Mean Profiles of the NEO Personality Inventory

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Abstract

The Revised NEO Personality Inventory (NEO-PI-R, Costa & McCrae, 1992) and its latest version, the NEO-PI-3, were designed to measure 30 distinctive personality traits, which are grouped into Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness domains. The mean self-rated NEO-PI-R scores for 30 subscales have been reported for 36 countries or cultures (McCrae, 2002, Appendix 1). As a follow-up, this study reports the mean scores of the NEO-PI-R/3 for 71,334 participants from 76 samples and 62 different countries or cultures and 37 different languages. Mean differences in personality traits across countries and cultures were about 8 times smaller than differences between any two individuals randomly selected from any of these samples. Nevertheless, systematic differences can be observed in the aggregate personality profiles, in which Anglophonic and Nordic countries are distinguished from the rest of the world. This study provides further evidence that country/culture mean scores in personality are replicable and can provide reliable information about personality dispositions.

Mean profiles of the NEO Personality Inventory

The Revised NEO Personality Inventory (NEO-PI-R; Costa & McCrae, 1992) was designed to measure 30 distinctive personality traits which are grouped into the so-called Big Five independent dimensions of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. A slightly revised version, the NEO-PI-3, was developed to improve readability of the items (McCrae, Costa, & Martin, 2005). Because the NEO-PI-R/3 is one of the most widely used and comprehensive instruments for measuring the Five Factor Model (FFM) of personality, it has been translated into many different languages by enthusiastic colleagues (McCrae & Allik, 2002). As the pattern of covariation between the 30 traits has transcended languages and cultures, there is a good reason to suggest that these five factors of personality may be a human universal (Allik, Realo, & McCrae, 2013; McCrae & Costa, 1997).

Mean self-rated NEO-PI-R scores were initially reported for 26 countries, territories or cultural groups (McCrae, 2001) and subsequently for 36 (McCrae, 2002, Appendix 1). Although the mean self-report NEO-PI-R scores for Conscientiousness are already available for 42 countries/cultures (Mõttus, Allik, & Realo, 2010), there has been no update for all traits since 2002. For various reasons, collecting NEO-PI-R/3 observer ratings has been both more systematic and prolific than accumulating self-reports across different countries and cultures. For instance, the members of the *Personality Profiles of Cultures Project* collected data from 11,985 participants from 50 countries/territories who each rated an adult or college-aged man or woman whom they knew well using the NEO-PI-R (McCrae, Terracciano, & 78 Members of the Personality Profiles of Cultures Project, 2005). Following the same study plan, Allik with colleagues (2009) had 7,065 participants from 33 administrative areas of the Russian Federation rated an ethnically Russian adult or college-aged man or woman whom they knew well using the Russian observer-rating version of the NEO-PI-3. For the study of personality in early adolescence, De Fruyt et al. (2009) had 5,109 participants of the *Adolescent Personality Profiles of Culture Project* in 24 different cultures rating adolescents aged 12 to 17 years. Compared with these coordinated efforts, the accumulation of self-report NEO-PI-R/3 data has been more sporadic. Nevertheless, available data from 29 cultures where both self- and observer-reports were collected suggested that the mean profiles from internal and external perspectives are very similar (McCrae, Terracciano, & 79 Members, 2005) although there is a small but a cross-

culturally replicable pattern of differences between these two perspectives (Allik et al., 2010; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005).

With a sufficiently large number of countries or cultures, it became possible, for the first time, to examine the worldwide distribution of personality profiles (Allik & McCrae, 2004). Although 36 countries or cultures was a relatively small number and continents were represented unevenly, Allik and McCrae noted that geographically or culturally proximate samples often had similar personality profiles, and there was a clear contrast between different world areas (Allik & McCrae, 2004). These regularities in the worldwide distribution of personality traits were confirmed by other studies, which used alternative measures of the FFM (Rentfrow, 2014; Rentfrow, Gosling, & Potter, 2008; Schmitt et al., 2007). There is something fascinating in geography; both laypersons and scientists take an interest in rankings of countries on all possible grounds, ranging, for example, from personal savings (Hirsh, 2015) to happiness (J. F. Helliwell, Layard, & Sachs, 2015). These rankings, however, make sense only if the aggregate scores represent an accurate statistical summary of how much people managed to save from their incomes and how trustworthy are their self-reported happiness scores. For example, if we talk about self-reported information then people may see themselves differently from how they are perceived by others, leading to inaccurate descriptions (Allik et al., 2010; Vazire, 2010). Despite these concerns, the 36 country/culture means reported by McCrae (2002) have been used in a large number of studies from which only a small fraction can be named here (e.g., Bartram, 2013; Church, 2016; Gelade, 2013; Hofstede & McCrae, 2004; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005; Meisenberg, 2015; Mõttus et al., 2010; Schmitt et al., 2007). The range of topics for which these aggregate scores have been used is rather impressive, including happiness (P. Steel & Ones, 2002), innovation (G. D. Steel, Rinne, & Fairweather, 2012), corruption (Connelly & Ones, 2008), spread of pathogens (Schaller & Murray, 2008), and national intelligence (Dunkel, Stolarski, van der Linden, & Fernandes, 2014). Thus, the NEO-PI-R mean scores have already played a prominent role in testing theories and addressing various problems.

Although deriving the NEO-PI-R mean scores for 36 countries/cultures represented a significant progress, this was still a desperately small number of countries/cultures. This has inhibited validation of these scores with other culture-level variables. For example, when Heine and colleagues tried to find a link between pace of life and personality dispositions in different

places (Heine, Buchtel, & Norenzayan, 2008), they could only identify a small number of countries for which both pace of life and trait scores were available. In a well-known paper, Levine and Norenzayan (1999) compared the pace of life in large cities from 31 countries around the world. They measured average walking speed in downtown locations, the speed with which postal clerks completed a simple request (work speed), and the accuracy of public clocks. Unfortunately, there were only 10 countries out of these 31 for which the NEO-PI-R self-ratings were also available (Heine et al., 2008). This is an obvious reason why it is desirable to enlarge the number and scope of countries for which NEO-PI-R/3 mean scores are available.

One additional obstacle to progress has been the discovery that country rankings on aggregate personality traits sometimes looked implausible. For instance, counter intuitively, Mõttus et al. (2012) found that rankings on Conscientiousness suggested that the most disciplined and methodical people live in Benin and Burkina Faso, whereas the most lackadaisical and easy-going people live in Japan and Korea. To take another example, even cultural experts were perplexed by the fact that people living in Norway, Sweden, and Denmark average very high on E6: Positive Emotions—a subscale of Extraversion in the NEO-PI-R/3—while people in Hong Kong, Portugal, and Italy average among the lowest countries on this personality trait (McCrae, 2001, 2004; McCrae & Terracciano, 2008). These and other puzzling rankings led some researchers to question the trustworthiness of national mean scores in general (Heine et al., 2008; Heine, Lehman, Peng, & Greenholtz, 2002; Perugini & Richetin, 2007). Although the frame-of-reference explanation—the tendency for people to respond to subjective self-report items by comparing themselves with implicit standards from their culture—was ruled out as the main culprit (Mõttus, Allik, Realo, Rossier, et al., 2012), there are more fundamental reasons why accurate ranking of countries on all personality traits is difficult to establish. One reason out of many potential ones is that all cultural or national differences in personality are small relative to individual variation within each culture or nation. Indeed, a preliminary observation indicated that the standard deviation of personality trait scores at the country (aggregate) level is about three times smaller than the standard deviation of individual level scores within countries or cultural groups (Allik, 2005). This means that, on average, cultural or national differences are approximately nine times smaller than individual differences on the same traits within these cultures or nations. One obvious implication of this result is that the sample

sizes used in these studies may be too small for reliable ranking of countries or territories (Allik & Realo, 2016).

In this paper, we have several goals. First, we will extend the initial list of 36 countries/territories or cultural groups (McCrae, 2002) for which mean self-rated NEO-PI-R/3 scores are available. Many researchers are interested in the use of national mean scores of the NEO-PI-R/3 for examining various theories about the relationship between culture and personality. However, the credibility of these explanations rests on the completeness of personality data, which should be accurate and representative of most of the world. Second, we are particularly interested in replication of the mean scores in two or more independent samples, which is one of the main criteria for the trustworthiness of the data.

