123 | 24 | 13 |
| ITA | 80 | 286 | 103 | 0 | 77 | 182 | 476 | 45 | 15 |
| NLD | 28 | 51 | 37 | 59 | 0 | 51 | 72 | 19 | 9 |
| USA | 103 | 188 | 51 | 132 | 37 | 0 | 197 | 16 | 16 |
| DEA | 66 | 311 | 93 | 401 | 61 | 155 | 0 | 45 | 12 |
| SVN | 12 | 32 | 25 | 43 | 19 | 13 | 43 | 0 | 6 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 3 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | FRA | ITA | NLD | USA | DEA | SVN | GBR |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 98 | 56 | 100 | 35 | 122 | 91 | 13 | 16 |
| CHE | 81 | 0 | 104 | 341 | 53 | 217 | 399 | 34 | 14 |
| FRA | 52 | 80 | 0 | 120 | 42 | 70 | 123 | 24 | 13 |
| ITA | 79 | 285 | 103 | 0 | 76 | 170 | 471 | 45 | 15 |
| NLD | 28 | 51 | 37 | 59 | 0 | 51 | 72 | 19 | 9 |
| USA | 104 | 188 | 51 | 120 | 37 | 0 | 197 | 16 | 16 |
| DEA | 66 | 311 | 93 | 395 | 61 | 155 | 0 | 45 | 12 |
| SVN | 12 | 32 | 25 | 43 | 19 | 13 | 43 | 0 | 6 |
| GBR | 11 | 11 | 11 | 12 | 7 | 13 | 9 | 3 | 0 |

BSW

BSW

BSW

common bulls below diagonal
common three quarter sib group above diagonal

| | CAN | CHE | DEA | ITA | SVN | USA | FRA |
|-----|-----|-----|-----|-----|-----|-----|-----|
| CAN | 0 | 97 | 89 | 63 | 12 | 128 | 37 |
| CHE | 79 | 0 | 393 | 224 | 34 | 216 | 79 |
| DEA | 65 | 308 | 0 | 241 | 45 | 193 | 92 |
| ITA | 53 | 178 | 198 | 0 | 39 | 85 | 74 |
| SVN | 11 | 32 | 43 | 38 | 0 | 16 | 24 |
| USA | 102 | 188 | 154 | 61 | 13 | 0 | 49 |
| FRA | 34 | 57 | 66 | 61 | 25 | 32 | 0 |

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CAN CHE DEA ITA SVN FRA

CAN 0 103 91 104 19 67
CHE 81 0 454 397 47 142
DEA 65 360 0 482 64 154
ITA 79 340 404 0 62 155
SVN 17 47 60 62 0 36
FRA 56 108 115 127 35 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CAN CHE DEA ITA SVN USA FRA

CAN 0 97 67 63 12 128 37
CHE 79 0 290 224 34 216 79
DEA 53 221 0 209 44 130 84
ITA 53 178 181 0 39 85 74
SVN 11 32 42 38 0 16 24
USA 102 188 94 61 13 0 49
FRA 34 57 61 61 25 32 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CHE DEA ITA SVN USA FRA

CHE 0 436 224 34 245 140
DEA 345 0 241 45 184 150
ITA 179 198 0 39 85 94
SVN 32 43 38 0 16 24
USA 221 143 61 13 0 84
FRA 107 113 75 25 58 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CAN CHE DEA ITA SVN USA FRA

CAN 0 54 41 45 11 61 25
CHE 43 0 290 224 31 216 77
DEA 28 221 0 209 40 130 83
ITA 36 178 181 0 35 85 72
SVN 10 30 38 35 0 16 24
USA 50 188 94 61 13 0 49
FRA 22 55 60 59 25 32 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CAN CHE DEA ITA SVN FRA

CAN 0 103 91 102 18 67
CHE 81 0 454 391 45 142
DEA 65 360 0 476 63 154
ITA 78 335 397 0 60 154
SVN 16 45 59 60 0 35
FRA 56 108 115 127 34 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CHE DEA ITA SVN FRA

CHE 0 453 394 33 139
DEA 359 0 482 45 153
ITA 337 404 0 44 153
SVN 32 43 43 0 24
FRA 107 114 127 25 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CHE DEA ITA SVN FRA

CHE 0 226 200 32 92
DEA 179 0 201 43 101
ITA 163 174 0 39 93
SVN 31 41 38 0 24
FRA 70 69 75 25 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CHE DEA ITA SVN FRA

CHE 0 453 388 46 139
DEA 359 0 476 63 153
ITA 332 397 0 61 152
SVN 46 59 61 0 35
FRA 107 114 127 34 0

BSW

common bulls below diagonal
common three quarter sib group above diagonal
CHE DEA ITA SVN FRA

CHE 0 259 222 46 75
DEA 193 0 202 55 80
ITA 177 174 0 49 73
SVN 46 50 49 0 27
FRA 56 58 60 27 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 15
USA 46 69 0 32
AUS 23 13 29 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 15
USA 46 69 0 32
AUS 23 13 29 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 15
USA 46 69 0 32
AUS 23 13 29 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN USA AUS

CAN 0 29 9
USA 27 0 13
AUS 8 13 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 55 23
GBR 17 0 70 16
USA 45 69 0 33
AUS 22 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 20 57 24
GBR 17 0 70 16
USA 46 69 0 33
AUS 23 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN AUS USA

CAN 0 8 57
AUS 8 0 14
USA 46 13 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 12 57 24
GBR 9 0 33 11
USA 46 31 0 32
AUS 23 9 29 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 18 55 23
GBR 15 0 68 16
USA 45 67 0 33
AUS 22 14 30 0

GUE

common bulls below diagonal
common three quarter sib group above diagonal
CAN GBR USA AUS