Finally, one of our goals is to examine the relation between country-level variance and individual-level variance within each country or culture group. If the variance between countries is small in relation to the variance between individuals within country, then it means that establishing accurate ranking of countries on aggregate personality scores is a difficult task, and may require larger samples than usually used.

Methods

Samples

We started with the 36 NEO-PI-R self-rated mean profiles reported in McCrae's paper (McCrae, 2002, Table 1). The original list included the mean scores from Australians, Belgians (Flemish), Black South Africans, Canadians, Chinese, Czechs, Danes, Estonians, Filipinos, French, Germans, Hispanic Americans, Dutch, Hong Kong Chinese, Hungarians, Indonesians, Italians, Japanese, Koreans, Malaysians, Marathi Indians, Norwegians, Peruvians, Portuguese, Russians, Serbians, Zimbabweans, Spaniards, Swedes, Swiss Germans, Telugu Indians, Turks, Americans, and White South Africans samples (McCrae, 2002, Table 1). Information on these samples is reproduced in its original form in the first section of our Table 1. We omitted data for the USA because this was used as the normative sample so that all scales had a *T*-score of 50. The Hispanic-American sample was quite small ($N = 73$) and was also omitted. Although Korea and Norway were each represented by two translations and samples, they were combined (McCrae, 2002, Appendix 1). Similarly, German data were separately available for Eastern and

Western parts (Angleitner & Ostendorf, 2000), but due to the absence of substantial differences combined scores were presented. After these omissions and merges, there were data for 24,121 participants from 36 samples (including USA norms).

The second section of the table shows data from countries/cultures, which are new entries. These data were obtained either from published sources or from individuals who kindly sent their data. For instance, Jerome Rossier and his colleagues collected new entries from several French-speaking African countries: Benin, Burkina Faso, Congo, Democratic Republic of Congo, Mali, Mauritius, Senegal, and Tunisia (Zecca et al., 2013). We also searched the *Web of Science*, *PsycINFO*, *Google Scholar* and other databases. New translations of the NEO-PI-R/3 became available for several languages: Basque (Gorostiaga, Balluerka, Alonso-Arbiol, & Haranburu, 2011), Bulgarian (Costa & McCrae, 2007), Greek (Fountoulakis et al., 2014), Icelandic (Jonsson & Bergthorsson, 2004), Latvian (Van Skotere & Perepjolkina, 2011), Lithuanian (Žukauskiene & Barkauskiene, 2006), Romanian (Ispas, Iliescu, Ilie, & Johnson, 2014), and Tigrigna (Bahta & Laher, 2013). Although an earlier version of NEO-PI was translated into Finnish (Pulver, Allik, Pulkkinen, & Hämäläinen, 1995), data for Finnish version of the NEO-PI-R were collected for a more recent project (Lönnqvist, Paunonen, Tuulio-Henriksson, Lönnqvist, & Verkasalo, 2007), which mean values were provided to us by Jan-Erik Lönnqvist. In several cases, the mean scores were not reproduced in the published papers but the authors of these papers kindly sent them to us on our requests. Repeated translations appeared for Norwegian (Martinsen, Nordvik, & Eriksen Østbø, 2011) and Spanish (Sanz & García-Vera, 2009) versions of the NEO-PI-R. The Italian version of the NEO-PI-R was administered to a large, founder population sample ($N =$ 5,669) from the Ogliastra, an isolated region within Sardinia, Italy (Costa et al., 2007).

In addition, authors of this paper provided new unpublished data. For example, NEO-PI-R/3 data have been added for Mexico (Church et al., 2011; Ortiz et al., 2007). In Czechia and Estonia, the authors initially collected new NEO-PI-R data and more recently NEO-PI-3 self-report data, enabling us to observe how much the new version replicate the previous one.

Because 1992 norms for the United States were used to compute *T*-scores, they cannot be exploited in analyses of culture profile similarity due to the lack of variance. We therefore represented the U.S. using aggregate data from the Baltimore Longitudinal Study of Aging,

where the age of 1,994 participants ranges from 20 to 100 years (Terracciano, McCrae, Brant, & Costa Jr, 2005, Appendix B).

In total, data reported in this paper are based on the self-descriptions of 71,334 participants from 76 samples and 62 different countries or cultures and 37 different languages.

Standardization and Equivalence

McCrae (2002) presented mean scale values as *T*-scores: From each raw mean score the mean value of the scale in the American normative sample (Costa & McCrae, 1992) was subtracted and the obtained difference was divided by the standard deviation. These standard scores were multiplied by 10 and added to 50 to yield *T*-scores. Because of systematic age and sex differences, different norms were used for males and females dependent on their age group. Data of college-age (18-21 years old) respondents were normalized separately from adults over 21. An unweighted average of these four separately standardized scores represented each sample. The same procedure was used to convert the new data for each county/culture to *T*-scores, again using 1992 American NEO-PI-R norms.

NEO-PI-3 data were available from Czechia and Estonia; it is meaningful to include them in these analyses only if the NEO-PI-3 is equivalent to the NEO-PI-R. Eleven of 30 facet scales are unaltered, and thus must be equivalent. McCrae and colleagues (2005) reported small raw score differences (0.17 to 1.19 points) between NEO-PI-R and NEO-PI-3 for 14 of the 19 revised scales. De Fruyt and colleagues (2009) compared means across the two version in a multi-national study ($N = 5,109$) of observer ratings. The median absolute difference for the 16 facet scales that showed significant effects was $d = .08$. These results suggest that version differences are minor in magnitude and that data from the NEO-PI-R and NEO-PI-3 can be regarded as equivalent for the purpose of comparing mean profiles. Indeed, the correlation between NEO-PI-R and NEO-PI-3 mean scores for Czechia and Estonia was .96 in the both cases indicating that the shape of profiles changed only slightly. However, we retained NEO-PI-R and NEO-PI-3 data as separate samples in subsequent analyses.

Table 1. Characteristics of the Samples.

Code	Country/Territory/Culture	Language	N	Source/Reference
				McCrae, R. R. (2002). NEO-PI-R data from 36 cultures: further intercultural comparisons. In R. R. McCrae & J. Allik (Eds.), *The Five-Factor Model of personality across cultures* (pp. 105-125). New York: Kluwer Academic/Plenum Publishers. Table 1.
AUT	Austria	German	536	F. Ostendorf
BEL	Belgium	Flemish	1,119	F. De Fruyt
CAN	Canada	English	848	K. Jang
CHN	China	Chinese	201	Yang et al., 1999
CRO	Croatia	Croatian	722	Marusic et al., 1997
CZE	Czech Rep.	Czech	570	M. Hřebíčková
DNK	Denmark	Danish	1,213	E. L. Mortensen
EST	Estonia	Estonian	1,037	J. Allik
FRA	France	French	1,066	Rolland, 1998
DEU	Germany	German	3,730	F. Ostendorf
HKG	Hong Kong	Chinese	122	McCrae, Yik et al., 1998
HUN	Hungary	Hungarian	312	Z. Szirmak
IDN	Indonesia	Indonesian	181	L. Halim
ITA	Italy	Italian	67	G. V. Caprara
JPN	Japan	Japanese	681	Shimonaka et al., 1999
KOR	South Korea	Korean	2,353	Lee, 1995
KOR	South Korea	Korean	593	R. L. Piedmont
MYS	Malaysia	Malay	451	Mastor et al., 2000
IND(M)	India	Marathi	214	Lodhi et al., 2002
NLD	Netherlands	Dutch	1,305	Hoekstra et al., 1996
NOR	Norway	Norwegian	92	H. Nordvik
NOR	Norway	Norwegian	358	Ø. Martinsen
PER	Peru	Spanish	439	Cassaretto, 1999
PHL(E)	Philippines	English	388	A. T. Church
PHL(F)	Philippines	Filipino	509	G. del Pilar
PRT	Portugal	Portuguese	458	M. P. de Lima
RUS	Russia	Russian	117	T. Martin
ZAF(B)	S. Africa-Bl.	English	65	W. Parker
ZAF(W)	S. Africa-Wh.	English	209	W. Parker
SRB	Yugoslavia	Serbian	619	G. Kneñevic
ESP	Spain	Spanish	196	M. Avia
SWE	Sweden	Swedish	720	H. Bergman
CHE(G)	Switzerland	German	107	F. Ostendorf
TWN	Taiwan	Chinese	544	Chen, 1996
IND(T)	India	Telugu	259	V. S. Pramila
TUR	Turkey	Turkish	260	S. Gülgöz, 2002

USA	United States	English	1,389	Costa & McCrae, 1992
USA [1]	United States	Spanish	73	PAR, 1994
ZWE	Zimbabwe	Shona	71	R. L. Piedmont
New entries				
DZA	Algeria	French	203	(Zecca et al., 2013)
AUS2	Australia	English	338	(PAR, 2008)
ESP(B)	Basque (Spain)	Basque	1,790	(Gorostiaga et al., 2011)
BEN	Benin	French	210	(Zecca et al., 2013)
BGR	Bulgaria	Bulgarian	1,000	(Costa & McCrae, 2007)
BFA	Burkina Faso	French	717	(Zecca et al., 2013)
BFA2	Burkina Faso	French	470	(Rossier, Dahourou, & McCrae, 2005)
COG	Congo	French	220	(Zecca et al., 2013)
COD	Congo, Dem, Republic of	French	220	(Zecca et al., 2013)
CZE2	Czechia (NEO-PI-R)	Czech	2,288	M. Hřebíčková
CZE3	Czechia (NEO-PI-3)	Czech	1,639	M. Hřebíčková
ERI	Eritrea	Tigrigna	436	(Bahta & Laher, 2013)
EST2	Estonia (NEO-PI-R)	Estonian	7,292	A. Realo & J. Allik
EST3	Estonia (NEO-PI-3)	Estonian	3,345	A. Realo & J. Allik
FIN	Finland	Finnish	271	J.-E. Lönnqvist
GRC	Greece	Greek	734	(Fountoulakis et al., 2014)
ISL	Iceland	Icelandic	655	(Jonsson & Bergthorsson, 2004)
IND(E)	India	English	188	(Piedmont & Braganza, 2015)
ITA(R)	Italy	Italian	690	(Costa et al., 2007)
ITA2	Italy	Italian	569	(Costa et al., 2007)
LVA	Latvia	Latvian	933	(Van Skotere & Perepjolkina, 2011)
LTU	Lithuania	Lithuanian	317	(Žukauskiene & Barkauskiene, 2006)
MLI	Mali	French	240	(Zecca et al., 2013)
MUS	Mauritius	French	236	(Zecca et al., 2013)
MEX	Mexico	Spanish	775	(Church et al., 2011)
RUS(N)	Nenets (Russia)	Russian	80	(Draguns, Krylova, Oryol, Rukavishnikov, & Martin, 2000)
NZL	New Zealand	English	284	(Black, 2000)
NOR2	Norway	Norwegian	620	(Martinsen et al., 2011)
PHL(F2)	Philippines	Filipino	252	(Church et al., 2011)
POL	Poland	Polish	324	(Siuta, 2007)
ROU	Romania	Romanian	2,200	(Ispas et al., 2014)
ITA(S)	Sardinia (Italy)	Italian	5,669	(Costa et al., 2007)
SEN	Senegal	French	328	(Zecca et al., 2013)
ESP2	Spain	Spanish	682	(Sanz & García-Vera, 2009)

SWE2	Sweden	Swedish	676	(Källmen, Wennberg, & Bergman, 2011)
SWE2	Sweden	Swedish	766	(Källmen et al., 2011)
CHE(F2)	Switzerland	French	1,090	(Rossier et al., 2005)
CHE(F3)	Switzerland	French	1,787	(Zecca et al., 2013)
TUN	Tunisia	French	240	(Zecca et al., 2013)
GBR	United Kingdom	English	1,150	(Lord, 2007)
USA(B)	USA, Baltimore Longitudinal Study of Aging	English	1,944	(Terracciano, McCrae, et al., 2005, Appendix B)

Notes: [1] Omitted in the further analyses.

Results

Size of Cultural Differences

We started our analysis with the observation that personality differences across countries and cultures are surprisingly small. Out of 2,160 subscale T-scores (30 subscales by 72 samples) only 38 (1.76%) were smaller than 40 or larger than 60. This means that in more than 98% of all cases the differences from the 1992 American norms were smaller than one standard deviation. We also computed the standard deviation of the mean values across all 72 samples. The smallest cross-cultural variation (2.54) of the mean values was on E2: Gregariousness and the largest was on O6: Values (5.42). The average standard deviation across all 30 subscales was 3.48 or about one third of the within-sample standard deviation, which for *T*-scores is equal to 10. This is very close to a previous observation that the standard deviation of personality trait scores at the country (aggregate) level is about three times smaller than the standard deviation of individual level scores within countries or cultural groups (Allik, 2005). It is important to mention that sizes of the standard deviations of the NEO-PI-R/3 subscales are generalizable across countries/cultures (Allik et al., 2010). Thus, it is irrelevant which sample's standard deviation we are talking about. To get the ratio in terms of variances we need to square the standard deviations. The observed variance between samples were approximately 8 times (100:12.1) smaller than variances within each sample. This signifies that differences in personality between countries or cultures are small relative to interindividual variation.

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Geographical Patterning of Personality Profiles

Figure 1 shows the multidimensional scaling plot for the personality profiles reported in Appendix. Labels for the countries are according to three-letter country codes (ISO 3166-1) with suffixes if it is necessary to differentiate various versions or languages. To replicate the previous study (Allik & McCrae, 2004), similarities between personality profiles was defined as 1 – Pearson *r*, where the correlation was computed across T-scores for all 30 facets. In order to include USA data, in the previous study, the data were renormalized. Instead of the USA norms they were standardized into the T-scores relative to the means of 36 countries/cultures. However, we were not able to use the same protocol because the raw scores of these 36 countries/cultures were not available and restoring them through the inverse standardization formula may introduce additional errors. In order to treat all data identically, new entries in Table 1 were transformed into the T-scores using the 1992 American norms. The matrix of similarities was analyzed with a nonmetric multidimensional algorithm which attempts to reproduce the rank-ordering of the input similarities (Guttman, 1968). Although two dimensions were not enough (stress was .16) for representing all similarities between profiles, the first two dimensions still represented the largest portion of variance what could be explained. The configuration of the first two dimensions did not change substantially when additional dimensions were added. The coordinates of the plot were rotated into a position in which the horizontal axis correlated *r* = .65 with the scores of Extraversion (also with Openness *r* = .68) and vertical axis with Neuroticism (*r* = .70). Thus, as a mnemonic, "North" in the figure is associated with N (Neuroticism) and "East" with E (Extraversion).

Previous studies have shown that when individuals are compared based on their genetic similarities, the genetic plot often mirrors accurately geographic distribution of individuals. For example, the map of Europe can be deduced from genetic similarities of Europeans (Nelis et al., 2009; Novembre et al., 2008). However, it is obviously impossible to reproduce a geographic map of the people's habitat based on similarities between personality profiles alone. Nevertheless, in the study by Allik and McCrae (2004) personality profiles from 36 cultures suggested a clear contrast between European cultures (including North-Americans) on one hand and African and East-Asian cultures on the other. After adding a substantial number of African cultures and some new European cultures for the present analysis, the original distinction is no

longer as definitive. Nevertheless, Asian and African cultures do tend to take positions in the northwest quadrant of the map. However, the borders between continents are blurred. For example, Poland and Romania are located in the vicinity of several African cultures such as Tunisia, Mali, and Benin.