CAN 0 18 57 24
GBR 15 0 68 16
USA 46 67 0 33
AUS 23 14 30 0

GUE

GUE

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | |
| AUS | 0 | 379 | 767 | 411 | 770 | 696 | 546 | 732 | 786 | 691 | 806 | 945 | 420 | 492 | 456 | 296 | 494 | 497 |
| 74 | 376 | 265 | 107 | 462 | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 437 | 384 | 611 | 481 | 418 | 552 | 510 | 522 | 732 | 526 | 296 | 385 | 220 | 196 | 304 | 386 |
| 51 | 306 | 178 | 114 | 389 | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1064 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 528 | 141 | 771 | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 475 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 210 | 103 | 410 | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1188 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 431 | 213 | 824 | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 627 | 435 | 739 | 0 | 808 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 420 | 360 | 706 | 954 |
| 122 | 488 | 355 | 171 | 701 | | | | | | | | | | | | | | |
| ESP | 417 | 395 | 592 | 376 | 523 | 539 | 0 | 932 | 909 | 1119 | 891 | 1283 | 591 | 728 | 283 | 344 | 732 | 727 |
| 95 | 366 | 370 | 141 | 657 | | | | | | | | | | | | | | |
| FRA | 439 | 498 | 563 | 410 | 618 | 502 | 588 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 448 | 337 | 987 | 1013 |
| 110 | 477 | 385 | 138 | 666 | | | | | | | | | | | | | | |
| GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 722 | 645 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 628 | 397 | 163 | 753 | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 786 | 611 | 1050 | 0 | 1434 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 489 | 191 | 859 | | | | | | | | | | | | | | |
| NLD | 649 | 774 | 841 | 656 | 1068 | 980 | 726 | 746 | 1093 | 1067 | 0 | 1890 | 681 | 1048 | 541 | 360 | 780 | 1162 |
| 149 | 584 | 365 | 180 | 799 | | | | | | | | | | | | | | |
| USA | 761 | 422 | 2280 | 656 | 765 | 827 | 760 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 478 | 664 | 167 | 985 | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 426 | 442 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 337 | 112 | 505 | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 435 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 379 | 167 | 664 | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 231 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 151 | 52 | 263 | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 280 | 314 | 231 | 342 | 313 | 320 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 202 | 67 | 292 | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 240 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 394 | 104 | 486 | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 486 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 384 | 161 | 628 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 38 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 35 | 87 | | | | | | | | | | | | | | |
| IRL | 351 | 297 | 350 | 311 | 358 | 388 | 357 | 373 | 682 | 427 | 535 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 174 | 80 | 339 | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 463 | 139 | 194 | 220 | 256 | 179 | 290 | 388 | 228 | 738 | 274 | 269 | 99 | 161 | 166 | 263 |
| 18 | 121 | 0 | 74 | 360 | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 182 | 137 | 101 | 93 | 123 | 160 | 150 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | |
| PRT | 348 | 367 | 761 | 352 | 533 | 590 | 618 | 512 | 683 | 805 | 772 | 988 | 470 | 602 | 199 | 274 | 219 | 508 |
| 53 | 292 | 302 | 94 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | |
| AUS | 0 | 373 | 767 | 411 | 770 | 695 | 557 | 594 | 786 | 691 | 751 | 945 | 420 | 490 | 456 | 246 | 494 | 497 |
| 74 | 376 | 261 | 107 | 465 | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 432 | 382 | 606 | 476 | 426 | 490 | 504 | 519 | 684 | 512 | 294 | 382 | 217 | 176 | 298 | 385 |
| 51 | 305 | 176 | 114 | 389 | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1635 | 969 | 1073 | 930 | 1241 | 1416 | 978 | 2475 | 712 | 843 | 324 | 298 | 1004 | 888 |
| 110 | 372 | 521 | 141 | 773 | | | | | | | | | | | | | | |
| CHE | 357 | 366 | 534 | 0 | 817 | 517 | 483 | 450 | 580 | 633 | 678 | 762 | 337 | 442 | 223 | 182 | 346 | 439 |
| 56 | 313 | 207 | 103 | 411 | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1212 | 1680 | 1487 | 2081 | 2024 | 2405 | 864 | 1306 | 408 | 307 | 1061 | 1412 |
| 158 | 508 | 424 | 213 | 824 | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 627 | 435 | 739 | 0 | 828 | 1105 | 1179 | 1274 | 1353 | 1471 | 630 | 939 | 419 | 306 | 706 | 954 |
| 122 | 486 | 352 | 171 | 703 | | | | | | | | | | | | | | |
| ESP | 427 | 407 | 599 | 385 | 556 | 558 | 0 | 852 | 928 | 1139 | 878 | 1302 | 600 | 744 | 294 | 299 | 737 | 743 |
| 99 | 378 | 368 | 145 | 674 | | | | | | | | | | | | | | |
| FRA | 392 | 460 | 504 | 371 | 491 | 469 | 579 | 0 | 1089 | 1349 | 1247 | 1601 | 642 | 1023 | 357 | 251 | 821 | 958 |
| 105 | 418 | 344 | 137 | 626 | | | | | | | | | | | | | | |
| GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 749 | 591 | 0 | 1370 | 1335 | 1709 | 659 | 870 | 432 | 314 | 771 | 885 |
| 116 | 625 | 394 | 163 | 755 | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 817 | 565 | 1050 | 0 | 1395 | 2146 | 806 | 1102 | 381 | 331 | 931 | 1132 |
| 135 | 466 | 482 | 191 | 860 | | | | | | | | | | | | | | |
| NLD | 618 | 725 | 784 | 632 | 1029 | 956 | 722 | 614 | 1039 | 1036 | 0 | 1653 | 660 | 1024 | 514 | 297 | 711 | 1145 |
| 146 | 570 | 345 | 180 | 782 | | | | | | | | | | | | | | |
| USA | 761 | 422 | 2280 | 656 | 765 | 826 | 776 | 650 | 1443 | 1372 | 1135 | 0 | 950 | 1251 | 495 | 370 | 1504 | 1317 |
| 151 | 476 | 656 | 167 | 987 | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 426 | 450 | 366 | 518 | 623 | 466 | 822 | 0 | 585 | 249 | 251 | 510 | 717 |
| 82 | 292 | 333 | 112 | 507 | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 451 | 473 | 594 | 718 | 708 | 921 | 433 | 0 | 277 | 241 | 618 | 880 |
| 128 | 344 | 376 | 167 | 665 | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 239 | 183 | 333 | 287 | 456 | 410 | 191 | 164 | 0 | 161 | 284 | 296 |
| 34 | 310 | 149 | 52 | 264 | | | | | | | | | | | | | | |
| ZAF | 230 | 155 | 279 | 161 | 219 | 256 | 275 | 191 | 291 | 286 | 261 | 372 | 215 | 178 | 139 | 0 | 240 | 259 |
| 41 | 182 | 182 | 67 | 276 | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 242 | 201 | 261 | 274 | 242 | 339 | 196 | 180 | 120 | 167 | 0 | 640 |
| 82 | 285 | 391 | 104 | 487 | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 504 | 518 | 589 | 748 | 924 | 906 | 605 | 566 | 188 | 194 | 174 | 0 |
| 103 | 346 | 384 | 161 | 629 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 41 | 37 | 50 | 62 | 85 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 35 | 87 | | | | | | | | | | | | | | |
| IRL | 351 | 297 | 350 | 311 | 358 | 388 | 373 | 343 | 680 | 427 | 521 | 439 | 246 | 251 | 256 | 178 | 156 | 262 |
| 28 | 0 | 171 | 80 | 340 | | | | | | | | | | | | | | |
| KOR | 184 | 108 | 461 | 138 | 193 | 219 | 257 | 171 | 289 | 387 | 217 | 732 | 273 | 268 | 98 | 145 | 165 | 263 |
| 18 | 120 | 0 | 74 | 358 | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 182 | 137 | 107 | 93 | 123 | 160 | 148 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 352 | 533 | 591 | 635 | 503 | 685 | 805 | 757 | 988 | 472 | 604 | 199 | 264 | 219 | 509 |
| 53 | 293 | 300 | 94 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | PRT | SVN | | | | | | | | | | | | | | |
| AUS | 0 | 378 | 759 | 410 | 768 | 691 | 541 | 724 | 780 | 690 | 779 | 937 | 420 | 490 | 450 | 296 | 493 | 496 |
| 74 | 374 | 263 | 463 | 79 | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 437 | 384 | 611 | 480 | 419 | 552 | 510 | 522 | 710 | 526 | 296 | 385 | 220 | 196 | 304 | 386 |
| 51 | 306 | 177 | 390 | 85 | | | | | | | | | | | | | | |
| CAN | 689 | 403 | 0 | 697 | 1636 | 969 | 1066 | 1106 | 1241 | 1416 | 1022 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 523 | 773 | 116 | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 476 | 507 | 580 | 633 | 693 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 209 | 411 | 78 | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1192 | 1890 | 1488 | 2081 | 2074 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 426 | 825 | 179 | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 627 | 435 | 739 | 0 | 810 | 1291 | 1180 | 1274 | 1390 | 1471 | 630 | 943 | 419 | 360 | 706 | 954 |
| 122 | 487 | 353 | 704 | 139 | | | | | | | | | | | | | | |
| ESP | 418 | 395 | 593 | 378 | 529 | 541 | 0 | 935 | 910 | 1121 | 879 | 1286 | 591 | 730 | 284 | 344 | 732 | 729 |
| 96 | 367 | 366 | 661 | 113 | | | | | | | | | | | | | | |
| FRA | 438 | 498 | 563 | 411 | 619 | 502 | 592 | 0 | 1250 | 1449 | 1485 | 2048 | 696 | 1117 | 448 | 337 | 987 | 1013 |
| 110 | 477 | 382 | 670 | 114 | | | | | | | | | | | | | | |
| GBR | 647 | 491 | 1195 | 557 | 692 | 754 | 724 | 645 | 0 | 1370 | 1373 | 1710 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 626 | 396 | 757 | 130 | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 791 | 611 | 1050 | 0 | 1422 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 485 | 860 | 157 | | | | | | | | | | | | | | |
| NLD | 645 | 750 | 834 | 655 | 1060 | 979 | 727 | 724 | 1081 | 1066 | 0 | 1763 | 672 | 1039 | 528 | 350 | 747 | 1158 |
| 148 | 577 | 358 | 795 | 141 | | | | | | | | | | | | | | |
| USA | 759 | 422 | 2280 | 656 | 765 | 826 | 762 | 853 | 1443 | 1372 | 1338 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 477 | 659 | 987 | 135 | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 426 | 442 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 336 | 507 | 95 | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 436 | 516 | 595 | 718 | 718 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 378 | 665 | 142 | | | | | | | | | | | | | | |
| NZL | 363 | 169 | 272 | 185 | 231 | 260 | 231 | 212 | 333 | 287 | 476 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 150 | 264 | 42 | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 280 | 315 | 231 | 342 | 313 | 318 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 201 | 292 | 49 | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 240 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 393 | 487 | 81 | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 487 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 384 | 630 | 133 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 38 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 87 | 31 | | | | | | | | | | | | | | |
| IRL | 350 | 297 | 350 | 311 | 358 | 388 | 358 | 373 | 680 | 427 | 532 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 173 | 340 | 58 | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 462 | 139 | 194 | 220 | 256 | 179 | 290 | 388 | 225 | 734 | 274 | 269 | 99 | 160 | 166 | 263 |
| 18 | 121 | 0 | 360 | 61 | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 352 | 533 | 591 | 622 | 515 | 685 | 805 | 770 | 988 | 472 | 604 | 199 | 274 | 219 | 509 |
| 53 | 293 | 302 | 0 | 96 | | | | | | | | | | | | | | |
| SVN | 61 | 66 | 85 | 60 | 156 | 111 | 81 | 77 | 97 | 129 | 117 | 103 | 70 | 111 | 31 | 34 | 35 | 99 |
| 19 | 48 | 39 | 74 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | ZAF | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | | | | | | | | | | | | | | | | | | |
| KOR | | | | | | | | | | | | | | | | | | |
| PRT | | | | | | | | | | | | | | | | | | |
| SVN | | | | | | | | | | | | | | | | | | |
| AUS | 0 | 366 | 767 | 394 | 768 | 694 | 560 | 594 | 782 | 689 | 385 | 942 | 419 | 486 | 294 | 494 | 494 | 72 |
| 374 | 262 | 456 | 78 | | | | | | | | | | | | | | | |
| BEL | 322 | 0 | 426 | 362 | 595 | 469 | 421 | 486 | 495 | 510 | 404 | 499 | 287 | 374 | 188 | 292 | 374 | 51 |
| 299 | 172 | 377 | 84 | | | | | | | | | | | | | | | |
| CAN | 690 | 401 | 0 | 660 | 1634 | 965 | 1075 | 929 | 1237 | 1414 | 598 | 2474 | 712 | 842 | 347 | 1003 | 887 | 109 |
| 371 | 522 | 767 | 116 | | | | | | | | | | | | | | | |
| CHE | 352 | 351 | 504 | 0 | 718 | 503 | 475 | 445 | 566 | 604 | 412 | 705 | 329 | 421 | 202 | 345 | 416 | 52 |
| 310 | 206 | 396 | 77 | | | | | | | | | | | | | | | |
| DEU | 393 | 472 | 523 | 460 | 0 | 1785 | 1220 | 1679 | 1485 | 2078 | 1106 | 2399 | 860 | 1301 | 349 | 1060 | 1405 | 157 |
| 507 | 425 | 804 | 178 | | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 627 | 425 | 736 | 0 | 831 | 1099 | 1167 | 1267 | 735 | 1458 | 625 | 927 | 357 | 703 | 944 | 120 |
| 485 | 353 | 685 | 138 | | | | | | | | | | | | | | | |
| ESP | 429 | 411 | 600 | 382 | 572 | 567 | 0 | 858 | 931 | 1146 | 535 | 1307 | 601 | 747 | 346 | 740 | 744 | 99 |
| 380 | 369 | 671 | 115 | | | | | | | | | | | | | | | |
| FRA | 392 | 460 | 504 | 366 | 491 | 469 | 590 | 0 | 1088 | 1348 | 662 | 1599 | 641 | 1021 | 281 | 821 | 958 | 103 |
| 417 | 345 | 611 | 114 | | | | | | | | | | | | | | | |
| GBR | 648 | 488 | 1195 | 546 | 691 | 754 | 755 | 591 | 0 | 1366 | 698 | 1701 | 655 | 860 | 365 | 770 | 878 | 113 |
| 617 | 395 | 740 | 129 | | | | | | | | | | | | | | | |
| ITA | 523 | 463 | 991 | 530 | 973 | 846 | 829 | 565 | 1048 | 0 | 829 | 2142 | 804 | 1096 | 360 | 930 | 1130 | 133 |
| 463 | 483 | 844 | 156 | | | | | | | | | | | | | | | |
| NLD | 358 | 423 | 545 | 376 | 654 | 650 | 448 | 429 | 617 | 701 | 0 | 796 | 378 | 676 | 187 | 341 | 740 | 106 |
| 298 | 211 | 479 | 132 | | | | | | | | | | | | | | | |
| USA | 760 | 417 | 2279 | 600 | 764 | 826 | 778 | 650 | 1442 | 1369 | 623 | 0 | 948 | 1246 | 434 | 1504 | 1308 | 150 |
| 473 | 656 | 971 | 135 | | | | | | | | | | | | | | | |
| HUN | 300 | 238 | 604 | 265 | 489 | 426 | 454 | 366 | 517 | 622 | 273 | 821 | 0 | 583 | 276 | 510 | 715 | 82 |
| 289 | 334 | 501 | 95 | | | | | | | | | | | | | | | |
| POL | 311 | 293 | 535 | 289 | 632 | 559 | 459 | 473 | 591 | 716 | 539 | 920 | 433 | 0 | 262 | 617 | 872 | 127 |
| 341 | 377 | 654 | 141 | | | | | | | | | | | | | | | |
| ZAF | 267 | 167 | 319 | 174 | 242 | 276 | 314 | 198 | 338 | 309 | 162 | 451 | 230 | 181 | 0 | 281 | 274 | 41 |
| 215 | 198 | 288 | 47 | | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 242 | 201 | 261 | 274 | 172 | 339 | 196 | 180 | 171 | 0 | 640 | 82 |
| 284 | 392 | 484 | 81 | | | | | | | | | | | | | | | |
| CZE | 313 | 272 | 566 | 289 | 803 | 511 | 510 | 518 | 587 | 748 | 694 | 903 | 605 | 562 | 203 | 174 | 0 | 99 |
| 343 | 384 | 617 | 132 | | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 43 | 37 | 50 | 62 | 67 | 87 | 48 | 68 | 17 | 18 | 54 | 0 |
| 50 | 44 | 85 | 30 | | | | | | | | | | | | | | | |
| IRL | 350 | 296 | 350 | 308 | 357 | 388 | 377 | 343 | 673 | 426 | 304 | 439 | 246 | 250 | 206 | 156 | 262 | 28 |