Figure 1: Multidimensional Scaling Plot of 75 samples.
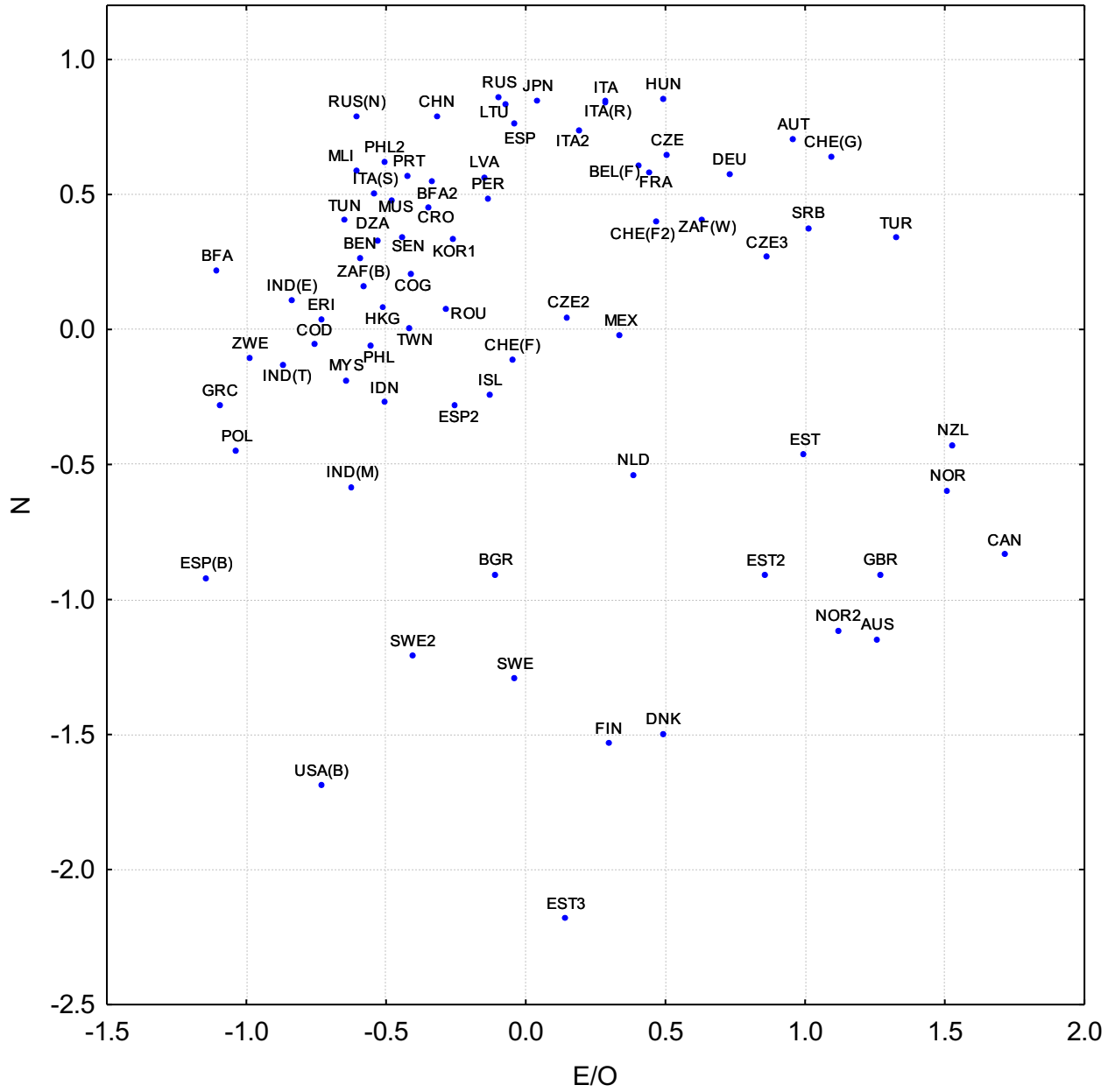
It is important to remember that the profiles presented in the Appendix are distinctive profiles (Allik, Borkenau, Hrebíčková, Kuppens, & Realo, 2015; Borkenau & Zaltauskas, 2009; Cronbach, 1955; Furr, 2008). They show how much the mean of each sample is above or below the average score of the USA 1992 NEO-PI-R normative sample on each trait. Although these USA scores by themselves are absent from the plot (Figure 1), they are logically represented by a point in the middle of the plot where the both axes cross at the zero point. There seems to be a clear distinction between two large groups split into two halves by a diagonal. Below the diagonal line are all English-speaking countries such as Australia, Canada, Great Britain, and New Zealand. They are accompanied by Scandinavian countries – Denmark, Finland, Iceland, Norway, and Sweden. President Toomas-Hendrik Ilves of Estonia set the goal for his country in his prominent speech at the Swedish Institute of Foreign Affairs on December 14, 1999.[1] He called for Estonia to become a "boring Nordic country." Although locations of Estonian samples – EST, EST2, and EST3 – have changed over time (EST3 data were collected most recently), they are still intermingled with Scandinavian countries. It is also surprising that Bulgaria is closer to these Anglophonic and Nordic countries than other Slavonic nations such as Serbia, Russia, or Poland. It should be noted, however, that Bulgarian data were collected from a randomized representative sample. Sometimes reliability of translated scales was relatively low and their correlations reproduced the original English version factor structure only vaguely (Bahta & Laher, 2013). Nevertheless, the shape of the personality structure of Tigrignas resembles some other African profiles such as Burkina Faso, Congo, and Benin.

There were also three waves of data collection for Czechia – CZE, CZE2, and CZE3 –, which are located close to Germany, Austria, Belgium, Switzerland, and France in the plot. The second sample from Norway (NOR2) landed on a position that is not very far from the first sample (NOR). New data for Spain (ESP2) were located a considerable distance from the previous Spanish version and much closer to the sample for which Basque—ESP(B)—version was used. Interestingly, Latvia and Lithuania, two newcomers, landed on the map very close to Russia. Although in the national character stereotypes they oppose themselves to Russians (Realo et al., 2009), their objectively assessed personality traits show very little differences from the average personality traits of Russians. The personality profile of Sicilians—ITA(S)—was

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[1] http://vm.ee/en/news/estonia-nordic-country

closer to the profiles of a group of African nations forming a Mediterranean group, while the rest of Italy was proximal to personality profiles of Czechs, Hungarians, and Walloons.

Discussion

When McCrae and colleagues (2005) represented other-rated NEO-PI-R profiles across the 51 cultures on a two-dimensional plot of similarities-dissimilarities of the profile's shape (see Figure 2 in that study), the observed configuration resembled in general those reported by Allik and McCrae (2004; Figure 2) for self-ratings across 36 cultures. The horizontal (Extraversion) coordinates of 26 overlapping countries/cultures were strongly related ($r = .69$, $p < .001$), but the vertical (Neuroticism) coordinates did not reach statistical significance. In part, this appears to be due to the shift of the three German-speaking cultures from the top of the self-report plot to the bottom of the observer-rating plot (McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005). It is not clear why German-speaking people would perceive themselves as higher in N than they perceive their compatriots. Studies have shown that the other-perspective is only slightly different from the self-perspective and if these differences exist they are universal (cf.; Allik et al., 2010). However, this study confirmed that after addition some new countries/cultures German-speaking participants still stand higher on N than, for example, English-speaking cultures.

It is generally agreed that that the world's happiest people live in Denmark, Switzerland, and Iceland (J. Helliwell, Layard, & Sachs, 2016). How do we know this? Because, among other things, a large number of people in a variety of countries were approached and asked to answer questions like that: "How happy are you?" After that, answers were aggregated and the mean value across these answers was computed for each country. It is generally believed that these country averages represent more or less accurately how happy people are in their respective countries. Analogously we can determine religiousness of people by asking, "How important is God in your life?" Once again, we expect that mean scores of these answers represent average religiousness of each country or cultural group reasonably well.

Personality questionnaires such as the NEO-PI-R/3 ask likewise about people's feelings, thoughts, habits, and values. When all personality ratings are aggregated, the country mean scores on personality traits are found. Unlike measures of happiness and religiousness, as stated

above, personality averages are often treated with suspicion (Heine et al., 2008; Meisenberg, 2015; Perugini & Richetin, 2007). Indeed, some country rankings on personality traits look very puzzling (Allik & Realo, 2016) and they correlate with some external variables in a paradoxical manner (Heine et al., 2008; Mõttus et al., 2010). Perhaps personality questionnaires have limited reliability and validity when used at the level of country averages (Meisenberg, 2015), but this new analysis of NEO-PI-R/3 aggregate scores provides another explanation. Cross-country and cross-cultural differences in personality are very small. Differences in personality between aggregate personality scores of countries/cultures are about 8 times smaller than differences between any two individuals randomly selected from the same sample. Because differences are small, it is difficult to establish "true" ranking of these countries/cultures on these traits. To establish stable rankings considerably larger samples than usual are required. The situation is probably similar to the field of genetics, where genome-wide association studies require much larger sample sizes than previously supposed to achieve adequate statistical power (Hong & Park, 2012).