| 0 | 172 | 333 | 58 | | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 462 | 138 | 194 | 220 | 258 | 172 | 290 | 388 | 145 | 732 | 273 | 269 | 157 | 166 | 263 | 18 |
| 121 | 0 | 359 | 61 | | | | | | | | | | | | | | | |
| PRT | 349 | 365 | 763 | 342 | 530 | 583 | 637 | 503 | 684 | 802 | 474 | 986 | 472 | 596 | 271 | 219 | 501 | 52 |
| 293 | 301 | 0 | 96 | | | | | | | | | | | | | | | |
| SVN | 61 | 66 | 85 | 59 | 156 | 111 | 84 | 77 | 97 | 129 | 116 | 103 | 70 | 111 | 31 | 35 | 98 | 19 |
| 48 | 39 | 74 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE | |
|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | | |
| | AUS | 0 | 379 | 767 | 411 | 770 | 696 | 544 | 732 | 786 | 691 | 806 | 945 | 420 | 492 | 456 | 296 | 494 | 497 |
| 74 | 376 | 265 | 107 | 465 | | | | | | | | | | | | | | | |
| | BEL | 323 | 0 | 437 | 384 | 611 | 481 | 416 | 552 | 510 | 522 | 732 | 526 | 296 | 385 | 220 | 196 | 304 | 386 |
| 51 | 306 | 178 | 114 | 390 | | | | | | | | | | | | | | | |
| | CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1062 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 528 | 141 | 773 | | | | | | | | | | | | | | | |
| | CHE | 357 | 367 | 534 | 0 | 817 | 517 | 474 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 210 | 103 | 411 | | | | | | | | | | | | | | | |
| | DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1182 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 431 | 213 | 825 | | | | | | | | | | | | | | | |
| | DFS | 444 | 406 | 627 | 435 | 739 | 0 | 803 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 420 | 360 | 706 | 954 |
| 122 | 488 | 355 | 171 | 704 | | | | | | | | | | | | | | | |
| | ESP | 415 | 393 | 590 | 374 | 516 | 534 | 0 | 927 | 903 | 1113 | 886 | 1277 | 589 | 725 | 282 | 344 | 728 | 725 |
| 95 | 365 | 369 | 141 | 658 | | | | | | | | | | | | | | | |
| | FRA | 439 | 498 | 563 | 410 | 618 | 501 | 582 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 448 | 337 | 987 | 1013 |
| 110 | 477 | 385 | 138 | 670 | | | | | | | | | | | | | | | |
| | GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 715 | 645 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 628 | 397 | 163 | 757 | | | | | | | | | | | | | | | |
| | ITA | 524 | 465 | 992 | 553 | 975 | 846 | 779 | 611 | 1050 | 0 | 1434 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 489 | 191 | 860 | | | | | | | | | | | | | | | |
| | NLD | 649 | 774 | 841 | 656 | 1068 | 980 | 720 | 746 | 1093 | 1067 | 0 | 1890 | 681 | 1048 | 541 | 360 | 780 | 1162 |
| 149 | 584 | 365 | 180 | 800 | | | | | | | | | | | | | | | |
| | USA | 761 | 422 | 2280 | 656 | 765 | 826 | 754 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 478 | 664 | 167 | 987 | | | | | | | | | | | | | | | |
| | HUN | 300 | 239 | 604 | 270 | 489 | 426 | 441 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 337 | 112 | 507 | | | | | | | | | | | | | | | |
| | POL | 311 | 295 | 535 | 310 | 632 | 562 | 431 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 379 | 167 | 665 | | | | | | | | | | | | | | | |
| | NZL | 364 | 169 | 272 | 185 | 231 | 260 | 230 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 151 | 52 | 264 | | | | | | | | | | | | | | | |
| | ZAF | 268 | 168 | 323 | 177 | 244 | 280 | 314 | 231 | 342 | 313 | 320 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 202 | 67 | 292 | | | | | | | | | | | | | | | |
| | JPN | 230 | 166 | 291 | 168 | 212 | 243 | 239 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 394 | 104 | 487 | | | | | | | | | | | | | | | |
| | CZE | 313 | 274 | 566 | 302 | 805 | 516 | 484 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 384 | 161 | 630 | | | | | | | | | | | | | | | |
| | EST | 35 | 35 | 44 | 26 | 72 | 55 | 38 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 35 | 87 | | | | | | | | | | | | | | | |
| | IRL | 351 | 297 | 350 | 311 | 358 | 388 | 356 | 373 | 682 | 427 | 535 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 174 | 80 | 340 | | | | | | | | | | | | | | | |
| | KOR | 185 | 109 | 463 | 139 | 194 | 220 | 254 | 179 | 290 | 388 | 228 | 738 | 274 | 269 | 99 | 161 | 166 | 263 |
| 18 | 121 | 0 | 74 | 360 | | | | | | | | | | | | | | | |
| | SVN | 81 | 89 | 102 | 75 | 182 | 137 | 101 | 93 | 123 | 160 | 150 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | | |
| | PRT | 348 | 367 | 763 | 352 | 533 | 590 | 616 | 514 | 684 | 805 | 772 | 988 | 472 | 603 | 199 | 274 | 219 | 509 |
| 53 | 292 | 302 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|-----|------|
| EST | IRL | KOR | PRT | SVN | | | | | | | | | | | | | | |
| AUS | 0 | 354 | 767 | 411 | 770 | 696 | 545 | 732 | 786 | 691 | 804 | 945 | 420 | 492 | 456 | 294 | 300 | 497 |
| 74 | 376 | 263 | 465 | 79 | | | | | | | | | | | | | | |
| BEL | 322 | 0 | 420 | 376 | 588 | 461 | 401 | 513 | 488 | 505 | 652 | 485 | 281 | 372 | 205 | 184 | 212 | 371 |
| 51 | 297 | 168 | 377 | 85 | | | | | | | | | | | | | | |
| CAN | 690 | 398 | 0 | 697 | 1636 | 969 | 1063 | 1106 | 1241 | 1416 | 1050 | 2475 | 712 | 844 | 324 | 349 | 702 | 888 |
| 110 | 372 | 525 | 773 | 116 | | | | | | | | | | | | | | |
| CHE | 357 | 365 | 534 | 0 | 817 | 517 | 474 | 507 | 580 | 633 | 699 | 762 | 337 | 444 | 223 | 203 | 264 | 439 |
| 56 | 313 | 208 | 411 | 78 | | | | | | | | | | | | | | |
| DEU | 394 | 472 | 523 | 522 | 0 | 1800 | 1183 | 1890 | 1488 | 2081 | 2110 | 2405 | 864 | 1313 | 408 | 351 | 783 | 1412 |
| 158 | 508 | 427 | 825 | 179 | | | | | | | | | | | | | | |
| DFS | 444 | 405 | 627 | 435 | 739 | 0 | 805 | 1292 | 1181 | 1275 | 1424 | 1472 | 631 | 944 | 420 | 358 | 478 | 954 |
| 122 | 488 | 352 | 704 | 139 | | | | | | | | | | | | | | |
| ESP | 416 | 392 | 591 | 374 | 517 | 536 | 0 | 929 | 906 | 1116 | 884 | 1280 | 591 | 726 | 282 | 342 | 551 | 726 |
| 95 | 366 | 367 | 659 | 113 | | | | | | | | | | | | | | |
| FRA | 439 | 493 | 563 | 411 | 619 | 502 | 585 | 0 | 1250 | 1449 | 1589 | 2048 | 696 | 1117 | 448 | 335 | 653 | 1013 |
| 110 | 477 | 382 | 670 | 114 | | | | | | | | | | | | | | |
| GBR | 648 | 486 | 1195 | 557 | 692 | 754 | 718 | 645 | 0 | 1370 | 1399 | 1711 | 659 | 872 | 432 | 368 | 531 | 885 |
| 116 | 628 | 395 | 757 | 130 | | | | | | | | | | | | | | |
| ITA | 524 | 464 | 992 | 553 | 975 | 846 | 782 | 611 | 1050 | 0 | 1433 | 2146 | 806 | 1102 | 381 | 363 | 745 | 1132 |
| 135 | 466 | 485 | 860 | 157 | | | | | | | | | | | | | | |
| NLD | 649 | 694 | 841 | 656 | 1067 | 980 | 720 | 747 | 1092 | 1067 | 0 | 1883 | 681 | 1047 | 540 | 358 | 535 | 1162 |
| 148 | 583 | 360 | 800 | 141 | | | | | | | | | | | | | | |
| USA | 761 | 413 | 2280 | 656 | 765 | 826 | 757 | 853 | 1443 | 1372 | 1372 | 0 | 950 | 1253 | 495 | 437 | 985 | 1317 |
| 151 | 478 | 659 | 987 | 135 | | | | | | | | | | | | | | |
| HUN | 300 | 237 | 604 | 270 | 489 | 426 | 442 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 277 | 392 | 717 |
| 82 | 292 | 335 | 507 | 95 | | | | | | | | | | | | | | |
| POL | 311 | 294 | 535 | 310 | 632 | 562 | 432 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 265 | 517 | 880 |
| 128 | 344 | 377 | 665 | 142 | | | | | | | | | | | | | | |
| NZL | 364 | 166 | 272 | 185 | 231 | 260 | 231 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 197 | 170 | 296 |
| 34 | 310 | 149 | 264 | 42 | | | | | | | | | | | | | | |
| ZAF | 266 | 165 | 321 | 175 | 242 | 278 | 312 | 229 | 340 | 311 | 318 | 455 | 231 | 184 | 176 | 0 | 185 | 278 |
| 41 | 217 | 198 | 290 | 48 | | | | | | | | | | | | | | |
| JPN | 189 | 138 | 248 | 149 | 183 | 211 | 197 | 177 | 215 | 242 | 202 | 282 | 165 | 169 | 95 | 128 | 0 | 499 |
| 70 | 201 | 307 | 375 | 78 | | | | | | | | | | | | | | |
| CZE | 313 | 273 | 566 | 302 | 805 | 516 | 485 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 205 | 156 | 0 |
| 103 | 346 | 383 | 630 | 133 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 38 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 87 | 31 | | | | | | | | | | | | | | |
| IRL | 351 | 295 | 350 | 311 | 358 | 388 | 357 | 373 | 682 | 427 | 535 | 439 | 246 | 251 | 256 | 207 | 132 | 262 |
| 28 | 0 | 172 | 340 | 58 | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 463 | 139 | 194 | 220 | 255 | 179 | 290 | 388 | 228 | 734 | 274 | 269 | 99 | 160 | 149 | 263 |
| 18 | 121 | 0 | 359 | 61 | | | | | | | | | | | | | | |
| PRT | 348 | 364 | 763 | 352 | 533 | 590 | 617 | 514 | 684 | 805 | 772 | 988 | 472 | 603 | 199 | 272 | 188 | 509 |
| 53 | 292 | 302 | 0 | 96 | | | | | | | | | | | | | | |
| SVN | 61 | 66 | 85 | 60 | 156 | 111 | 80 | 77 | 97 | 129 | 117 | 103 | 70 | 111 | 31 | 34 | 35 | 99 |
| 19 | 48 | 39 | 74 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | |
| AUS | 0 | 379 | 767 | 411 | 770 | 696 | 549 | 732 | 786 | 691 | 806 | 945 | 420 | 492 | 456 | 296 | 494 | 497 |
| 74 | 376 | 260 | 107 | 465 | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 437 | 384 | 611 | 481 | 420 | 552 | 510 | 522 | 732 | 526 | 296 | 385 | 220 | 196 | 304 | 386 |
| 51 | 306 | 175 | 114 | 391 | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1067 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 517 | 141 | 773 | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 477 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 206 | 103 | 411 | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1195 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 421 | 213 | 825 | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 627 | 435 | 739 | 0 | 814 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 420 | 360 | 706 | 954 |
| 122 | 488 | 351 | 171 | 705 | | | | | | | | | | | | | | |
| ESP | 419 | 395 | 593 | 378 | 532 | 543 | 0 | 936 | 913 | 1124 | 896 | 1286 | 591 | 732 | 286 | 345 | 732 | 731 |
| 97 | 368 | 362 | 142 | 663 | | | | | | | | | | | | | | |
| FRA | 439 | 498 | 563 | 410 | 618 | 502 | 593 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 448 | 337 | 987 | 1013 |
| 110 | 477 | 378 | 138 | 671 | | | | | | | | | | | | | | |
| GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 726 | 645 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 628 | 392 | 163 | 757 | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 793 | 611 | 1050 | 0 | 1434 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 480 | 191 | 861 | | | | | | | | | | | | | | |
| NLD | 649 | 774 | 841 | 656 | 1068 | 980 | 731 | 746 | 1093 | 1067 | 0 | 1890 | 681 | 1048 | 541 | 360 | 780 | 1162 |
| 149 | 584 | 359 | 180 | 801 | | | | | | | | | | | | | | |
| USA | 761 | 422 | 2280 | 656 | 765 | 827 | 762 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 478 | 654 | 167 | 988 | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 426 | 442 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 332 | 112 | 508 | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 438 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 375 | 167 | 666 | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 233 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 148 | 52 | 264 | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 280 | 316 | 231 | 342 | 313 | 320 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 201 | 67 | 292 | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 240 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 389 | 104 | 487 | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 489 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 383 | 161 | 631 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 39 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 43 | 35 | 87 | | | | | | | | | | | | | | |
| IRL | 351 | 297 | 350 | 311 | 358 | 388 | 359 | 373 | 682 | 427 | 535 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 170 | 80 | 340 | | | | | | | | | | | | | | |
| KOR | 184 | 108 | 461 | 138 | 193 | 219 | 254 | 177 | 289 | 387 | 226 | 731 | 273 | 268 | 98 | 160 | 165 | 263 |
| 18 | 120 | 0 | 73 | 356 | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 182 | 137 | 103 | 93 | 123 | 160 | 150 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | |
| PRT | 349 | 369 | 763 | 352 | 533 | 592 | 625 | 516 | 686 | 805 | 775 | 988 | 474 | 605 | 199 | 274 | 219 | 510 |
| 53 | 293 | 300 | 94 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | ZAF | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | | | | | | | | | | | | | | | | | | |
| KOR | | | | | | | | | | | | | | | | | | |
| SVN | | | | | | | | | | | | | | | | | | |
| PRT | | | | | | | | | | | | | | | | | | |
| AUS | 0 | 317 | 584 | 371 | 622 | 555 | 456 | 432 | 638 | 586 | 596 | 667 | 352 | 403 | 226 | 373 | 349 | 66 |
| 327 | 169 | 102 | 412 | | | | | | | | | | | | | | | |
| BEL | 311 | 0 | 400 | 370 | 568 | 446 | 394 | 420 | 470 | 496 | 614 | 464 | 277 | 347 | 165 | 267 | 309 | 50 |
| 283 | 127 | 111 | 369 | | | | | | | | | | | | | | | |
| CAN | 567 | 393 | 0 | 660 | 1555 | 873 | 998 | 780 | 1146 | 1378 | 913 | 2281 | 690 | 792 | 288 | 880 | 754 | 105 |
| 342 | 417 | 138 | 756 | | | | | | | | | | | | | | | |
| CHE | 342 | 361 | 519 | 0 | 817 | 516 | 478 | 411 | 580 | 633 | 668 | 762 | 335 | 418 | 183 | 338 | 361 | 56 |
| 304 | 157 | 100 | 407 | | | | | | | | | | | | | | | |
| DEU | 367 | 459 | 519 | 522 | 0 | 1799 | 1196 | 1449 | 1486 | 2081 | 1980 | 2405 | 861 | 1260 | 309 | 1025 | 1181 | 158 |
| 489 | 344 | 210 | 821 | | | | | | | | | | | | | | | |
| DFS | 422 | 400 | 624 | 435 | 739 | 0 | 808 | 892 | 1175 | 1272 | 1315 | 1470 | 626 | 890 | 308 | 662 | 767 | 122 |
| 461 | 266 | 170 | 698 | | | | | | | | | | | | | | | |
| ESP | 384 | 390 | 581 | 380 | 538 | 547 | 0 | 728 | 910 | 1127 | 844 | 1285 | 592 | 701 | 300 | 698 | 627 | 97 |
| 356 | 286 | 142 | 664 | | | | | | | | | | | | | | | |
| FRA | 327 | 395 | 434 | 337 | 446 | 414 | 496 | 0 | 880 | 1175 | 1052 | 1260 | 561 | 950 | 210 | 669 | 782 | 93 |
| 337 | 264 | 130 | 546 | | | | | | | | | | | | | | | |
| GBR | 579 | 474 | 1122 | 556 | 692 | 752 | 732 | 491 | 0 | 1368 | 1286 | 1702 | 656 | 827 | 316 | 723 | 731 | 115 |
| 582 | 306 | 160 | 751 | | | | | | | | | | | | | | | |
| ITA | 489 | 461 | 986 | 553 | 975 | 845 | 799 | 508 | 1048 | 0 | 1379 | 2144 | 803 | 1071 | 333 | 908 | 997 | 135 |
| 455 | 401 | 188 | 857 | | | | | | | | | | | | | | | |
| NLD | 540 | 653 | 764 | 627 | 1016 | 951 | 695 | 553 | 1015 | 1033 | 0 | 1559 | 643 | 974 | 293 | 677 | 994 | 145 |
| 521 | 274 | 177 | 772 | | | | | | | | | | | | | | | |
| USA | 620 | 408 | 2167 | 656 | 765 | 826 | 765 | 519 | 1442 | 1372 | 1103 | 0 | 947 | 1201 | 373 | 1375 | 1109 | 151 |
| 450 | 523 | 164 | 980 | | | | | | | | | | | | | | | |
| HUN | 279 | 233 | 598 | 270 | 489 | 426 | 445 | 323 | 517 | 623 | 469 | 822 | 0 | 559 | 252 | 494 | 601 | 82 |
| 278 | 278 | 110 | 506 | | | | | | | | | | | | | | | |
| POL | 293 | 282 | 514 | 297 | 611 | 538 | 413 | 466 | 572 | 706 | 684 | 891 | 415 | 0 | 228 | 584 | 778 | 126 |
| 307 | 328 | 164 | 643 | | | | | | | | | | | | | | | |
| ZAF | 226 | 154 | 278 | 162 | 220 | 257 | 276 | 157 | 294 | 287 | 262 | 375 | 216 | 170 | 0 | 232 | 219 | 41 |
| 179 | 137 | 66 | 276 | | | | | | | | | | | | | | | |
| JPN | 223 | 165 | 287 | 168 | 211 | 241 | 236 | 181 | 258 | 272 | 239 | 334 | 194 | 174 | 166 | 0 | 530 | 80 |
| 258 | 304 | 104 | 480 | | | | | | | | | | | | | | | |
| CZE | 252 | 229 | 488 | 246 | 676 | 436 | 392 | 408 | 477 | 652 | 829 | 754 | 496 | 510 | 158 | 160 | 0 | 95 |
| 268 | 313 | 152 | 558 | | | | | | | | | | | | | | | |
| EST | 34 | 35 | 44 | 26 | 72 | 55 | 39 | 33 | 50 | 62 | 85 | 87 | 48 | 67 | 18 | 18 | 50 | 0 |
| 50 | 38 | 35 | 87 | | | | | | | | | | | | | | | |
| IRL | 326 | 288 | 347 | 308 | 356 | 386 | 360 | 286 | 647 | 425 | 505 | 433 | 244 | 238 | 179 | 155 | 208 | 28 |
| 0 | 117 | 79 | 326 | | | | | | | | | | | | | | | |
| KOR | 125 | 89 | 373 | 112 | 158 | 176 | 191 | 152 | 215 | 322 | 171 | 579 | 225 | 246 | 103 | 134 | 219 | 16 |
| 86 | 0 | 65 | 300 | | | | | | | | | | | | | | | |
| SVN | 80 | 87 | 101 | 74 | 180 | 137 | 103 | 89 | 122 | 158 | 147 | 125 | 83 | 130 | 47 | 50 | 115 | 23 |
| 62 | 44 | 0 | 121 | | | | | | | | | | | | | | | |
| PRT | 343 | 361 | 742 | 349 | 533 | 589 | 627 | 459 | 684 | 805 | 753 | 986 | 473 | 592 | 264 | 217 | 451 | 53 |
| 290 | 256 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | ZAF | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | | | | | | | | | | | | | | | | | | |
| KOR | | | | | | | | | | | | | | | | | | |
| SVN | | | | | | | | | | | | | | | | | | |
| PRT | | | | | | | | | | | | | | | | | | |
| AUS | 0 | 351 | 759 | 410 | 450 | 690 | 549 | 722 | 780 | 688 | 769 | 937 | 418 | 488 | 296 | 493 | 494 | 72 |
| 373 | 263 | 105 | 464 | | | | | | | | | | | | | | | |
| BEL | 322 | 0 | 417 | 374 | 436 | 458 | 410 | 506 | 487 | 501 | 644 | 483 | 280 | 370 | 185 | 282 | 369 | 50 |
| 296 | 169 | 113 | 378 | | | | | | | | | | | | | | | |
| CAN | 689 | 398 | 0 | 696 | 1165 | 968 | 1072 | 1090 | 1241 | 1413 | 1006 | 2475 | 709 | 839 | 351 | 1004 | 882 | 107 |
| 372 | 522 | 139 | 772 | | | | | | | | | | | | | | | |
| CHE | 357 | 365 | 534 | 0 | 576 | 516 | 482 | 498 | 579 | 630 | 689 | 761 | 336 | 442 | 205 | 345 | 436 | 56 |
| 313 | 208 | 102 | 410 | | | | | | | | | | | | | | | |
| DEU | 297 | 372 | 426 | 394 | 0 | 1101 | 900 | 1176 | 980 | 1557 | 1373 | 1564 | 611 | 1007 | 211 | 701 | 1005 | 127 |
| 322 | 320 | 190 | 602 | | | | | | | | | | | | | | | |
| DFS | 444 | 404 | 627 | 435 | 572 | 0 | 827 | 1262 | 1178 | 1268 | 1375 | 1468 | 626 | 938 | 360 | 706 | 946 | 119 |
| 487 | 353 | 169 | 704 | | | | | | | | | | | | | | | |
| ESP | 426 | 405 | 598 | 384 | 397 | 557 | 0 | 940 | 927 | 1135 | 891 | 1301 | 596 | 741 | 349 | 737 | 739 | 97 |
| 377 | 370 | 143 | 674 | | | | | | | | | | | | | | | |
| FRA | 437 | 489 | 563 | 410 | 394 | 501 | 620 | 0 | 1235 | 1441 | 1429 | 2007 | 692 | 1106 | 336 | 974 | 1006 | 107 |
| 471 | 377 | 137 | 669 | | | | | | | | | | | | | | | |
| GBR | 647 | 486 | 1195 | 557 | 509 | 754 | 748 | 645 | 0 | 1368 | 1356 | 1708 | 657 | 867 | 369 | 771 | 879 | 115 |
| 622 | 396 | 162 | 755 | | | | | | | | | | | | | | | |
| ITA | 524 | 463 | 992 | 552 | 734 | 844 | 816 | 610 | 1049 | 0 | 1407 | 2144 | 801 | 1095 | 364 | 928 | 1128 | 133 |
| 464 | 483 | 189 | 859 | | | | | | | | | | | | | | | |
| NLD | 640 | 691 | 828 | 653 | 755 | 976 | 747 | 704 | 1072 | 1060 | 0 | 1718 | 663 | 1023 | 348 | 739 | 1147 | 146 |
| 570 | 354 | 178 | 791 | | | | | | | | | | | | | | | |
| USA | 759 | 413 | 2280 | 656 | 545 | 826 | 775 | 817 | 1443 | 1372 | 1322 | 0 | 947 | 1246 | 439 | 1504 | 1312 | 150 |
| 476 | 655 | 165 | 985 | | | | | | | | | | | | | | | |
| HUN | 300 | 236 | 604 | 270 | 355 | 423 | 449 | 383 | 518 | 621 | 480 | 822 | 0 | 583 | 278 | 509 | 713 | 80 |
| 291 | 335 | 110 | 507 | | | | | | | | | | | | | | | |
| POL | 311 | 293 | 535 | 309 | 529 | 559 | 450 | 516 | 593 | 715 | 710 | 921 | 431 | 0 | 266 | 616 | 872 | 124 |
| 342 | 377 | 164 | 665 | | | | | | | | | | | | | | | |
| ZAF | 268 | 166 | 323 | 177 | 153 | 280 | 318 | 231 | 342 | 313 | 314 | 457 | 232 | 186 | 0 | 284 | 279 | 42 |
| 219 | 201 | 67 | 292 | | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 174 | 243 | 242 | 207 | 261 | 274 | 243 | 339 | 196 | 180 | 175 | 0 | 637 | 81 |
| 285 | 393 | 102 | 489 | | | | | | | | | | | | | | | |
| CZE | 313 | 271 | 566 | 301 | 606 | 515 | 503 | 553 | 588 | 746 | 937 | 906 | 603 | 563 | 206 | 174 | 0 | 99 |
| 345 | 383 | 159 | 627 | | | | | | | | | | | | | | | |
| EST | 35 | 34 | 44 | 26 | 58 | 54 | 41 | 37 | 49 | 61 | 85 | 87 | 47 | 65 | 18 | 18 | 53 | 0 |
| 51 | 44 | 34 | 86 | | | | | | | | | | | | | | | |
| IRL | 349 | 295 | 350 | 311 | 259 | 388 | 372 | 373 | 676 | 427 | 531 | 439 | 246 | 251 | 209 | 156 | 262 | 28 |
| 0 | 172 | 79 | 339 | | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 461 | 139 | 162 | 220 | 256 | 178 | 290 | 388 | 223 | 725 | 273 | 269 | 160 | 166 | 263 | 18 |
| 121 | 0 | 74 | 357 | | | | | | | | | | | | | | | |
| SVN | 81 | 88 | 102 | 75 | 171 | 135 | 107 | 93 | 123 | 158 | 149 | 126 | 83 | 129 | 47 | 50 | 118 | 22 |
| 62 | 46 | 0 | 121 | | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 353 | 435 | 592 | 639 | 517 | 688 | 807 | 771 | 991 | 476 | 607 | 274 | 219 | 512 | 52 |
| 294 | 301 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE | |
|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | | |
| | AUS | 0 | 373 | 767 | 411 | 770 | 695 | 556 | 684 | 786 | 691 | 751 | 945 | 420 | 491 | 456 | 296 | 494 | 497 |
| 74 | 376 | 264 | 107 | 465 | | | | | | | | | | | | | | | |
| | BEL | 323 | 0 | 433 | 383 | 606 | 477 | 426 | 533 | 505 | 520 | 685 | 513 | 294 | 383 | 217 | 195 | 298 | 385 |
| 51 | 305 | 177 | 114 | 390 | | | | | | | | | | | | | | | |
| | CAN | 690 | 403 | 0 | 697 | 1635 | 969 | 1072 | 1028 | 1241 | 1416 | 978 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 526 | 141 | 773 | | | | | | | | | | | | | | | |
| | CHE | 357 | 366 | 534 | 0 | 817 | 517 | 482 | 495 | 580 | 633 | 678 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 209 | 103 | 411 | | | | | | | | | | | | | | | |
| | DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1211 | 1853 | 1488 | 2081 | 2025 | 2405 | 864 | 1312 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 428 | 213 | 825 | | | | | | | | | | | | | | | |
| | DFS | 444 | 406 | 627 | 435 | 739 | 0 | 827 | 1213 | 1180 | 1274 | 1353 | 1471 | 630 | 943 | 419 | 360 | 706 | 954 |
| 122 | 487 | 354 | 171 | 704 | | | | | | | | | | | | | | | |
| | ESP | 426 | 406 | 598 | 384 | 555 | 557 | 0 | 914 | 928 | 1138 | 878 | 1301 | 599 | 745 | 294 | 349 | 737 | 742 |
| 99 | 377 | 372 | 145 | 674 | | | | | | | | | | | | | | | |
| | FRA | 437 | 496 | 560 | 410 | 615 | 499 | 620 | 0 | 1195 | 1427 | 1393 | 1848 | 682 | 1105 | 415 | 322 | 909 | 1003 |
| 107 | 459 | 366 | 138 | 662 | | | | | | | | | | | | | | | |
| | GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 748 | 640 | 0 | 1370 | 1336 | 1710 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 626 | 396 | 163 | 757 | | | | | | | | | | | | | | | |
| | ITA | 524 | 465 | 992 | 553 | 975 | 846 | 816 | 610 | 1050 | 0 | 1395 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 487 | 191 | 860 | | | | | | | | | | | | | | | |
| | NLD | 618 | 725 | 785 | 632 | 1029 | 955 | 721 | 693 | 1040 | 1036 | 0 | 1655 | 660 | 1026 | 514 | 341 | 711 | 1145 |
| 146 | 570 | 347 | 180 | 782 | | | | | | | | | | | | | | | |
| | USA | 761 | 422 | 2280 | 656 | 765 | 827 | 775 | 782 | 1443 | 1372 | 1135 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 477 | 662 | 167 | 987 | | | | | | | | | | | | | | | |
| | HUN | 300 | 239 | 604 | 270 | 489 | 426 | 449 | 382 | 518 | 623 | 466 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 337 | 112 | 507 | | | | | | | | | | | | | | | |
| | POL | 311 | 295 | 535 | 310 | 632 | 562 | 451 | 516 | 595 | 718 | 710 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 379 | 167 | 665 | | | | | | | | | | | | | | | |
| | NZL | 364 | 169 | 272 | 185 | 231 | 260 | 239 | 210 | 333 | 287 | 456 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 150 | 52 | 264 | | | | | | | | | | | | | | | |
| | ZAF | 268 | 168 | 323 | 177 | 244 | 280 | 318 | 229 | 342 | 313 | 300 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 201 | 67 | 292 | | | | | | | | | | | | | | | |
| | JPN | 230 | 166 | 291 | 168 | 212 | 243 | 242 | 207 | 261 | 274 | 242 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 393 | 104 | 487 | | | | | | | | | | | | | | | |
| | CZE | 313 | 274 | 566 | 302 | 805 | 516 | 503 | 551 | 589 | 748 | 924 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 384 | 161 | 630 | | | | | | | | | | | | | | | |
| | EST | 35 | 35 | 44 | 26 | 72 | 55 | 41 | 37 | 50 | 62 | 85 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 35 | 87 | | | | | | | | | | | | | | | |
| | IRL | 351 | 297 | 350 | 311 | 358 | 388 | 372 | 371 | 680 | 427 | 520 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 173 | 80 | 340 | | | | | | | | | | | | | | | |
| | KOR | 185 | 109 | 462 | 139 | 194 | 220 | 258 | 178 | 290 | 388 | 218 | 734 | 274 | 269 | 99 | 160 | 166 | 263 |
| 18 | 121 | 0 | 74 | 360 | | | | | | | | | | | | | | | |
| | SVN | 81 | 89 | 102 | 75 | 182 | 137 | 107 | 93 | 123 | 160 | 148 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | | |
| | PRT | 349 | 367 | 763 | 352 | 533 | 591 | 635 | 513 | 685 | 805 | 757 | 988 | 472 | 604 | 199 | 274 | 219 | 509 |
| 53 | 293 | 302 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | |
| AUS | 0 | 373 | 767 | 411 | 770 | 651 | 550 | 729 | 786 | 691 | 781 | 945 | 420 | 492 | 456 | 296 | 494 | 497 |
| 74 | 376 | 264 | 107 | 464 | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 433 | 383 | 606 | 473 | 420 | 541 | 505 | 520 | 697 | 513 | 294 | 383 | 217 | 195 | 298 | 385 |
| 51 | 305 | 177 | 114 | 389 | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1636 | 891 | 1068 | 1091 | 1241 | 1416 | 1022 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 527 | 141 | 771 | | | | | | | | | | | | | | |
| CHE | 357 | 366 | 534 | 0 | 817 | 498 | 479 | 502 | 580 | 633 | 693 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 209 | 103 | 411 | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1713 | 1197 | 1877 | 1488 | 2081 | 2074 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 429 | 213 | 823 | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 627 | 435 | 738 | 0 | 773 | 1182 | 1122 | 1249 | 1356 | 1378 | 614 | 922 | 392 | 333 | 652 | 923 |
| 118 | 470 | 341 | 171 | 694 | | | | | | | | | | | | | | |
| ESP | 419 | 396 | 594 | 380 | 534 | 545 | 0 | 926 | 915 | 1126 | 883 | 1288 | 592 | 734 | 287 | 347 | 733 | 732 |
| 97 | 369 | 370 | 142 | 662 | | | | | | | | | | | | | | |
| FRA | 439 | 498 | 563 | 410 | 616 | 501 | 596 | 0 | 1237 | 1442 | 1478 | 2009 | 694 | 1113 | 444 | 336 | 974 | 1009 |
| 109 | 472 | 380 | 138 | 666 | | | | | | | | | | | | | | |
| GBR | 648 | 490 | 1194 | 557 | 691 | 753 | 726 | 644 | 0 | 1370 | 1373 | 1710 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 626 | 396 | 163 | 755 | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 845 | 795 | 611 | 1049 | 0 | 1422 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 487 | 191 | 859 | | | | | | | | | | | | | | |
| NLD | 645 | 746 | 834 | 655 | 1060 | 979 | 731 | 722 | 1080 | 1066 | 0 | 1763 | 672 | 1039 | 528 | 350 | 747 | 1158 |
| 148 | 577 | 359 | 180 | 794 | | | | | | | | | | | | | | |
| USA | 761 | 422 | 2280 | 656 | 765 | 826 | 764 | 818 | 1443 | 1372 | 1338 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 477 | 663 | 167 | 985 | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 426 | 444 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 337 | 112 | 507 | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 440 | 516 | 595 | 718 | 718 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 379 | 167 | 663 | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 233 | 212 | 333 | 287 | 476 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 150 | 52 | 264 | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 280 | 317 | 231 | 342 | 313 | 318 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 201 | 67 | 291 | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 241 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 393 | 104 | 487 | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 491 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 384 | 161 | 629 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 39 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 35 | 86 | | | | | | | | | | | | | | |
| IRL | 351 | 297 | 350 | 311 | 358 | 388 | 360 | 373 | 680 | 427 | 532 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 173 | 80 | 340 | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 463 | 139 | 194 | 220 | 257 | 179 | 290 | 388 | 225 | 735 | 274 | 269 | 99 | 161 | 166 | 263 |
| 18 | 121 | 0 | 74 | 360 | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 182 | 137 | 103 | 93 | 123 | 160 | 150 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 352 | 533 | 588 | 625 | 515 | 685 | 805 | 770 | 988 | 472 | 604 | 199 | 274 | 219 | 509 |
| 53 | 293 | 302 | 94 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | |
| AUS | 0 | 373 | 767 | 411 | 770 | 696 | 560 | 732 | 786 | 691 | 806 | 945 | 420 | 492 | 456 | 296 | 494 | 497 |
| 74 | 376 | 259 | 107 | 465 | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 433 | 383 | 606 | 478 | 427 | 542 | 505 | 520 | 703 | 513 | 294 | 383 | 217 | 195 | 298 | 385 |
| 51 | 305 | 174 | 114 | 391 | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1075 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 516 | 141 | 773 | | | | | | | | | | | | | | |
| CHE | 357 | 366 | 534 | 0 | 817 | 517 | 483 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 205 | 103 | 411 | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1220 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 420 | 213 | 825 | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 628 | 435 | 739 | 0 | 834 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 420 | 360 | 706 | 954 |
| 122 | 488 | 350 | 171 | 705 | | | | | | | | | | | | | | |
| ESP | 428 | 409 | 600 | 385 | 569 | 565 | 0 | 960 | 933 | 1147 | 924 | 1306 | 602 | 751 | 296 | 349 | 740 | 748 |
| 100 | 381 | 365 | 145 | 677 | | | | | | | | | | | | | | |
| FRA | 439 | 498 | 563 | 410 | 618 | 502 | 634 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 448 | 337 | 987 | 1013 |
| 110 | 477 | 377 | 138 | 671 | | | | | | | | | | | | | | |
| GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 754 | 645 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 628 | 391 | 163 | 757 | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 828 | 611 | 1050 | 0 | 1434 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 479 | 191 | 861 | | | | | | | | | | | | | | |