It could be argued that observed human differences, including those for neo-personality variables, are small in general. However, this view is unsupported because, for example, country level mean differences in psychometrically measured intelligence and educational attainment are substantial and they share a common positive manifold (Lynn & Vanhanen, 2006; Rindermann, 2007). As another example, the *World Value Survey* (WVS 2005-2008), which collected answers from 82,992 participants in 57 different countries asked among other questions "How happy are you?" and "How important is God in your life?" (World Values Survey Association, 2014). Interestingly, differences between countries in their happiness were 7.6 times smaller than the typical interindividual variance of happiness within each sample. It is not very surprising that happiness question behaves like a personality item because positive emotions seem to form a core of one of the basic personality traits – Extraversion (Lucas, Diener, Grob, Suh, & Shao, 2000). In contrast, differences between countries in the perceived importance of god are huge compared with personality traits and happiness. The ratio of country-level variance to the mean within-country variance is only 1.28. This indicates that differences between means of any two randomly selected countries in the importance of god in people's life is practically as large as the difference between any two individuals who are living in the same country. Thus, there could be

substantial differences between countries on some constructs—but personality traits are not among them.

The relatively small size of cross-cultural differences in personality may be a nuisance for researchers, who attempts to establish these differences, but it is good news for clinical psychologists and test developers. The development of culture-specific norms for a proper psychological assessment of both normal and psychiatric samples it would be necessary to develop culture-specific norms would cumbersome. However, the relatively modest size of cross-cultural differences may imply that reasonable scalar equivalence can be achieved across cultures, and that all individuals, irrespective of their language and culture, can be represented in a reasonably common metric requiring only small adjustments (Allik, 2005).

Considering all possible sources of error – translation, sampling, response biases etc. – it is perhaps surprising that despite of overlap we replicated several features of the pattern observed in the initial sample of 36 cultures (Allik & McCrae, 2004, Figure 2). In spite of different norms (previous studies were normalized relative to the mean scores of all included samples while in this study we normalized relative to the 1992 USA normative data), the general pattern remained largely unchanged. This demonstrates that it is not very important relative to what specific standard T-scores are computed. Most previous samples preserved their relative position on the two-dimensional plot. New and replication samples landed, in most cases, on positions that could be expected based on the previous studies. Although a clear contrast of European and American cultures with Asian and African cultures, which was conspicuous in the initial sample of 36 cultures, was more blurred when cultural samples were added, there is still a recognizable grouping pattern. As was noted above, it seems that Scandinavian and Anglophonic countries (in addition to Dutch and Estonians) occupy territory in the plot, reflecting low Neuroticism but high Extraversion (–N+E). If we use Eysenck's rules on how to translate an ancient temperament typology – choleric, melancholic, phlegmatic, and sanguine – into personality trait terminology (Brand, 1997), then we are obliged to conclude that this particular group of countries are sanguine in their character. Following the same logic, all German speakers and Turks should be classified, on average, as choleric (+N+E) but Russian, Latvians and Nenets tend to be melancholic (+N–E). Although melancholy has been suggested as a national trait of Russians (Allik et al., 2011), there are probably few researchers who would consider Germans, Swiss, and Austrians as exemplary choleric. Thus, the relevance of Eysenck's typology seems to be

problematic, at the country level of analysis at least, because even experts in cross-cultural psychology are unable to judge the ranking of countries or cultures on objectively measured personality traits (McCrae, 2001). Even the collective wisdom of a large number of lay people is not helpful in this regard because national character stereotypes rarely converge with assessed personality traits (Terracciano, Abdel-Khalek, et al., 2005).

One indicator of the validity of country/culture level mean scores is the correlations found between rankings of samples on the principal axes of N and E/O and various socioeconomic indices (GDP, Human Development Index, Gini index) or cultural variables (Hofstede's or Inglehart's value dimensions) variables (Allik & McCrae, 2004, Table 2). For example, the ranking of 36 countries on the horizontal (E) axis was strongly correlated with their ranking on Hofstede's individualism dimension and the Human Development Index while the ranking on the vertical (N) axis was correlated with Hofstede's uncertainty avoidance ranking (Allik & McCrae, 2004, Table 2). The meaningful correlations between these personality rankings and cultural variables, provided strong evidence that the geographic distribution of personality profiles has a systematic pattern (Allik & McCrae, 2004). However, we deliberately abstained from testing how socioeconomic or cultural variables are related to the extended set of profiles and their two dimensional representation in the present analysis. All mean values of 30 NEO-PI-R/3 subscales for 62 countries/cultures are now available in the Appendix and interested colleagues can use data for testing their own theories.

Acknowledgements

Appendix. The mean normalized NEO-PI-R/3 scores for 75 samples

CODE	N1	N2	N3	N4	N5	N6	E1	E2	E3	E4	E5	E6	O1	O2	O3	O4	O5	O6
AUT	52.5	51.6	50.7	51.8	50.7	53.4	48.9	52.2	48.5	49.2	44.1	53.0	58.1	58.0	55.8	54.1	54.0	53.0
BEL(F)	52.4	50.6	54.9	50.8	51.0	53.0	43.3	52.7	46.7	48.8	47.9	50.5	52.8	52.8	50.2	49.3	48.6	52.1
CAN	50.4	49.4	50.5	50.8	50.7	48.9	50.4	50.2	49.7	51.3	51.3	52.5	52.0	51.6	51.9	49.5	50.4	52.7
CHN	49.7	54.1	54.0	54.9	47.2	56.3	45.7	53.2	46.4	49.3	46.8	45.3	45.8	53.6	44.7	43.1	47.6	49.7
CRO	50.5	52.2	52.1	51.8	46.7	50.5	43.0	49.6	45.3	51.7	44.7	48.0	48.9	53.2	47.7	44.5	49.7	44.9
CZE	51.1	51.3	51.9	49.0	52.0	59.9	50.5	48.3	47.9	47.8	42.4	52.3	52.4	52.0	51.6	53.7	49.8	49.9
DNK	46.4	44.9	49.2	48.4	49.8	47.6	49.5	55.9	48.0	56.8	47.1	52.2	47.6	46.8	47.4	51.5	46.4	48.9
EST	49.0	45.7	49.9	48.7	50.1	44.8	49.1	48.0	51.5	52.0	50.3	51.3	54.4	53.4	53.9	49.3	50.1	47.2
FRA	55.1	51.2	54.6	52.1	51.9	53.7	48.1	49.2	46.7	50.5	45.4	49.0	54.1	52.7	50.9	53.8	52.7	51.9
DEU	51.6	50.8	51.3	52.4	50.7	54.1	47.2	51.1	48.4	49.9	41.5	51.4	54.7	56.9	54.3	54.9	50.9	51.9
HKG	53.1	48.4	52.8	55.2	46.0	59.2	45.0	43.7	43.9	45.5	36.5	40.1	45.6	52.1	43.6	47.0	46.6	47.4
HUN	49.8	50.6	53.7	51.1	50.4	53.9	46.2	50.2	47.4	51.0	48.6	49.1	53.3	56.4	53.4	48.9	52.6	49.0
IND(M)	48.9	44.9	49.3	48.1	39.1	47.2	44.7	47.1	43.1	46.8	37.0	50.5	40.8	57.9	47.4	48.9	53.2	39.5
IND(T)	47.9	50.7	55.2	50.9	40.8	53.8	45.9	50.0	41.8	48.8	48.4	44.4	34.6	54.0	40.9	44.5	50.9	35.6
IDN	48.3	45.2	49.2	49.1	45.5	52.6	46.6	48.8	46.8	46.6	45.0	47.6	46.5	53.9	45.8	51.2	49.6	43.1
ITA	55.1	53.8	53.8	50.1	52.4	55.4	47.6	50.8	48.2	52.6	44.3	46.8	54.1	56.4	49.8	49.9	49.2	47.5
JPN	56.0	52.4	56.7	53.5	52.3	62.6	41.3	47.2	45.3	45.4	44.5	46.0	52.2	52.6	48.4	51.2	49.2	43.9
KOR1	53.1	50.0	54.6	56.7	45.9	57.3	41.3	48.5	46.0	45.6	40.3	43.0	48.4	52.9	46.5	47.3	48.7	48.9
MYS	52.3	46.4	53.0	57.6	46.0	51.5	45.1	45.9	46.9	45.1	38.6	47.8	42.2	49.3	43.8	52.1	49.9	34.4
NLD	48.5	45.5	50.9	47.9	48.6	48.2	43.9	49.3	46.9	47.6	40.1	49.3	51.4	54.1	50.5	54.2	51.0	55.3
NOR	47.3	46.5	49.6	47.7	54.7	47.7	47.5	56.6	50.7	53.1	50.7	54.4	52.9	50.7	50.1	53.2	49.6	53.0
PER	53.5	47.7	51.5	49.5	48.9	52.8	45.0	48.7	49.6	46.7	45.8	48.7	50.6	52.3	45.4	47.0	49.6	45.4
PHL	50.4	47.4	51.4	53.4	46.7	51.7	45.8	48.7	49.6	45.7	44.3	48.0	46.0	54.8	46.4	51.5	52.3	45.3
PRT	56.9	51.0	54.5	52.8	49.8	54.8	47.2	48.8	45.7	47.3	50.0	46.0	49.1	54.0	47.4	51.1	47.6	42.8
RUS	51.7	51.8	54.1	54.0	49.5	58.6	45.9	48.8	47.6	48.0	46.4	47.2	49.8	53.6	47.4	50.6	46.8	43.5
SRB	49.7	49.6	48.8	47.1	50.5	49.3	47.6	52.5	46.9	51.2	47.1	49.0	53.5	59.1	54.5	51.2	53.9	48.4