| NLD | 649 | 753 | 841 | 656 | 1068 | 980 | 764 | 746 | 1093 | 1067 | 0 | 1890 | 681 | 1048 | 541 | 360 | 780 | 1162 |
| 149 | 584 | 358 | 180 | 801 | | | | | | | | | | | | | | |
| USA | 761 | 422 | 2280 | 656 | 765 | 828 | 778 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 478 | 652 | 167 | 988 | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 427 | 453 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 331 | 112 | 508 | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 457 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 374 | 167 | 666 | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 240 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 147 | 52 | 264 | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 281 | 318 | 231 | 342 | 313 | 320 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 200 | 67 | 292 | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 242 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 388 | 104 | 487 | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 508 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 383 | 161 | 631 | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 42 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 43 | 35 | 87 | | | | | | | | | | | | | | |
| IRL | 351 | 297 | 350 | 311 | 358 | 388 | 376 | 373 | 682 | 427 | 535 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 169 | 80 | 340 | | | | | | | | | | | | | | |
| KOR | 183 | 107 | 460 | 137 | 192 | 218 | 255 | 176 | 288 | 386 | 225 | 729 | 272 | 268 | 97 | 159 | 164 | 263 |
| 18 | 119 | 0 | 73 | 355 | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 182 | 137 | 107 | 93 | 123 | 160 | 150 | 126 | 84 | 131 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 122 | | | | | | | | | | | | | | |
| PRT | 349 | 369 | 763 | 352 | 533 | 592 | 637 | 516 | 686 | 805 | 775 | 988 | 474 | 605 | 199 | 274 | 219 | 510 |
| 53 | 293 | 299 | 94 | 0 | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | ZAF | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | | | | | | | | | | | | | | | | | | |
| KOR | | | | | | | | | | | | | | | | | | |
| SVN | | | | | | | | | | | | | | | | | | |
| PRT | | | | | | | | | | | | | | | | | | |
| AUS | 0 | 376 | 759 | 410 | 768 | 692 | 540 | 724 | 780 | 690 | 802 | 937 | 420 | 490 | 296 | 493 | 496 | 74 |
| 373 | 264 | 107 | 463 | | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 435 | 383 | 607 | 479 | 418 | 548 | 508 | 519 | 728 | 523 | 294 | 383 | 195 | 302 | 384 | 51 |
| 304 | 175 | 114 | 388 | | | | | | | | | | | | | | | |
| CAN | 689 | 402 | 0 | 697 | 1636 | 969 | 1065 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 351 | 1004 | 888 | 110 |
| 372 | 526 | 141 | 773 | | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 475 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 205 | 346 | 439 | 56 |
| 313 | 209 | 103 | 411 | | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1188 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 353 | 1061 | 1412 | 158 |
| 508 | 428 | 213 | 825 | | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 628 | 435 | 739 | 0 | 809 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 360 | 706 | 954 | 122 |
| 488 | 353 | 171 | 704 | | | | | | | | | | | | | | | |
| ESP | 417 | 395 | 592 | 376 | 524 | 539 | 0 | 932 | 910 | 1119 | 892 | 1283 | 591 | 729 | 344 | 732 | 728 | 96 |
| 367 | 368 | 141 | 661 | | | | | | | | | | | | | | | |
| FRA | 438 | 498 | 563 | 410 | 618 | 502 | 588 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 337 | 987 | 1013 | 110 |
| 477 | 383 | 138 | 670 | | | | | | | | | | | | | | | |
| GBR | 647 | 491 | 1195 | 557 | 692 | 754 | 722 | 645 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 370 | 771 | 885 | 116 |
| 625 | 396 | 163 | 757 | | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 787 | 611 | 1050 | 0 | 1434 | 2146 | 806 | 1102 | 365 | 931 | 1132 | 135 |
| 466 | 486 | 191 | 860 | | | | | | | | | | | | | | | |
| NLD | 649 | 770 | 841 | 656 | 1068 | 980 | 726 | 746 | 1093 | 1067 | 0 | 1890 | 681 | 1048 | 360 | 780 | 1162 | 149 |
| 584 | 362 | 180 | 800 | | | | | | | | | | | | | | | |
| USA | 759 | 421 | 2280 | 656 | 765 | 828 | 760 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 439 | 1504 | 1317 | 151 |
| 478 | 661 | 167 | 987 | | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 427 | 442 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 279 | 510 | 717 | 82 |
| 292 | 336 | 112 | 507 | | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 435 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 267 | 619 | 880 | 128 |
| 344 | 378 | 167 | 665 | | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 281 | 314 | 231 | 342 | 313 | 320 | 457 | 232 | 186 | 0 | 284 | 280 | 42 |
| 219 | 201 | 67 | 292 | | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 240 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 175 | 0 | 640 | 82 |
| 285 | 393 | 104 | 487 | | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 486 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 206 | 174 | 0 | 103 |
| 346 | 384 | 161 | 630 | | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 38 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 18 | 18 | 55 | 0 |
| 52 | 44 | 35 | 87 | | | | | | | | | | | | | | | |
| IRL | 349 | 297 | 350 | 311 | 358 | 388 | 357 | 373 | 679 | 427 | 535 | 439 | 246 | 251 | 209 | 156 | 262 | 28 |
| 0 | 173 | 80 | 340 | | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 463 | 139 | 194 | 220 | 256 | 179 | 290 | 388 | 228 | 735 | 274 | 269 | 161 | 166 | 263 | 18 |
| 121 | 0 | 74 | 360 | | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 182 | 137 | 101 | 93 | 123 | 160 | 150 | 126 | 84 | 131 | 47 | 50 | 119 | 23 |
| 62 | 46 | 0 | 122 | | | | | | | | | | | | | | | |
| PRT | 348 | 366 | 763 | 352 | 533 | 590 | 620 | 514 | 684 | 805 | 772 | 988 | 472 | 603 | 274 | 219 | 509 | 53 |
| 292 | 302 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | ZAF | JPN | CZE | |
|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|-----|------|------|
| EST | IRL | KOR | SVN | PRT | | | | | | | | | | | | | | | |
| | AUS | 0 | 373 | 767 | 411 | 770 | 696 | 550 | 732 | 786 | 691 | 806 | 945 | 420 | 492 | 456 | 296 | 494 | 497 |
| 74 | 376 | 264 | 105 | 465 | | | | | | | | | | | | | | | |
| | BEL | 323 | 0 | 433 | 383 | 606 | 478 | 420 | 542 | 505 | 520 | 703 | 513 | 294 | 383 | 217 | 195 | 298 | 385 |
| 51 | 305 | 177 | 112 | 390 | | | | | | | | | | | | | | | |
| | CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1067 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 324 | 351 | 1004 | 888 |
| 110 | 372 | 527 | 139 | 773 | | | | | | | | | | | | | | | |
| | CHE | 357 | 366 | 534 | 0 | 817 | 517 | 478 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 223 | 205 | 346 | 439 |
| 56 | 313 | 209 | 101 | 411 | | | | | | | | | | | | | | | |
| | DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1196 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 408 | 353 | 1061 | 1412 |
| 158 | 508 | 429 | 211 | 825 | | | | | | | | | | | | | | | |
| | DFS | 444 | 406 | 628 | 435 | 739 | 0 | 814 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 420 | 360 | 706 | 954 |
| 122 | 488 | 354 | 170 | 704 | | | | | | | | | | | | | | | |
| | ESP | 419 | 396 | 593 | 379 | 533 | 544 | 0 | 937 | 914 | 1125 | 897 | 1287 | 591 | 733 | 287 | 346 | 732 | 731 |
| 97 | 368 | 369 | 141 | 663 | | | | | | | | | | | | | | | |
| | FRA | 439 | 498 | 563 | 410 | 618 | 502 | 595 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 448 | 337 | 987 | 1013 |
| 110 | 477 | 384 | 136 | 670 | | | | | | | | | | | | | | | |
| | GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 727 | 645 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 432 | 370 | 771 | 885 |
| 116 | 628 | 396 | 161 | 757 | | | | | | | | | | | | | | | |
| | ITA | 524 | 465 | 992 | 553 | 975 | 846 | 794 | 611 | 1050 | 0 | 1434 | 2146 | 806 | 1102 | 381 | 365 | 931 | 1132 |
| 135 | 466 | 487 | 189 | 860 | | | | | | | | | | | | | | | |
| | NLD | 649 | 753 | 841 | 656 | 1068 | 980 | 732 | 746 | 1093 | 1067 | 0 | 1890 | 681 | 1048 | 541 | 360 | 780 | 1162 |
| 149 | 584 | 364 | 178 | 800 | | | | | | | | | | | | | | | |
| | USA | 761 | 422 | 2280 | 656 | 765 | 827 | 763 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 495 | 439 | 1504 | 1317 |
| 151 | 478 | 663 | 165 | 987 | | | | | | | | | | | | | | | |
| | HUN | 300 | 239 | 604 | 270 | 489 | 427 | 443 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 279 | 510 | 717 |
| 82 | 292 | 337 | 110 | 507 | | | | | | | | | | | | | | | |
| | POL | 311 | 295 | 535 | 310 | 632 | 562 | 439 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 267 | 619 | 880 |
| 128 | 344 | 379 | 165 | 665 | | | | | | | | | | | | | | | |
| | NZL | 364 | 169 | 272 | 185 | 231 | 260 | 233 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 198 | 284 | 296 |
| 34 | 310 | 150 | 52 | 264 | | | | | | | | | | | | | | | |
| | ZAF | 268 | 168 | 323 | 177 | 244 | 281 | 316 | 231 | 342 | 313 | 320 | 457 | 232 | 186 | 176 | 0 | 284 | 280 |
| 42 | 219 | 201 | 66 | 292 | | | | | | | | | | | | | | | |
| | JPN | 230 | 166 | 291 | 168 | 212 | 243 | 240 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 175 | 0 | 640 |
| 82 | 285 | 393 | 103 | 487 | | | | | | | | | | | | | | | |
| | CZE | 313 | 274 | 566 | 302 | 805 | 516 | 490 | 553 | 589 | 748 | 940 | 906 | 605 | 566 | 188 | 206 | 174 | 0 |
| 103 | 346 | 384 | 159 | 630 | | | | | | | | | | | | | | | |
| | EST | 35 | 35 | 44 | 26 | 72 | 55 | 39 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 18 | 55 |
| 0 | 52 | 44 | 34 | 87 | | | | | | | | | | | | | | | |
| | IRL | 351 | 297 | 350 | 311 | 358 | 388 | 359 | 373 | 682 | 427 | 535 | 439 | 246 | 251 | 256 | 209 | 156 | 262 |
| 28 | 0 | 173 | 79 | 340 | | | | | | | | | | | | | | | |
| | KOR | 185 | 109 | 463 | 139 | 194 | 220 | 256 | 179 | 290 | 388 | 228 | 735 | 274 | 269 | 99 | 161 | 166 | 263 |
| 18 | 121 | 0 | 73 | 360 | | | | | | | | | | | | | | | |
| | SVN | 81 | 89 | 102 | 75 | 181 | 137 | 103 | 93 | 123 | 159 | 149 | 125 | 83 | 130 | 38 | 47 | 50 | 119 |
| 23 | 62 | 46 | 0 | 121 | | | | | | | | | | | | | | | |
| | PRT | 349 | 367 | 763 | 352 | 533 | 591 | 624 | 515 | 685 | 805 | 773 | 988 | 472 | 604 | 199 | 274 | 219 | 509 |
| 53 | 293 | 302 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | ZAF | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | | | | | | | | | | | | | | | | | | |
| KOR | | | | | | | | | | | | | | | | | | |
| SVN | | | | | | | | | | | | | | | | | | |
| PRT | | | | | | | | | | | | | | | | | | |
| AUS | 0 | 378 | 759 | 410 | 768 | 692 | 540 | 724 | 780 | 690 | 802 | 937 | 408 | 490 | 296 | 486 | 496 | 74 |
| 373 | 265 | 105 | 463 | | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 437 | 384 | 611 | 481 | 419 | 552 | 510 | 522 | 732 | 526 | 292 | 385 | 196 | 304 | 386 | 51 |
| 306 | 178 | 112 | 390 | | | | | | | | | | | | | | | |
| CAN | 689 | 403 | 0 | 697 | 1636 | 969 | 1065 | 1106 | 1241 | 1416 | 1053 | 2475 | 698 | 844 | 351 | 997 | 887 | 110 |
| 372 | 528 | 139 | 773 | | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 475 | 506 | 580 | 633 | 701 | 762 | 331 | 444 | 205 | 346 | 439 | 56 |
| 313 | 210 | 101 | 411 | | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1188 | 1889 | 1488 | 2081 | 2115 | 2405 | 846 | 1313 | 353 | 1058 | 1412 | 158 |
| 508 | 431 | 211 | 825 | | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 628 | 435 | 739 | 0 | 809 | 1292 | 1181 | 1275 | 1432 | 1472 | 616 | 944 | 360 | 700 | 954 | 122 |
| 488 | 355 | 170 | 704 | | | | | | | | | | | | | | | |
| ESP | 417 | 395 | 592 | 376 | 525 | 539 | 0 | 932 | 910 | 1119 | 892 | 1283 | 581 | 729 | 344 | 723 | 728 | 96 |
| 367 | 370 | 140 | 661 | | | | | | | | | | | | | | | |
| FRA | 438 | 498 | 563 | 410 | 618 | 502 | 588 | 0 | 1250 | 1449 | 1600 | 2048 | 678 | 1117 | 337 | 974 | 1013 | 110 |
| 477 | 385 | 136 | 670 | | | | | | | | | | | | | | | |
| GBR | 647 | 491 | 1195 | 557 | 692 | 754 | 723 | 645 | 0 | 1370 | 1401 | 1711 | 644 | 872 | 370 | 766 | 885 | 116 |
| 625 | 397 | 161 | 757 | | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 788 | 611 | 1050 | 0 | 1434 | 2146 | 797 | 1102 | 365 | 926 | 1132 | 135 |
| 466 | 489 | 189 | 860 | | | | | | | | | | | | | | | |
| NLD | 649 | 774 | 841 | 656 | 1068 | 980 | 727 | 746 | 1093 | 1067 | 0 | 1890 | 663 | 1048 | 360 | 773 | 1162 | 149 |
| 584 | 365 | 178 | 800 | | | | | | | | | | | | | | | |
| USA | 759 | 422 | 2280 | 656 | 765 | 828 | 760 | 853 | 1443 | 1372 | 1375 | 0 | 920 | 1253 | 439 | 1485 | 1316 | 151 |
| 478 | 664 | 165 | 987 | | | | | | | | | | | | | | | |
| HUN | 289 | 232 | 590 | 266 | 480 | 418 | 428 | 375 | 502 | 612 | 470 | 796 | 0 | 580 | 270 | 500 | 704 | 82 |
| 285 | 335 | 110 | 505 | | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 435 | 516 | 595 | 718 | 719 | 921 | 429 | 0 | 267 | 617 | 880 | 128 |
| 344 | 379 | 165 | 665 | | | | | | | | | | | | | | | |
| ZAF | 268 | 168 | 323 | 177 | 244 | 281 | 314 | 231 | 342 | 313 | 320 | 457 | 221 | 186 | 0 | 282 | 280 | 42 |
| 219 | 202 | 66 | 292 | | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 240 | 207 | 261 | 274 | 244 | 339 | 190 | 180 | 175 | 0 | 639 | 81 |
| 283 | 394 | 103 | 487 | | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 487 | 553 | 589 | 748 | 940 | 906 | 593 | 566 | 206 | 174 | 0 | 103 |
| 346 | 384 | 159 | 630 | | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 38 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 18 | 18 | 55 | 0 |
| 52 | 44 | 34 | 87 | | | | | | | | | | | | | | | |
| IRL | 349 | 297 | 350 | 311 | 358 | 388 | 358 | 373 | 679 | 427 | 535 | 439 | 238 | 251 | 209 | 156 | 262 | 28 |
| 0 | 174 | 79 | 340 | | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 463 | 139 | 194 | 220 | 256 | 179 | 290 | 388 | 228 | 738 | 272 | 269 | 161 | 166 | 263 | 18 |
| 121 | 0 | 73 | 360 | | | | | | | | | | | | | | | |
| SVN | 81 | 89 | 102 | 75 | 181 | 137 | 101 | 93 | 123 | 159 | 149 | 125 | 83 | 130 | 47 | 50 | 119 | 23 |
| 62 | 46 | 0 | 121 | | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 352 | 533 | 591 | 622 | 515 | 685 | 805 | 773 | 988 | 469 | 604 | 274 | 219 | 509 | 53 |
| 293 | 302 | 94 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | POL | NZL | JPN | CZE | EST | IRL | |
|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|------|-----|-----|------|-----|-----|
| KOR | SVN | PRT | ZAF | HUN | | | | | | | | | | | | | | | |
| | AUS | 0 | 302 | 524 | 338 | 538 | 462 | 413 | 469 | 552 | 521 | 519 | 539 | 347 | 292 | 269 | 328 | 60 | 286 |
| 140 | 101 | 333 | 152 | 244 | | | | | | | | | | | | | | | |
| | BEL | 297 | 0 | 427 | 362 | 575 | 434 | 415 | 529 | 449 | 510 | 609 | 434 | 310 | 210 | 214 | 314 | 51 | 261 |
| 111 | 112 | 333 | 110 | 203 | | | | | | | | | | | | | | | |
| | CAN | 523 | 401 | 0 | 661 | 1568 | 811 | 1067 | 1104 | 1060 | 1411 | 897 | 2063 | 738 | 317 | 702 | 757 | 108 | 306 |
| 346 | 139 | 654 | 199 | 540 | | | | | | | | | | | | | | | |
| | CHE | 319 | 351 | 504 | 0 | 706 | 452 | 472 | 492 | 526 | 605 | 573 | 648 | 356 | 217 | 263 | 347 | 54 | 265 |
| 132 | 99 | 343 | 116 | 243 | | | | | | | | | | | | | | | |
| | DEU | 338 | 464 | 511 | 456 | 0 | 1556 | 1169 | 1785 | 1271 | 2051 | 1829 | 1949 | 1149 | 378 | 780 | 1171 | 154 | 410 |
| 286 | 211 | 699 | 190 | 626 | | | | | | | | | | | | | | | |
| | DFS | 378 | 376 | 597 | 393 | 684 | 0 | 709 | 1062 | 936 | 1180 | 1208 | 1075 | 785 | 332 | 465 | 738 | 113 | 375 |
| 208 | 166 | 578 | 188 | 425 | | | | | | | | | | | | | | | |
| | ESP | 347 | 398 | 594 | 377 | 525 | 493 | 0 | 942 | 802 | 1126 | 798 | 1116 | 634 | 286 | 552 | 624 | 96 | 299 |
| 238 | 141 | 565 | 195 | 431 | | | | | | | | | | | | | | | |
| | FRA | 356 | 497 | 563 | 401 | 549 | 463 | 604 | 0 | 965 | 1440 | 1199 | 1353 | 954 | 437 | 653 | 832 | 107 | 365 |
| 238 | 136 | 546 | 171 | 492 | | | | | | | | | | | | | | | |
| | GBR | 517 | 448 | 1037 | 501 | 619 | 650 | 617 | 537 | 0 | 1233 | 1102 | 1334 | 727 | 323 | 516 | 703 | 104 | 435 |
| 244 | 159 | 612 | 196 | 445 | | | | | | | | | | | | | | | |
| | ITA | 448 | 465 | 991 | 531 | 964 | 791 | 797 | 610 | 953 | 0 | 1324 | 1872 | 995 | 373 | 745 | 994 | 134 | 399 |
| 325 | 189 | 747 | 216 | 612 | | | | | | | | | | | | | | | |
| | NLD | 480 | 635 | 725 | 542 | 942 | 880 | 653 | 629 | 858 | 991 | 0 | 1277 | 886 | 416 | 526 | 973 | 141 | 447 |
| 218 | 175 | 647 | 189 | 466 | | | | | | | | | | | | | | | |
| | USA | 527 | 393 | 2007 | 575 | 670 | 727 | 656 | 587 | 1222 | 1278 | 934 | 0 | 1056 | 321 | 945 | 1058 | 141 | 353 |
| 421 | 162 | 782 | 229 | 651 | | | | | | | | | | | | | | | |
| | POL | 251 | 241 | 476 | 245 | 535 | 482 | 346 | 430 | 501 | 638 | 611 | 799 | 0 | 198 | 495 | 745 | 115 | 261 |
| 278 | 155 | 564 | 164 | 443 | | | | | | | | | | | | | | | |
| | NZL | 262 | 168 | 270 | 182 | 224 | 228 | 233 | 212 | 265 | 282 | 378 | 280 | 120 | 0 | 168 | 205 | 32 | 246 |
| 81 | 51 | 195 | 94 | 129 | | | | | | | | | | | | | | | |
| | JPN | 188 | 138 | 248 | 149 | 183 | 210 | 198 | 177 | 215 | 242 | 202 | 282 | 158 | 95 | 0 | 472 | 69 | 184 |
| 237 | 91 | 352 | 140 | 338 | | | | | | | | | | | | | | | |
| | CZE | 243 | 229 | 488 | 237 | 674 | 431 | 392 | 424 | 470 | 651 | 822 | 738 | 490 | 138 | 152 | 0 | 93 | 253 |
| 256 | 152 | 521 | 179 | 516 | | | | | | | | | | | | | | | |
| | EST | 32 | 35 | 44 | 26 | 71 | 52 | 39 | 37 | 47 | 62 | 82 | 84 | 59 | 16 | 18 | 49 | 0 | 44 |
| 35 | 34 | 79 | 34 | 70 | | | | | | | | | | | | | | | |
| | IRL | 293 | 266 | 306 | 274 | 316 | 327 | 306 | 308 | 454 | 377 | 439 | 365 | 199 | 213 | 132 | 204 | 27 | 0 |
| 92 | 77 | 267 | 110 | 183 | | | | | | | | | | | | | | | |
| | KOR | 110 | 79 | 306 | 95 | 131 | 142 | 152 | 125 | 171 | 261 | 135 | 474 | 212 | 58 | 111 | 177 | 16 | 69 |
| 0 | 61 | 235 | 98 | 212 | | | | | | | | | | | | | | | |
| | SVN | 79 | 89 | 102 | 74 | 181 | 135 | 103 | 93 | 121 | 159 | 148 | 125 | 120 | 38 | 45 | 115 | 23 | 62 |
| 41 | 0 | 114 | 57 | 101 | | | | | | | | | | | | | | | |
| | PRT | 281 | 308 | 620 | 286 | 452 | 480 | 501 | 418 | 540 | 687 | 616 | 780 | 519 | 146 | 177 | 421 | 48 | 233 |
| 205 | 87 | 0 | 181 | 360 | | | | | | | | | | | | | | | |
| | ZAF | 147 | 100 | 180 | 97 | 132 | 166 | 167 | 132 | 172 | 178 | 160 | 224 | 129 | 82 | 106 | 134 | 16 | 105 |
| 71 | 40 | 170 | 0 | 149 | | | | | | | | | | | | | | | |
| | HUN | 197 | 165 | 464 | 197 | 346 | 298 | 290 | 274 | 340 | 451 | 322 | 569 | 339 | 100 | 144 | 435 | 41 | 162 |
| 173 | 76 | 340 | 126 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | | | | | | | | | | | | | | | | | | |
| KOR | | | | | | | | | | | | | | | | | | |
| SVN | | | | | | | | | | | | | | | | | | |
| PRT | | | | | | | | | | | | | | | | | | |
| AUS | 0 | 379 | 767 | 411 | 770 | 696 | 552 | 612 | 786 | 691 | 806 | 942 | 420 | 491 | 456 | 494 | 497 | 74 |
| 376 | 265 | 79 | 465 | | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 436 | 383 | 611 | 480 | 421 | 506 | 509 | 521 | 731 | 523 | 296 | 384 | 220 | 304 | 386 | 51 |
| 306 | 178 | 85 | 389 | | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1068 | 947 | 1241 | 1416 | 1053 | 2463 | 712 | 843 | 324 | 1004 | 888 | 110 |
| 372 | 530 | 116 | 773 | | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 479 | 466 | 580 | 633 | 701 | 758 | 337 | 442 | 223 | 346 | 439 | 56 |
| 313 | 210 | 78 | 411 | | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1200 | 1706 | 1488 | 2081 | 2115 | 2396 | 864 | 1308 | 408 | 1061 | 1412 | 158 |
| 508 | 431 | 179 | 824 | | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 628 | 435 | 739 | 0 | 818 | 1128 | 1181 | 1275 | 1432 | 1470 | 631 | 941 | 420 | 706 | 954 | 122 |
| 487 | 356 | 139 | 703 | | | | | | | | | | | | | | | |
| ESP | 420 | 398 | 594 | 380 | 539 | 547 | 0 | 865 | 920 | 1129 | 905 | 1288 | 595 | 738 | 292 | 734 | 735 | 97 |
| 373 | 372 | 113 | 668 | | | | | | | | | | | | | | | |
| FRA | 421 | 477 | 530 | 396 | 524 | 494 | 596 | 0 | 1113 | 1369 | 1318 | 1623 | 651 | 1034 | 369 | 833 | 969 | 105 |
| 432 | 356 | 114 | 630 | | | | | | | | | | | | | | | |
| GBR | 648 | 491 | 1195 | 557 | 692 | 754 | 733 | 633 | 0 | 1370 | 1401 | 1705 | 659 | 871 | 432 | 771 | 885 | 116 |
| 627 | 397 | 130 | 755 | | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 800 | 598 | 1050 | 0 | 1434 | 2141 | 806 | 1102 | 381 | 931 | 1132 | 135 |
| 466 | 490 | 157 | 860 | | | | | | | | | | | | | | | |
| NLD | 649 | 774 | 841 | 656 | 1068 | 980 | 740 | 677 | 1093 | 1067 | 0 | 1885 | 681 | 1046 | 541 | 780 | 1162 | 149 |
| 584 | 365 | 141 | 800 | | | | | | | | | | | | | | | |
| USA | 758 | 420 | 2261 | 651 | 758 | 825 | 765 | 695 | 1435 | 1365 | 1369 | 0 | 948 | 1248 | 494 | 1501 | 1312 | 150 |
| 475 | 666 | 135 | 984 | | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 427 | 445 | 380 | 518 | 623 | 483 | 821 | 0 | 585 | 249 | 510 | 717 | 82 |
| 292 | 337 | 95 | 507 | | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 441 | 484 | 595 | 718 | 719 | 917 | 433 | 0 | 277 | 618 | 880 | 128 |
| 344 | 379 | 142 | 665 | | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 236 | 206 | 333 | 287 | 478 | 407 | 191 | 164 | 0 | 284 | 296 | 34 |
| 310 | 152 | 42 | 264 | | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 241 | 206 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 0 | 640 | 82 |
| 285 | 395 | 81 | 487 | | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 493 | 537 | 589 | 748 | 940 | 902 | 605 | 566 | 188 | 174 | 0 | 103 |
| 346 | 384 | 133 | 629 | | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 39 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 55 | 0 |
| 52 | 44 | 31 | 87 | | | | | | | | | | | | | | | |
| IRL | 351 | 297 | 350 | 311 | 358 | 388 | 364 | 369 | 682 | 427 | 535 | 437 | 246 | 251 | 256 | 156 | 262 | 28 |
| 0 | 174 | 58 | 340 | | | | | | | | | | | | | | | |
| KOR | 185 | 109 | 463 | 139 | 194 | 220 | 257 | 176 | 290 | 388 | 228 | 738 | 274 | 269 | 99 | 166 | 263 | 18 |
| 121 | 0 | 61 | 360 | | | | | | | | | | | | | | | |
| SVN | 61 | 66 | 85 | 60 | 156 | 111 | 81 | 77 | 97 | 129 | 117 | 103 | 70 | 111 | 31 | 35 | 99 | 19 |
| 48 | 39 | 0 | 96 | | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 352 | 533 | 591 | 628 | 506 | 685 | 805 | 773 | 980 | 472 | 604 | 199 | 219 | 509 | 53 |
| 293 | 302 | 74 | 0 | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | NZL | JPN | CZE | EST |
|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|-----|------|------|-----|
| IRL | SVN | PRT | | | | | | | | | | | | | | | | |
| AUS | 0 | 379 | 767 | 411 | 770 | 696 | 552 | 732 | 786 | 691 | 806 | 945 | 420 | 492 | 456 | 494 | 497 | 74 |
| 364 | 80 | 465 | | | | | | | | | | | | | | | | |
| BEL | 323 | 0 | 437 | 384 | 611 | 481 | 422 | 552 | 510 | 522 | 732 | 526 | 296 | 385 | 220 | 304 | 386 | 51 |
| 297 | 85 | 390 | | | | | | | | | | | | | | | | |
| CAN | 690 | 403 | 0 | 697 | 1636 | 969 | 1068 | 1106 | 1241 | 1416 | 1053 | 2475 | 712 | 844 | 324 | 1004 | 888 | 110 |
| 358 | 116 | 773 | | | | | | | | | | | | | | | | |
| CHE | 357 | 367 | 534 | 0 | 817 | 517 | 479 | 506 | 580 | 633 | 701 | 762 | 337 | 444 | 223 | 346 | 439 | 56 |
| 304 | 79 | 411 | | | | | | | | | | | | | | | | |
| DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1200 | 1889 | 1488 | 2081 | 2115 | 2405 | 864 | 1313 | 408 | 1061 | 1412 | 158 |
| 490 | 180 | 825 | | | | | | | | | | | | | | | | |
| DFS | 444 | 406 | 628 | 435 | 739 | 0 | 818 | 1292 | 1181 | 1275 | 1432 | 1472 | 631 | 944 | 420 | 706 | 954 | 122 |
| 464 | 140 | 704 | | | | | | | | | | | | | | | | |
| ESP | 420 | 398 | 594 | 380 | 539 | 547 | 0 | 944 | 920 | 1129 | 905 | 1293 | 595 | 738 | 292 | 734 | 735 | 97 |
| 359 | 113 | 668 | | | | | | | | | | | | | | | | |
| FRA | 439 | 498 | 563 | 410 | 618 | 502 | 604 | 0 | 1250 | 1449 | 1600 | 2048 | 696 | 1117 | 448 | 987 | 1013 | 110 |
| 448 | 114 | 670 | | | | | | | | | | | | | | | | |
| GBR | 648 | 490 | 1194 | 557 | 690 | 753 | 730 | 644 | 0 | 1370 | 1401 | 1711 | 659 | 872 | 432 | 771 | 885 | 116 |
| 589 | 131 | 757 | | | | | | | | | | | | | | | | |
| ITA | 524 | 465 | 992 | 553 | 975 | 846 | 800 | 611 | 1048 | 0 | 1434 | 2146 | 806 | 1102 | 381 | 931 | 1132 | 135 |
| 455 | 158 | 860 | | | | | | | | | | | | | | | | |
| NLD | 649 | 774 | 841 | 656 | 1068 | 980 | 740 | 746 | 1091 | 1067 | 0 | 1890 | 681 | 1048 | 541 | 780 | 1162 | 149 |
| 548 | 142 | 800 | | | | | | | | | | | | | | | | |
| USA | 761 | 422 | 2280 | 656 | 765 | 828 | 768 | 853 | 1443 | 1372 | 1375 | 0 | 950 | 1253 | 495 | 1504 | 1317 | 151 |
| 452 | 136 | 987 | | | | | | | | | | | | | | | | |
| HUN | 300 | 239 | 604 | 270 | 489 | 427 | 445 | 383 | 518 | 623 | 483 | 822 | 0 | 586 | 249 | 510 | 717 | 82 |
| 281 | 95 | 507 | | | | | | | | | | | | | | | | |
| POL | 311 | 295 | 535 | 310 | 632 | 562 | 441 | 516 | 595 | 718 | 719 | 921 | 433 | 0 | 277 | 619 | 880 | 128 |
| 333 | 143 | 665 | | | | | | | | | | | | | | | | |
| NZL | 364 | 169 | 272 | 185 | 231 | 260 | 236 | 212 | 333 | 287 | 478 | 410 | 191 | 164 | 0 | 284 | 296 | 34 |
| 296 | 42 | 264 | | | | | | | | | | | | | | | | |
| JPN | 230 | 166 | 291 | 168 | 212 | 243 | 241 | 207 | 261 | 274 | 244 | 339 | 196 | 180 | 120 | 0 | 640 | 82 |
| 271 | 81 | 487 | | | | | | | | | | | | | | | | |
| CZE | 313 | 274 | 566 | 302 | 805 | 516 | 493 | 553 | 588 | 748 | 940 | 906 | 605 | 566 | 188 | 174 | 0 | 103 |
| 331 | 134 | 630 | | | | | | | | | | | | | | | | |
| EST | 35 | 35 | 44 | 26 | 72 | 55 | 39 | 37 | 50 | 62 | 86 | 87 | 48 | 68 | 16 | 18 | 55 | 0 |
| 51 | 31 | 87 | | | | | | | | | | | | | | | | |
| IRL | 350 | 296 | 349 | 309 | 356 | 387 | 361 | 368 | 657 | 425 | 527 | 433 | 244 | 251 | 252 | 156 | 261 | 28 |
| 0 | 58 | 329 | | | | | | | | | | | | | | | | |
| SVN | 61 | 66 | 85 | 60 | 156 | 111 | 81 | 77 | 97 | 130 | 118 | 103 | 70 | 111 | 31 | 35 | 99 | 19 |
| 48 | 0 | 96 | | | | | | | | | | | | | | | | |
| PRT | 349 | 367 | 763 | 352 | 533 | 591 | 628 | 515 | 684 | 805 | 773 | 988 | 472 | 604 | 199 | 219 | 509 | 53 |
| 293 | 74 | 0 | | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| SVN | PRT | AUS | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | HUN | POL | JPN | CZE | EST | IRL |
|-----|-----|-----|-----|------|-----|------|------|------|------|------|------|------|------|-----|------|------|------|-----|-----|
| | AUS | 0 | 371 | 759 | 410 | 768 | 692 | 547 | 592 | 780 | 690 | 783 | 935 | 408 | 488 | 486 | 496 | 74 | 361 |
| 79 | 465 | | | | | | | | | | | | | | | | | | |
| | BEL | 323 | 0 | 431 | 381 | 605 | 476 | 421 | 490 | 503 | 518 | 691 | 508 | 289 | 381 | 294 | 385 | 51 | 295 |
| 85 | 391 | | | | | | | | | | | | | | | | | | |
| | CAN | 689 | 403 | 0 | 697 | 1636 | 969 | 1070 | 930 | 1241 | 1416 | 1022 | 2467 | 698 | 843 | 988 | 887 | 110 | 358 |
| 116 | 778 | | | | | | | | | | | | | | | | | | |
| | CHE | 357 | 366 | 534 | 0 | 817 | 517 | 481 | 450 | 580 | 633 | 690 | 760 | 331 | 442 | 345 | 439 | 56 | 304 |
| 78 | 414 | | | | | | | | | | | | | | | | | | |
| | DEU | 394 | 475 | 523 | 522 | 0 | 1800 | 1205 | 1680 | 1488 | 2081 | 2076 | 2399 | 846 | 1307 | 1054 | 1412 | 158 | 490 |
| 179 | 829 | | | | | | | | | | | | | | | | | | |
| | DFS | 444 | 406 | 628 | 435 | 739 | 0 | 823 | 1106 | 1181 | 1275 | 1405 | 1458 | 616 | 941 | 695 | 954 | 122 | 464 |
| 139 | 708 | | | | | | | | | | | | | | | | | | |
| | ESP | 421 | 401 | 595 | 381 | 545 | 552 | 0 | 846 | 923 | 1134 | 892 | 1292 | 585 | 741 | 724 | 738 | 98 | 361 |
| 114 | 675 | | | | | | | | | | | | | | | | | | |
| | FRA | 391 | 460 | 504 | 371 | 491 | 469 | 568 | 0 | 1090 | 1349 | 1271 | 1594 | 636 | 1024 | 814 | 958 | 105 | 408 |
| 114 | 629 | | | | | | | | | | | | | | | | | | |
| | GBR | 647 | 490 | 1194 | 557 | 690 | 753 | 736 | 590 | 0 | 1370 | 1377 | 1704 | 644 | 871 | 759 | 885 | 116 | 586 |
| 130 | 757 | | | | | | | | | | | | | | | | | | |
| | ITA | 524 | 465 | 992 | 553 | 975 | 846 | 807 | 565 | 1048 | 0 | 1415 | 2143 | 797 | 1102 | 925 | 1132 | 135 | 455 |
| 157 | 864 | | | | | | | | | | | | | | | | | | |
| | NLD | 624 | 732 | 794 | 634 | 1038 | 957 | 717 | 616 | 1053 | 1037 | 0 | 1780 | 656 | 1035 | 742 | 1152 | 147 | 543 |
| 141 | 794 | | | | | | | | | | | | | | | | | | |
| | USA | 759 | 420 | 2280 | 656 | 763 | 828 | 768 | 650 | 1442 | 1372 | 1168 | 0 | 920 | 1250 | 1452 | 1314 | 151 | 450 |
| 135 | 992 | | | | | | | | | | | | | | | | | | |
| | HUN | 289 | 232 | 590 | 266 | 480 | 418 | 431 | 362 | 502 | 612 | 454 | 796 | 0 | 579 | 499 | 704 | 82 | 276 |
| 95 | 508 | | | | | | | | | | | | | | | | | | |
| | POL | 311 | 295 | 535 | 310 | 632 | 562 | 444 | 473 | 595 | 718 | 711 | 921 | 429 | 0 | 616 | 880 | 128 | 333 |
| 142 | 669 | | | | | | | | | | | | | | | | | | |
| | JPN | 230 | 166 | 291 | 168 | 212 | 243 | 241 | 201 | 261 | 274 | 242 | 339 | 190 | 180 | 0 | 637 | 81 | 267 |
| 81 | 489 | | | | | | | | | | | | | | | | | | |
| | CZE | 313 | 274 | 566 | 302 | 805 | 516 | 496 | 518 | 588 | 748 | 924 | 905 | 593 | 566 | 174 | 0 | 103 | 331 |
| 133 | 631 | | | | | | | | | | | | | | | | | | |
| | EST | 35 | 35 | 44 | 26 | 72 | 55 | 40 | 37 | 50 | 62 | 85 | 87 | 48 | 68 | 18 | 55 | 0 | 51 |
| 31 | 87 | | | | | | | | | | | | | | | | | | |
| | IRL | 348 | 296 | 349 | 309 | 356 | 387 | 363 | 341 | 654 | 425 | 517 | 433 | 237 | 251 | 156 | 261 | 28 | 0 |
| 58 | 330 | | | | | | | | | | | | | | | | | | |
| | SVN | 61 | 66 | 85 | 60 | 156 | 111 | 82 | 77 | 97 | 129 | 117 | 103 | 70 | 111 | 35 | 99 | 19 | 48 |
| 0 | 96 | | | | | | | | | | | | | | | | | | |
| | PRT | 350 | 372 | 765 | 355 | 536 | 595 | 636 | 506 | 689 | 808 | 765 | 992 | 474 | 608 | 219 | 513 | 53 | 294 |
| 74 | 0 | | | | | | | | | | | | | | | | | | |