ZAF(B)	49.0	49.3	53.3	52.4	44.5	50.3	44.7	48.0	46.6	43.6	42.8	46.3	45.0	50.7	42.0	48.2	49.9	42.6
ZAF(W)	49.1	50.4	53.1	51.6	50.7	49.9	49.2	48.6	48.1	48.8	47.0	49.5	52.4	54.6	53.3	52.7	52.3	49.0
ESP	58.6	50.1	56.5	54.0	52.0	57.6	43.3	50.6	45.6	50.1	48.3	49.2	52.4	51.1	47.7	44.6	45.4	48.5
SWE	45.6	45.5	49.8	46.3	47.8	49.6	47.8	54.8	46.9	46.1	45.0	53.4	48.4	45.6	48.4	49.7	43.9	50.7
CHE(G)	51.0	50.6	50.1	53.1	51.6	53.4	47.3	51.1	49.8	52.8	46.2	52.5	57.0	57.3	56.4	55.4	54.8	53.6
TWN	51.1	46.4	52.6	53.9	45.4	56.0	46.1	46.5	45.6	43.4	41.4	46.8	46.2	54.7	47.4	47.3	46.2	47.1
TUR	47.9	50.7	50.9	53.1	49.0	51.6	47.7	52.8	48.8	50.7	50.2	53.1	49.8	53.0	50.5	52.0	47.4	51.5
ZWE	48.5	49.5	53.4	51.2	44.0	53.9	42.4	48.9	46.3	48.4	43.8	48.2	41.5	50.7	41.0	55.2	48.1	39.9
DZA	54.3	53.9	56.2	54.0	46.7	54.2	44.5	46.2	46.0	49.8	47.0	45.3	45.7	51.3	45.6	48.5	50.3	37.8
AUS	43.2	42.0	43.9	43.4	47.4	39.3	55.8	54.8	58.2	53.7	52.3	57.3	48.9	49.2	51.1	58.1	54.8	55.4
ESP(B)	54.0	49.9	51.2	52.6	45.1	55.7	44.9	53.5	46.0	52.4	46.9	50.9	50.9	48.1	47.2	47.8	45.6	50.0
BEN	52.5	52.6	55.7	57.2	44.9	51.1	45.9	52.3	45.7	44.0	49.6	48.0	43.3	54.9	45.0	54.1	52.2	40.0
BGR	45.3	42.2	44.2	48.2	38.3	42.3	51.4	54.5	50.8	53.1	43.5	47.8	40.9	54.3	45.3	48.4	49.4	47.2
BFA	58.4	56.2	59.0	59.8	48.2	58.3	45.3	50.5	45.6	44.3	48.7	43.8	47.0	53.9	43.3	52.2	51.7	41.3
BFA2	57.6	55.0	58.3	59.3	47.4	57.2	45.8	50.5	45.5	44.3	48.4	44.1	46.5	53.2	43.2	51.8	52.1	41.6
COG	50.9	52.6	55.5	54.2	43.8	50.7	46.3	49.0	51.5	45.8	46.2	46.3	44.1	51.2	41.9	52.1	51.0	40.9
COD	49.7	52.6	53.4	53.6	43.6	49.9	43.8	50.2	50.9	46.4	44.1	43.9	43.7	49.4	39.0	49.4	49.8	38.8
CZE3	50.2	48.9	50.0	47.8	51.2	51.0	51.6	48.1	51.1	48.9	42.2	51.3	51.5	50.6	50.6	55.1	50.7	51.0
CZE2	51.3	51.1	52.7	49.5	51.8	54.6	49.9	49.3	49.4	48.2	42.9	52.5	51.9	51.9	50.0	53.8	49.1	48.9
ERI	47.1	46.6	53.0	53.8	40.1	53.2	41.1	44.7	41.8	40.9	46.9	47.4	38.9	51.1	40.9	46.5	48.5	34.3
EST3	51.0	51.6	48.1	51.1	48.9	42.2	51.3	51.5	50.6	50.6	55.1	50.7	51.0	42.3	52.3	50.2	46.9	48.8
EST2	47.7	47.3	48.6	48.8	49.3	46.1	49.3	50.9	52.3	50.7	48.0	48.2	46.5	49.2	48.4	44.8	46.1	52.3
FIN	48.4	45.8	48.5	49.9	50.4	46.8	47.1	49.6	49.6	52.1	46.6	50.0	52.0	50.4	45.7	54.3	48.4	50.0
GRC	53.3	50.2	50.7	50.2	46.4	52.8	45.4	50.9	48.9	51.3	42.6	46.5	45.4	50.0	45.5	47.7	45.6	45.2
ISL	47.6	50.5	50.4	50.8	50.9	50.7	47.9	51.9	45.8	51.0	42.4	50.9	47.9	50.0	47.8	46.5	46.7	46.4
IND(E)	53.0	52.9	55.8	48.7	47.7	55.7	45.2	48.1	47.4	48.2	47.3	48.5	45.1	55.0	46.9	49.4	48.7	45.4
ITA(R)	55.1	53.8	53.8	50.1	52.5	55.4	47.6	50.8	48.2	52.6	44.3	46.9	54.1	56.4	49.8	49.9	49.2	47.4
ITA2	55.8	51.5	54.1	50.2	51.0	56.1	46.0	51.3	47.6	50.7	46.1	46.5	55.3	54.8	49.2	50.7	49.9	45.0
LVA	54.3	51.4	53.5	52.7	50.5	56.0	44.4	49.5	48.5	48.9	43.8	45.9	50.5	51.1	48.7	47.0	46.0	45.0
LTU	51.2	51.1	53.3	52.1	47.0	54.9	44.9	50.3	47.3	50.2	47.6	49.3	50.2	52.7	46.3	46.7	45.5	45.4
MLI	53.6	53.2	53.9	55.4	46.2	53.7	46.9	54.0	48.7	47.9	48.4	46.1	43.0	51.6	43.0	50.2	52.1	37.0