HOL

common bulls below diagonal

common three quarter sib group above diagonal

| | BEL | CAN | CHE | DEU | DFS | ESP | FRA | GBR | ITA | NLD | USA | CZE | IRL | KOR | SVN | PRT | EST | HUN |
|-----|-----|------|-----|------|------|-----|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|
| BEL | 0 | 399 | 303 | 462 | 443 | 379 | 461 | 469 | 367 | 564 | 465 | 303 | 281 | 98 | 65 | 322 | 31 | 202 |
| CAN | 393 | 0 | 546 | 1228 | 872 | 958 | 900 | 1144 | 1092 | 831 | 2278 | 736 | 342 | 279 | 94 | 639 | 55 | 538 |
| CHE | 299 | 424 | 0 | 554 | 396 | 377 | 378 | 459 | 453 | 486 | 581 | 316 | 239 | 110 | 61 | 314 | 30 | 234 |
| DEU | 387 | 443 | 366 | 0 | 1248 | 946 | 1266 | 1076 | 1281 | 1464 | 1716 | 1027 | 353 | 222 | 130 | 588 | 85 | 584 |
| DFS | 396 | 625 | 346 | 608 | 0 | 732 | 1101 | 1168 | 796 | 1170 | 1449 | 747 | 461 | 173 | 110 | 572 | 63 | 430 |
| ESP | 369 | 527 | 285 | 414 | 504 | 0 | 792 | 821 | 823 | 751 | 1166 | 616 | 323 | 195 | 92 | 551 | 53 | 429 |
| FRA | 453 | 502 | 306 | 398 | 469 | 544 | 0 | 1087 | 853 | 1076 | 1593 | 802 | 407 | 198 | 92 | 526 | 56 | 489 |
| GBR | 473 | 1121 | 425 | 537 | 751 | 632 | 591 | 0 | 916 | 1111 | 1692 | 713 | 581 | 202 | 102 | 618 | 64 | 452 |
| ITA | 365 | 815 | 394 | 599 | 611 | 551 | 447 | 738 | 0 | 874 | 1412 | 767 | 296 | 255 | 114 | 602 | 73 | 541 |
| NLD | 592 | 692 | 453 | 784 | 876 | 594 | 573 | 860 | 713 | 0 | 1303 | 942 | 463 | 183 | 109 | 620 | 79 | 459 |
| USA | 408 | 2165 | 492 | 584 | 827 | 635 | 650 | 1440 | 1021 | 906 | 0 | 1074 | 449 | 339 | 111 | 799 | 74 | 665 |
| CZE | 227 | 477 | 218 | 616 | 424 | 393 | 410 | 463 | 527 | 796 | 728 | 0 | 257 | 203 | 103 | 499 | 47 | 511 |
| IRL | 288 | 346 | 235 | 276 | 387 | 323 | 341 | 648 | 303 | 450 | 433 | 201 | 0 | 78 | 43 | 267 | 26 | 186 |
| KOR | 72 | 260 | 84 | 112 | 123 | 135 | 112 | 145 | 219 | 117 | 386 | 143 | 59 | 0 | 44 | 194 | 12 | 174 |
| SVN | 52 | 73 | 47 | 116 | 91 | 71 | 64 | 82 | 96 | 90 | 88 | 79 | 36 | 31 | 0 | 80 | 15 | 73 |
| PRT | 301 | 614 | 265 | 421 | 473 | 487 | 413 | 531 | 569 | 590 | 777 | 402 | 230 | 173 | 59 | 0 | 41 | 355 |
| EST | 19 | 21 | 11 | 31 | 27 | 17 | 18 | 28 | 30 | 43 | 28 | 23 | 16 | 7 | 9 | 23 | 0 | 40 |
| HUN | 164 | 460 | 189 | 336 | 299 | 288 | 272 | 337 | 420 | 318 | 567 | 428 | 162 | 147 | 55 | 334 | 21 | 0 |

HOL

common bulls below diagonal
 common three quarter sib group above diagonal

| | BEL | CHE | DEU | DFS | FRA | GBR | ITA | NLD | USA | CZE | JPN | IRL | KOR | CAN | PRT | ESP | SVN | EST |
|-----|-----|-----|-----|-----|------|------|------|------|------|-----|-----|-----|-----|------|-----|------|-----|-----|
| HUN | | | | | | | | | | | | | | | | | | |
| BEL | 0 | 363 | 467 | 267 | 349 | 487 | 395 | 633 | 485 | 282 | 170 | 264 | 108 | 339 | 237 | 392 | 84 | 41 |
| 169 | | | | | | | | | | | | | | | | | | |
| CHE | 355 | 0 | 633 | 261 | 340 | 539 | 516 | 636 | 711 | 322 | 206 | 260 | 129 | 513 | 240 | 440 | 77 | 43 |
| 206 | | | | | | | | | | | | | | | | | | |
| DEU | 389 | 426 | 0 | 772 | 1058 | 1081 | 1416 | 1515 | 1726 | 967 | 587 | 312 | 264 | 1076 | 458 | 949 | 173 | 116 |
| 503 | | | | | | | | | | | | | | | | | | |
| DFS | 213 | 205 | 320 | 0 | 423 | 626 | 521 | 785 | 685 | 436 | 211 | 269 | 127 | 322 | 257 | 408 | 81 | 56 |
| 222 | | | | | | | | | | | | | | | | | | |
| FRA | 321 | 279 | 352 | 171 | 0 | 678 | 830 | 817 | 993 | 610 | 455 | 235 | 199 | 622 | 340 | 610 | 107 | 75 |
| 394 | | | | | | | | | | | | | | | | | | |
| GBR | 482 | 517 | 540 | 351 | 402 | 0 | 1006 | 1259 | 1657 | 645 | 405 | 517 | 242 | 838 | 423 | 848 | 129 | 89 |
| 384 | | | | | | | | | | | | | | | | | | |
| ITA | 388 | 443 | 620 | 353 | 406 | 791 | 0 | 987 | 1582 | 795 | 544 | 297 | 312 | 1040 | 484 | 892 | 147 | 101 |
| 502 | | | | | | | | | | | | | | | | | | |
| NLD | 666 | 601 | 813 | 501 | 463 | 982 | 773 | 0 | 1513 | 897 | 391 | 457 | 215 | 686 | 432 | 798 | 140 | 112 |
| 387 | | | | | | | | | | | | | | | | | | |
| USA | 415 | 624 | 587 | 343 | 424 | 1429 | 1101 | 1049 | 0 | 983 | 748 | 406 | 418 | 1647 | 562 | 1213 | 134 | 104 |
| 577 | | | | | | | | | | | | | | | | | | |
| CZE | 210 | 224 | 587 | 231 | 327 | 421 | 540 | 759 | 673 | 0 | 370 | 206 | 249 | 608 | 364 | 556 | 129 | 73 |
| 430 | | | | | | | | | | | | | | | | | | |
| JPN | 109 | 114 | 149 | 99 | 138 | 173 | 196 | 161 | 228 | 129 | 0 | 123 | 213 | 511 | 233 | 449 | 71 | 49 |
| 273 | | | | | | | | | | | | | | | | | | |
| IRL | 271 | 268 | 257 | 201 | 216 | 579 | 295 | 441 | 398 | 159 | 92 | 0 | 80 | 238 | 157 | 310 | 53 | 32 |
| 138 | | | | | | | | | | | | | | | | | | |
| KOR | 78 | 94 | 130 | 76 | 122 | 170 | 258 | 134 | 477 | 173 | 109 | 61 | 0 | 310 | 206 | 231 | 58 | 28 |
| 197 | | | | | | | | | | | | | | | | | | |
| CAN | 344 | 433 | 428 | 245 | 370 | 861 | 800 | 639 | 1731 | 431 | 202 | 260 | 293 | 0 | 429 | 761 | 112 | 73 |
| 439 | | | | | | | | | | | | | | | | | | |
| PRT | 223 | 200 | 322 | 188 | 289 | 360 | 451 | 388 | 569 | 292 | 134 | 136 | 178 | 421 | 0 | 379 | 89 | 59 |
| 267 | | | | | | | | | | | | | | | | | | |
| ESP | 388 | 350 | 405 | 266 | 418 | 681 | 590 | 648 | 708 | 343 | 162 | 321 | 150 | 462 | 318 | 0 | 112 | 71 |
| 372 | | | | | | | | | | | | | | | | | | |
| SVN | 66 | 60 | 156 | 56 | 75 | 97 | 125 | 117 | 103 | 98 | 34 | 44 | 39 | 85 | 67 | 81 | 0 | 28 |
| 89 | | | | | | | | | | | | | | | | | | |
| EST | 27 | 20 | 50 | 24 | 31 | 40 | 50 | 68 | 52 | 42 | 16 | 21 | 16 | 37 | 41 | 30 | 18 | 0 |
| 57 | | | | | | | | | | | | | | | | | | |
| HUN | 140 | 162 | 288 | 144 | 227 | 289 | 373 | 262 | 492 | 361 | 118 | 118 | 166 | 409 | 259 | 245 | 68 | 36 |
| 0 | | | | | | | | | | | | | | | | | | |