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MUS	53.9	52.7	54.9	51.8	48.3	53.7	46.2	46.6	48.0	50.8	48.0	47.4	47.2	50.7	47.3	48.3	50.5	41.9
MEX	50.6	49.3	49.2	48.0	48.1	52.0	44.9	51.9	51.5	48.3	54.3	53.1	51.4	53.6	47.5	46.4	52.7	46.9
RUS(N)	53.4	54.6	54.7	58.6	48.8	59.1	42.7	46.9	44.8	49.5	49.4	43.8	48.9	53.5	41.9	48.1	46.5	39.3
NZL	46.9	39.5	45.5	47.2	45.1	43.3	54.4	52.4	51.6	52.6	47.7	55.8	43.6	46.8	50.9	55.8	47.7	55.0
NOR2	48.8	44.7	50.2	46.9	52.9	47.9	48.3	54.0	51.4	56.3	45.9	52.3	51.0	53.4	50.6	55.9	48.9	54.4
PHL2	55.5	50.5	54.3	56.4	48.7	54.6	45.2	52.5	50.1	46.7	51.3	49.0	49.7	53.7	51.9	54.5	51.7	33.8
POL	53.6	50.1	55.3	54.9	46.7	56.1	45.4	48.7	45.0	51.7	41.7	45.0	46.1	49.8	44.3	48.4	46.5	43.4
ROU	49.5	49.9	50.3	50.7	44.6	49.3	46.4	50.0	49.7	50.3	44.2	45.4	46.5	50.6	45.8	48.3	49.2	45.7
ITA(S)	54.1	50.7	52.9	50.8	47.6	55.1	47.5	53.1	47.0	50.2	46.1	46.0	49.5	50.8	44.9	52.0	45.0	42.0
SEN	53.6	50.9	54.2	53.5	44.5	49.3	47.7	48.3	47.7	48.8	44.4	46.6	45.9	52.1	43.3	49.1	54.4	41.9
ESP2	54.2	46.8	51.7	50.2	48.5	51.4	46.0	47.9	48.4	49.6	38.4	49.6	48.6	50.9	46.1	47.2	46.6	49.6
SWE2	44.7	45.0	49.4	45.6	45.5	48.6	46.6	51.4	46.8	47.4	39.9	50.9	45.9	45.4	47.4	48.8	43.8	50.9
CHE(F)	54.9	50.8	53.4	51.9	51.8	52.3	48.5	47.5	46.8	50.9	44.0	50.7	54.7	53.1	51.4	53.0	50.4	51.3
CHE(F2)	54.6	50.5	53.5	52.0	51.8	52.4	49.2	48.4	47.0	51.4	44.3	51.5	54.4	52.9	51.6	52.7	50.7	50.9
TUN	51.7	52.5	54.1	54.0	47.7	53.8	45.4	48.3	47.5	48.9	48.8	47.8	46.6	52.3	45.3	48.2	48.8	38.5
GBR	44.3	40.7	43.0	41.7	43.6	38.7	53.1	53.9	58.9	59.0	45.9	54.4	48.3	52.7	52.4	62.7	55.0	58.4
USA(B)	48.3	48.7	48.0	48.5	48.9	48.4	50.4	50.6	52.8	51.2	48.1	49.9	51.2	53.5	50.6	50.9	51.8	50.7

Continued…

CODE	A1	A2	A3	A4	A5	A6	C1	C2	C3	C4	C5	C6	N	E	O	A	C
AUT	46.0	43.0	45.6	46.3	46.4	53.8	47.2	47.4	46.7	49.4	43.7	47.6	52.9	48.4	59.1	48.2	46.7
BEL(F)	47.7	48.9	44.7	46.4	53.6	53.8	43.8	47.2	48.7	48.5	46.1	49.1	53.0	47.7	51.8	50.0	46.6
CAN	51.6	52.4	53.7	50.1	48.9	52.5	50.7	49.3	49.8	47.5	48.3	50.8	50.5	51.7	51.6	51.9	49.2
CHN	50.0	48.4	41.7	40.9	47.2	54.2	44.0	47.7	50.5	49.7	47.2	57.2	53.1	44.5	48.3	47.8	50.3
CRO	45.5	46.2	47.6	47.0	48.5	50.6	47.6	50.2	51.5	54.6	48.5	51.8	52.8	45.1	49.0	47.5	53.2
CZE	41.0	51.7	48.3	48.1	51.0	50.1	40.3	47.7	50.1	49.7	45.2	49.8	54.2	47.4	52.3	50.7	47.5
DNK	54.2	52.7	48.6	50.6	51.2	51.5	48.2	48.7	50.6	48.5	49.4	48.5	46.5	52.8	46.5	52.0	47.5
EST	52.1	46.8	45.0	46.9	55.3	56.6	44.6	50.3	52.4	50.2	49.6	50.6	49.7	49.9	52.6	50.8	49.6
FRA	43.0	50.1	48.9	49.8	55.4	54.7	42.1	48.3	49.2	48.2	44.7	48.0	55.4	47.3	54.1	52.1	47.4
DEU	46.2	44.8	44.7	48.1	46.7	54.1	45.3	48.7	46.7	48.2	44.6	47.0	52.8	47.3	56.7	49.1	46.7

HKG	48.6	55.4	40.7	57.4	48.1	52.4	40.3	48.6	48.6	48.7	48.7	53.4	53.3	37.6	49.2	54.6	49.2
HUN	45.6	47.0	48.4	47.2	49.3	47.0	42.5	51.8	51.2	50.3	45.8	49.5	53.8	47.1	53.7	47.9	50.0
IND(M)	54.7	56.7	47.1	54.2	47.7	56.2	47.7	55.5	54.0	55.0	48.8	55.1	49.1	40.7	51.4	56.7	55.7
IND(T)	51.6	54.5	47.1	53.9	52.2	60.5	43.8	52.7	52.2	53.6	49.0	56.6	52.3	43.5	44.0	55.9	54.0
IDN	52.2	52.1	44.8	52.3	50.7	46.3	42.0	52.1	49.2	54.3	45.9	56.4	48.6	43.3	49.9	51.9	50.3
ITA	44.6	52.9	48.1	43.6	49.8	48.9	44.1	45.0	51.3	49.3	48.2	51.9	55.6	46.6	52.6	48.9	50.4
JPN	47.9	49.7	35.9	51.2	46.4	44.7	34.9	45.6	43.2	45.9	39.8	48.0	55.3	41.7	51.7	47.7	42.6
KOR1	51.2	52.1	43.2	50.4	46.7	53.3	42.1	47.6	52.8	47.9	44.9	52.5	53.6	40.0	51.4	52.3	48.8
MYS	51.1	54.6	46.5	57.4	53.0	64.6	44.9	56.3	53.2	55.0	44.5	56.9	54.2	42.5	46.6	58.5	54.2
NLD	51.5	51.9	45.5	51.5	54.0	57.9	45.6	48.7	52.5	49.6	50.0	51.2	48.6	43.9	55.7	54.6	48.6
NOR	51.5	50.1	48.6	48.5	49.7	52.8	47.8	48.2	49.0	48.8	45.8	48.6	47.4	53.6	51.5	49.9	45.7
PER	45.5	48.1	45.4	49.6	46.0	51.9	47.8	46.5	49.4	53.1	44.8	50.9	50.8	45.5	50.0	48.6	49.0
PHL	49.5	50.4	46.9	54.9	49.7	53.6	47.1	50.7	49.0	52.4	49.4	54.7	50.8	43.8	51.8	52.9	51.5
PRT	46.1	47.1	45.6	52.3	52.9	52.9	44.9	50.8	50.2	51.7	46.4	51.4	55.5	46.3	49.2	51.2	50.3
RUS	47.0	43.2	41.3	46.9	49.6	46.0	40.6	50.2	46.0	46.8	43.8	50.3	53.7	45.1	49.0	46.7	46.5
SRB	47.1	49.5	48.9	46.4	46.0	49.5	46.9	50.3	51.3	54.2	47.7	51.0	51.1	47.6	56.0	48.4	51.7
ZAF(B)	44.9	48.4	41.9	54.8	49.9	50.2	44.2	48.9	45.7	48.1	47.0	53.5	49.1	41.4	47.7	50.4	47.9
ZAF(W)	47.5	52.7	48.1	50.7	52.1	52.3	45.4	46.8	48.5	47.3	47.1	50.1	51.9	47.2	54.4	52.2	47.9
ESP	47.0	43.8	45.8	44.8	53.1	57.2	44.6	48.1	47.8	51.4	44.3	51.8	57.1	48.3	48.0	49.4	48.3
SWE	52.9	51.8	51.7	52.7	54.6	59.1	48.8	49.8	52.7	42.7	47.0	54.5	46.3	50.6	46.0	56.5	45.7
CHE(G)	46.0	44.7	46.5	45.1	46.7	51.5	48.9	50.6	48.6	50.6	45.6	48.7	53.2	48.5	58.9	47.0	49.6
TWN	50.4	51.3	45.4	56.9	45.6	53.1	42.5	47.3	48.9	49.7	45.7	54.4	51.5	42.0	50.2	54.5	48.1
TUR	47.2	53.5	51.6	45.5	44.3	48.0	49.5	47.3	50.2	52.0	48.2	51.4	50.9	50.3	50.8	48.5	50.4
ZWE	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.9	42.3	47.0	51.0	51.8
DZA	44.6	52.0	40.1	54.5	48.7	56.2	40.9	53.1	49.3	55.3	48.1	55.2	54.2	45.0	45.4	50.7	49.9
AUS	40.6	53.3	50.7	50.6	51.5	56.0	43.1	51.0	49.9	52.7	46.8	53.9	41.0	57.9	53.9	54.0	57.0
ESP(B)	54.5	51.7	56.6	51.8	50.4	51.3	57.2	52.7	55.7	56.9	55.7	54.0	51.9	48.8	47.3	52.5	47.4
BEN	47.7	55.1	46.2	51.5	50.2	59.7	43.9	49.1	49.1	48.4	46.1	51.3	53.1	47.0	47.8	49.5	52.0
BGR	39.8	49.6	46.2	55.3	49.4	59.5	46.2	53.4	49.4	54.5	47.5	57.0	41.4	50.4	46.6	53.6	59.5
BFA	53.2	53.9	53.8	51.9	53.2	47.3	52.4	56.1	59.3	58.9	57.7	57.9	59.2	44.9	47.8	48.1	47.2
BFA2	39.4	46.5	45.5	51.9	51.3	59.6	39.9	49.1	46.6	53.5	43.9	52.9	58.1	45.0	47.6	49.4	48.1