JER

common bulls below diagonal
 common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 127 | 70 | 82 | 42 | 137 | 220 | 118 | 16 |
| CAN | 131 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 82 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 137 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 213 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 127 | 70 | 82 | 42 | 138 | 220 | 111 | 16 |
| CAN | 131 | 0 | 63 | 105 | 47 | 69 | 327 | 113 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 90 | 14 |
| GBR | 82 | 109 | 72 | 0 | 48 | 68 | 134 | 85 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 137 | 71 | 52 | 69 | 32 | 0 | 141 | 85 | 15 |
| USA | 213 | 320 | 85 | 140 | 65 | 149 | 0 | 196 | 25 |
| ZAF | 118 | 115 | 73 | 85 | 57 | 84 | 205 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | ZAF | NLD | USA |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 125 | 69 | 81 | 42 | 137 | 111 | 16 | 220 |
| CAN | 129 | 0 | 63 | 105 | 47 | 69 | 113 | 12 | 327 |
| DFS | 43 | 46 | 0 | 81 | 51 | 75 | 90 | 14 | 120 |
| GBR | 81 | 109 | 72 | 0 | 48 | 68 | 85 | 11 | 134 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 57 | 14 | 61 |
| NZL | 136 | 71 | 52 | 69 | 32 | 0 | 85 | 15 | 141 |
| ZAF | 118 | 115 | 73 | 85 | 57 | 84 | 0 | 22 | 196 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 18 | 0 | 25 |
| USA | 213 | 320 | 85 | 140 | 65 | 149 | 205 | 26 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 127 | 67 | 81 | 42 | 220 | 117 | 3 |
| CAN | 131 | 0 | 63 | 105 | 47 | 327 | 124 | 4 |
| DFS | 42 | 46 | 0 | 79 | 51 | 120 | 98 | 4 |
| GBR | 81 | 109 | 70 | 0 | 48 | 134 | 90 | 5 |
| ITA | 41 | 45 | 48 | 48 | 0 | 61 | 57 | 5 |
| USA | 213 | 320 | 85 | 140 | 65 | 0 | 215 | 8 |
| ZAF | 122 | 124 | 78 | 89 | 57 | 222 | 0 | 7 |
| NLD | 1 | 3 | 4 | 4 | 4 | 7 | 6 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 70 | 83 | 42 | 138 | 223 | 118 | 16 |
| CAN | 133 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 83 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 216 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 70 | 83 | 42 | 139 | 223 | 118 | 16 |
| CAN | 133 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 83 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 216 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 70 | 83 | 42 | 139 | 223 | 118 | 16 |
| CAN | 133 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 83 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 216 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | ITA | ZAF | NLD | USA |
|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 88 | 42 | 33 | 75 | 9 | 130 |
| CAN | 86 | 0 | 63 | 47 | 99 | 12 | 327 |
| DFS | 31 | 46 | 0 | 51 | 69 | 14 | 120 |
| ITA | 31 | 45 | 48 | 0 | 51 | 14 | 61 |
| ZAF | 81 | 95 | 55 | 49 | 0 | 19 | 161 |
| NLD | 8 | 8 | 9 | 11 | 13 | 0 | 25 |
| USA | 130 | 320 | 85 | 65 | 159 | 26 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 125 | 67 | 81 | 42 | 220 | 117 | 16 |
| CAN | 129 | 0 | 63 | 105 | 47 | 327 | 124 | 12 |
| DFS | 42 | 46 | 0 | 79 | 51 | 120 | 98 | 14 |
| GBR | 81 | 109 | 70 | 0 | 48 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 61 | 57 | 14 |
| USA | 213 | 320 | 85 | 140 | 65 | 0 | 215 | 25 |
| ZAF | 122 | 124 | 78 | 89 | 57 | 222 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 70 | 83 | 42 | 139 | 223 | 118 | 16 |
| CAN | 133 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 83 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 216 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 68 | 83 | 42 | 139 | 223 | 118 | 16 |
| CAN | 133 | 0 | 57 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 43 | 44 | 0 | 72 | 51 | 68 | 113 | 92 | 14 |
| GBR | 83 | 109 | 67 | 0 | 48 | 67 | 134 | 89 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 46 | 68 | 32 | 0 | 141 | 93 | 15 |
| USA | 216 | 320 | 80 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 76 | 88 | 57 | 91 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 70 | 83 | 42 | 139 | 223 | 118 | 16 |
| CAN | 133 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 83 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 216 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 125 | 67 | 81 | 42 | 220 | 117 | 16 |
| CAN | 129 | 0 | 63 | 105 | 47 | 324 | 124 | 12 |
| DFS | 42 | 46 | 0 | 79 | 51 | 120 | 98 | 14 |
| GBR | 81 | 108 | 70 | 0 | 48 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 61 | 57 | 14 |
| USA | 213 | 318 | 85 | 140 | 65 | 0 | 215 | 25 |
| ZAF | 122 | 124 | 78 | 89 | 57 | 222 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 129 | 70 | 83 | 42 | 139 | 223 | 118 | 16 |
| CAN | 133 | 0 | 63 | 105 | 47 | 69 | 327 | 124 | 12 |
| DFS | 44 | 46 | 0 | 81 | 51 | 75 | 120 | 99 | 14 |
| GBR | 83 | 109 | 72 | 0 | 48 | 68 | 134 | 90 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 36 | 61 | 57 | 14 |
| NZL | 138 | 71 | 52 | 69 | 32 | 0 | 141 | 94 | 15 |
| USA | 216 | 320 | 85 | 140 | 65 | 149 | 0 | 216 | 25 |
| ZAF | 123 | 124 | 79 | 89 | 57 | 92 | 223 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 13 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | USA | ZAF | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 125 | 67 | 81 | 42 | 220 | 110 | 16 |
| CAN | 129 | 0 | 63 | 105 | 47 | 327 | 113 | 12 |
| DFS | 42 | 46 | 0 | 79 | 51 | 120 | 89 | 14 |
| GBR | 81 | 109 | 70 | 0 | 48 | 134 | 85 | 11 |
| ITA | 41 | 45 | 48 | 48 | 0 | 61 | 57 | 14 |
| USA | 213 | 320 | 85 | 140 | 65 | 0 | 195 | 25 |
| ZAF | 117 | 115 | 72 | 85 | 57 | 204 | 0 | 22 |
| NLD | 13 | 8 | 9 | 9 | 11 | 26 | 18 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | NZL | ZAF | NLD | USA |
|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 84 | 38 | 82 | 74 | 9 | 121 |
| CAN | 80 | 0 | 52 | 69 | 110 | 12 | 327 |
| DFS | 25 | 41 | 0 | 61 | 81 | 14 | 106 |
| NZL | 76 | 71 | 42 | 0 | 80 | 15 | 141 |
| ZAF | 81 | 109 | 65 | 75 | 0 | 22 | 191 |
| NLD | 8 | 8 | 9 | 13 | 18 | 0 | 25 |
| USA | 120 | 320 | 75 | 149 | 192 | 26 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DFS | GBR | ITA | NZL | USA | NLD |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 127 | 70 | 34 | 42 | 138 | 220 | 16 |
| CAN | 131 | 0 | 63 | 37 | 47 | 69 | 327 | 12 |
| DFS | 44 | 46 | 0 | 30 | 51 | 75 | 120 | 14 |
| GBR | 38 | 43 | 28 | 0 | 14 | 34 | 37 | 4 |
| ITA | 41 | 45 | 48 | 15 | 0 | 36 | 61 | 14 |
| NZL | 137 | 71 | 52 | 38 | 32 | 0 | 141 | 15 |
| USA | 213 | 320 | 85 | 40 | 65 | 149 | 0 | 25 |
| NLD | 13 | 8 | 9 | 5 | 11 | 13 | 26 | 0 |

JER

common bulls below diagonal
common three quarter sib group above diagonal
AUS CAN DFS GBR NZL USA NLD

AUS 0 129 68 83 139 223 16
CAN 133 0 57 105 69 324 12
DFS 43 44 0 72 68 113 14
GBR 83 108 67 0 66 134 11
NZL 138 71 46 67 0 141 15
USA 216 318 80 140 149 0 25
NLD 13 8 9 9 13 26 0

JER

common bulls below diagonal
common three quarter sib group above diagonal
AUS CAN DFS GBR ITA USA NLD

AUS 0 125 67 81 42 219 16
CAN 129 0 63 105 47 327 12
DFS 42 46 0 79 51 120 14
GBR 81 108 70 0 48 134 11
ITA 41 45 48 48 0 61 14
USA 212 320 85 140 65 0 25
NLD 13 8 9 9 11 26 0

JER

JER

RDC

common bulls below diagonal
common three quarter sib group above diagonal
AUS CAN DEU DFS GBR NOR NZL USA NLD CAM

AUS 0 25 9 42 10 16 20 13 7 3
CAN 24 0 7 101 56 4 31 125 3 0
DEU 8 7 0 30 0 9 3 0 8 0
DFS 31 99 19 0 38 79 52 61 23 0
GBR 9 55 0 35 0 0 22 45 0 0
NOR 12 4 8 57 0 0 8 0 15 0
NZL 20 29 3 50 19 7 0 20 2 1
USA 13 116 0 56 39 0 19 0 2 0
NLD 7 3 7 23 0 14 2 2 0 0
CAM 3 0 0 0 0 0 1 0 0 0

RDC

common bulls below diagonal
common three quarter sib group above diagonal
AUS CAN DEU DFS GBR NZL USA NLD CAM

AUS 0 25 9 42 10 20 13 7 3
CAN 24 0 7 100 56 31 125 3 0
DEU 8 7 0 30 0 3 0 6 0
DFS 31 99 19 0 38 50 60 21 0
GBR 9 55 0 35 0 22 45 0 0
NZL 20 29 3 48 19 0 20 2 1
USA 13 116 0 56 39 19 0 2 0
NLD 7 3 5 21 0 2 2 0 0
CAM 3 0 0 0 0 1 0 0 0

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 6 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 1 | 31 | 123 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 4 | 3 | 0 | 7 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 44 | 50 | 60 | 21 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 44 | 0 | 0 |
| NOR | 5 | 1 | 3 | 26 | 0 | 0 | 2 | 0 | 11 | 0 |
| NZL | 20 | 29 | 3 | 48 | 19 | 2 | 0 | 20 | 2 | 1 |
| USA | 13 | 115 | 0 | 56 | 38 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 6 | 21 | 0 | 10 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 0 | 6 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 60 | 20 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 45 | 0 | 0 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 2 | 0 |
| NLD | 7 | 3 | 5 | 20 | 0 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 87 | 49 | 60 | 22 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 63 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 45 | 19 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 22 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 50 | 60 | 22 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 22 | 45 | 0 | 0 |
| NZL | 20 | 29 | 3 | 48 | 19 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 22 | 0 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 90 | 52 | 60 | 23 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 65 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 50 | 19 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 23 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | NOR | NLD | USA | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 13 | 9 | 30 | 14 | 7 | 6 | 2 |
| CAN | 13 | 0 | 7 | 99 | 4 | 3 | 125 | 0 |
| DEU | 8 | 7 | 0 | 30 | 9 | 6 | 0 | 0 |
| DFS | 22 | 98 | 19 | 0 | 87 | 20 | 60 | 0 |
| NOR | 11 | 4 | 8 | 63 | 0 | 15 | 0 | 0 |
| NLD | 7 | 3 | 5 | 20 | 14 | 0 | 2 | 0 |
| USA | 6 | 116 | 0 | 56 | 0 | 2 | 0 | 0 |
| CAM | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 6 | 42 | 10 | 16 | 13 | 7 | 3 |
| CAN | 24 | 0 | 4 | 100 | 56 | 4 | 125 | 3 | 0 |
| DEU | 5 | 4 | 0 | 18 | 0 | 7 | 0 | 6 | 0 |
| DFS | 31 | 99 | 11 | 0 | 38 | 87 | 60 | 21 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 45 | 0 | 0 |
| NOR | 12 | 4 | 6 | 63 | 0 | 0 | 0 | 15 | 0 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 0 | 2 | 0 |
| NLD | 7 | 3 | 5 | 21 | 0 | 14 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 6 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 90 | 52 | 60 | 21 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 65 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 50 | 19 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 5 | 21 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 7 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 87 | 50 | 60 | 21 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 63 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 47 | 19 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 6 | 21 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 80 | 52 | 60 | 23 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 58 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 50 | 19 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 23 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 122 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 90 | 60 | 23 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 65 | 0 | 0 | 0 | 15 | 0 |
| USA | 13 | 115 | 0 | 56 | 39 | 0 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 23 | 0 | 14 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 87 | 50 | 60 | 22 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 22 | 45 | 0 | 0 |
| NOR | 12 | 4 | 8 | 63 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 48 | 19 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 39 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 22 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 10 | 16 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 56 | 4 | 123 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 84 | 60 | 23 | 0 |
| GBR | 9 | 55 | 0 | 35 | 0 | 0 | 44 | 0 | 0 |
| NOR | 12 | 4 | 8 | 60 | 0 | 0 | 0 | 15 | 0 |
| USA | 13 | 115 | 0 | 56 | 38 | 0 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 23 | 0 | 14 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | NOR | NZL | NLD | USA | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 10 | 8 | 26 | 12 | 10 | 7 | 5 | 2 |
| CAN | 10 | 0 | 6 | 94 | 4 | 31 | 3 | 125 | 0 |
| DEU | 7 | 6 | 0 | 23 | 9 | 3 | 6 | 0 | 0 |
| DFS | 19 | 92 | 16 | 0 | 79 | 44 | 20 | 55 | 0 |
| NOR | 9 | 4 | 8 | 58 | 0 | 8 | 15 | 0 | 0 |
| NZL | 10 | 29 | 3 | 44 | 7 | 0 | 1 | 20 | 1 |
| NLD | 7 | 3 | 5 | 20 | 14 | 1 | 0 | 2 | 0 |
| USA | 5 | 116 | 0 | 52 | 0 | 19 | 2 | 0 | 0 |
| CAM | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 9 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 101 | 53 | 4 | 31 | 125 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 89 | 51 | 61 | 23 | 0 |
| GBR | 8 | 52 | 0 | 35 | 0 | 0 | 19 | 43 | 0 | 0 |
| NOR | 12 | 4 | 8 | 65 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 49 | 16 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 116 | 0 | 56 | 37 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 23 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

RDC

common bulls below diagonal
common three quarter sib group above diagonal

| | AUS | CAN | DEU | DFS | GBR | NOR | NZL | USA | NLD | CAM |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| AUS | 0 | 25 | 9 | 42 | 9 | 16 | 20 | 13 | 7 | 3 |
| CAN | 24 | 0 | 7 | 100 | 53 | 4 | 31 | 122 | 3 | 0 |
| DEU | 8 | 7 | 0 | 30 | 0 | 9 | 3 | 0 | 8 | 0 |
| DFS | 31 | 99 | 19 | 0 | 38 | 90 | 52 | 60 | 23 | 0 |
| GBR | 8 | 52 | 0 | 35 | 0 | 0 | 19 | 43 | 0 | 0 |
| NOR | 12 | 4 | 8 | 65 | 0 | 0 | 8 | 0 | 15 | 0 |
| NZL | 20 | 29 | 3 | 50 | 16 | 7 | 0 | 20 | 2 | 1 |
| USA | 13 | 115 | 0 | 56 | 37 | 0 | 19 | 0 | 2 | 0 |
| NLD | 7 | 3 | 7 | 23 | 0 | 14 | 2 | 2 | 0 | 0 |
| CAM | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