COG	40.4	47.6	46.0	52.9	52.0	60.1	40.7	49.9	47.7	53.8	44.7	53.6	51.9	46.7	45.6	51.2	52.9
COD	42.0	51.9	47.7	54.8	50.4	58.1	47.0	53.9	50.1	55.7	47.8	58.3	50.9	45.3	42.9	47.4	52.9
CZE3	41.4	51.1	46.0	47.5	50.5	49.5	39.3	47.5	48.1	50.0	44.5	48.8	49.8	48.3	52.2	47.1	49.1
CZE2	41.5	50.0	46.2	54.4	46.3	50.8	50.0	53.5	48.5	54.5	48.2	59.4	49.8	48.1	51.4	46.5	45.3
ERI	44.2	50.0	41.6	55.9	54.2	53.7	39.7	54.8	50.9	53.3	44.6	56.4	48.8	40.9	40.5	50.1	50.2
EST3	54.8	44.7	53.3	51.5	48.9	49.0	51.7	53.3	51.5	48.9	49.0	51.7	50.2	48.9	50.0	47.8	51.2
EST2	42.3	52.3	50.2	46.9	48.8	48.3	43.7	50.9	51.0	50.1	48.2	51.4	50.1	47.8	50.7	49.4	49.7
FIN	54.8	50.2	44.4	52.6	47.2	48.5	51.7	52.7	48.7	49.6	49.8	47.4	47.7	48.8	50.1	49.7	50.0
GRC	48.3	43.7	50.9	51.0	50.1	48.2	51.4	55.6	53.0	48.1	48.9	53.5	50.9	46.6	45.1	48.8	51.5
ISL	43.7	51.5	47.6	50.8	48.8	53.3	45.2	53.1	51.6	52.9	50.1	53.0	50.2	47.6	46.5	55.5	48.9
IND(E)	52.1	53.7	50.8	57.9	54.3	52.2	44.0	47.8	55.2	49.9	48.1	50.3	53.3	46.3	47.9	46.6	47.7
ITA(R)	44.6	52.9	48.0	43.6	49.8	48.8	44.1	44.9	51.3	49.3	48.2	51.9	55.5	46.6	52.6	48.9	50.4
ITA2	42.6	47.9	46.6	43.7	48.8	53.5	42.8	46.0	48.9	48.9	47.9	50.7	55.0	46.9	52.1	48.1	48.7
LVA	44.4	49.8	43.6	49.1	46.1	54.4	43.2	49.3	46.4	50.6	48.6	51.8	54.1	45.6	47.3	42.9	46.5
LTU	46.1	45.0	41.5	47.1	45.1	47.2	43.3	51.1	46.6	49.5	45.2	47.9	52.2	47.5	47.2	46.5	46.2
MLI	48.1	47.9	42.7	47.9	48.3	51.0	41.3	48.9	49.1	47.6	44.9	50.1	53.7	48.3	44.6	46.6	51.5
MUS	43.0	46.5	44.7	49.7	48.1	56.4	46.9	49.7	49.5	55.0	48.5	56.6	53.7	46.8	46.9	49.9	49.2
MEX	41.5	52.4	45.9	52.1	51.3	57.1	45.2	50.7	49.4	51.9	47.1	52.6	49.4	51.2	50.2	42.4	50.3
RUS(N)	44.5	43.7	45.9	46.0	43.0	48.8	48.2	47.1	51.9	54.0	47.3	53.0	56.5	42.3	45.0	40.6	45.6
NZL	42.0	39.3	38.3	41.6	49.0	47.2	40.5	52.4	42.8	47.4	45.3	49.2	42.9	53.6	48.9	60.2	55.3
NOR2	54.2	53.9	49.2	51.7	50.2	50.4	49.0	48.8	49.0	49.8	48.8	47.7	48.1	52.0	53.3	52.6	48.5
PHL2	44.6	45.5	44.8	52.0	47.8	55.9	46.9	50.4	49.1	55.6	47.9	55.2	54.6	49.0	49.3	47.2	51.2
POL	55.3	58.4	56.7	58.5	55.5	54.5	52.9	52.3	56.2	54.1	55.7	54.0	53.9	44.5	44.7	47.4	48.0
ROU	46.9	49.1	43.3	49.6	52.3	47.5	42.9	51.5	49.6	50.8	47.2	48.0	48.9	46.7	46.7	46.2	50.8
ITA(S)	45.9	49.4	44.2	49.2	46.8	49.6	46.0	51.7	50.3	52.1	50.4	52.2	53.2	47.5	46.5	49.7	49.8
SEN	44.8	48.7	46.9	45.0	51.6	53.4	42.7	48.6	50.0	50.2	49.2	53.5	51.6	46.2	47.6	54.8	55.0
ESP2	49.8	48.8	46.6	50.6	54.0	56.8	46.9	49.6	52.5	52.0	48.8	53.3	50.7	45.1	47.3	51.7	50.7
SWE2	53.2	53.8	51.4	54.1	57.0	59.2	49.6	51.3	56.0	44.2	50.3	55.0	45.4	45.9	45.0	57.3	51.3
CHE(F)	46.0	53.5	50.6	54.1	54.4	60.1	47.7	53.6	54.2	57.7	50.6	58.3	53.5	47.0	53.6	51.7	46.4
CHE(F2)	46.2	51.4	48.2	51.8	53.5	55.9	42.3	47.6	49.8	49.1	46.4	47.8	53.4	47.9	53.4	52.3	46.4
TUN	46.6	52.1	49.3	52.0	53.4	56.0	43.0	47.6	49.7	49.3	46.3	47.5	53.1	46.8	45.5	48.0	48.3

GBR	39.5	52.4	49.8	48.2	47.8	56.2	42.8	49.7	48.9	53.7	45.2	51.1	39.4	56.1	56.8	54.0	57.6
USA(B)	56.6	50.5	53.3	55.1	50.1	50.0	57.0	50.8	56.8	58.9	57.3	53.9	47.8	49.2	53.3	50.3	50.0

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