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Top and Bottom Coding at LIS

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Abstract

This technical paper reassesses the need for top and bottom coding techniques in the LIS databases. Using the Gini Index, we compare the previous top coding procedure (10 times the median of household income) with alternative measures, such as 20 times the median and the detection of extreme values via the interquartile range. Likewise, using the Atkinson Index, we perform a sensitivity analysis for bottom coding techniques. The previous method (bottom coding at 1 % of the mean of equivalised household income) is contrasted against bottom coding at value 0 and the detection of extreme values via the interquartile range. After carefully analysing the results, LIS has adopted the practice of setting extreme income values for a bottom and top code for its Key Figures and Data Access Research Tool (DART). The new procedure first defines the interquartile range (IQR) of the logarithm of the income and detects values which could possibly be assessed as outliers (3 times below or above the IQR).

Keywords: top and bottom coding, methodology, interquartile range, Atkinson Index, Gini Index

[1] The author is grateful for various valuable comments and ideas received from Philippe Van Kerm, Piotr Paradowski, Teresa Munzi, and Daniele Checchi in completing this exercise of reassessing top and bottom coding practices at LIS.

Introduction

Since its foundation in the 1980s, LIS has acknowledged that even after harmonisation comparability concerns between household surveys from different countries could remain. Such differences arise mainly from national methodological procedures, when implementing representative surveys. In the beginning, this concerned mostly varying sample sizes and income units (Smeeding *et al*., 1985; O'Higgins *et al*., 1985, Atkinson *et al*., 1994). Later, differences in top coding practices by data providers and representativeness of the upper end of the income distribution (Gottschalk and Smeeding, 2000; Cowell and Flachaire, 2007) were discussed.

In order to keep *true* country rankings unbiased by nationally applied top coding procedures, the use of bottom and top coding techniques was proposed and disseminated. Besides others, Gottschalk and Smeeding (1997) and Smeeding (1997) implemented a top code of 10 times the median of disposable income, which equally served as a benchmark applied to the LIS Key Figures. Similarly, Fritzell (1992) applied a top coding value of 15 times the median in order to reduce the influence of extreme values at the top. At that time, Gottschalk and Smeeding (2000) reassured that LIS top coding had no influence on rank order and in general had a very limited influence on the Gini Index of advanced countries. Whereas this statement seemed a proper one for the advanced countries, Székely and Hilgert's (1999) cross-national study of 18 national surveys from the LAC countries showcases well how underestimation of top incomes varies across countries in the region. Moreover, top coding practices are hardly found in LAC countries.

As the LIS Database has gradually grown to include more and more emerging economies, additional sensitivity analyses have become necessary. A main motivation of this paper is to reassess the influence of the previously applied top and bottom coding practices on the emerging economies. We acknowledge that the general idea of top and bottom coding is not unproblematic, as cutting the data at the extreme of maximum values could reduce inequality (when there is no measurement error in the data). On the other hand, when there is measurement error, it could turn out to be a plausible strategy to reduce variability in the tail distributions and to enforce a common practice to preserve 'smoothened' trends and country rankings between data sets with varying degrees of measurement error. We therefore aim to clarify whether the necessity to use top and bottom coding practices with the data at hand remains.

The following empirical section will show a sensitivity analysis for top coded and bottom coded incomes separately. Using the Gini Index we compare the previous top coding procedure (10 times the median of equivalized disposable income) with alternative measures, such as 20 times the median of equivalized disposable income and the detection of extreme values via the interquartile range (IQR). Likewise, we perform a sensitivity analysis for bottom coding techniques. The previous method (bottom coding at 1 % of the mean of equivalized disposable household income) is compared against bottom coding at value 0 and detection of extreme values via the interquartile range (IQR). In the final section, we will discuss why we adopted the practice of top and bottom coding at the lower and upper boundary for extreme values for the LIS Key-Figures and other indicators in LIS' Data Access Research Tool (DART). Last, we briefly present more advanced statistical measures which are specifically intended for modelling the tails of the distribution.

Sensitivity Analysis of Bottom and Top Coding

First, we investigated the impact of different top coding procedures on the Gini Index for disposable household income (and likewise for wages). We computed three alternative measures in comparison to non-top-coded income.[2] The first one is the threshold that for many years has been put in place by LIS and which has been adopted by many LIS users, the top code at 10 times the median of disposable income. A second one simply raises the threshold to 20 times the median, to accommodate more unequal income distributions in the recently added emerging countries. And a third one, the interquartile range (IQR), is a common procedure that is applied to detect extreme values in distributions. The IQR is, for example, applied by the European Commission – Eurostat (2018) for the detection of outliers in the wage distribution; by reporting back to national agencies, data providers are asked to possibly confirm or correct for these values. A log transformation before defining the interquartile range takes into account that income is skewed to the right. Thus the upper boundary is defined as Q3*(Q3/Q1)^3.[3] which is then used as a top code (Figure 1). We therefore basically tested the impact of this technique as a strict top code.

Figure 1: Interquartile Range at the upper boundary

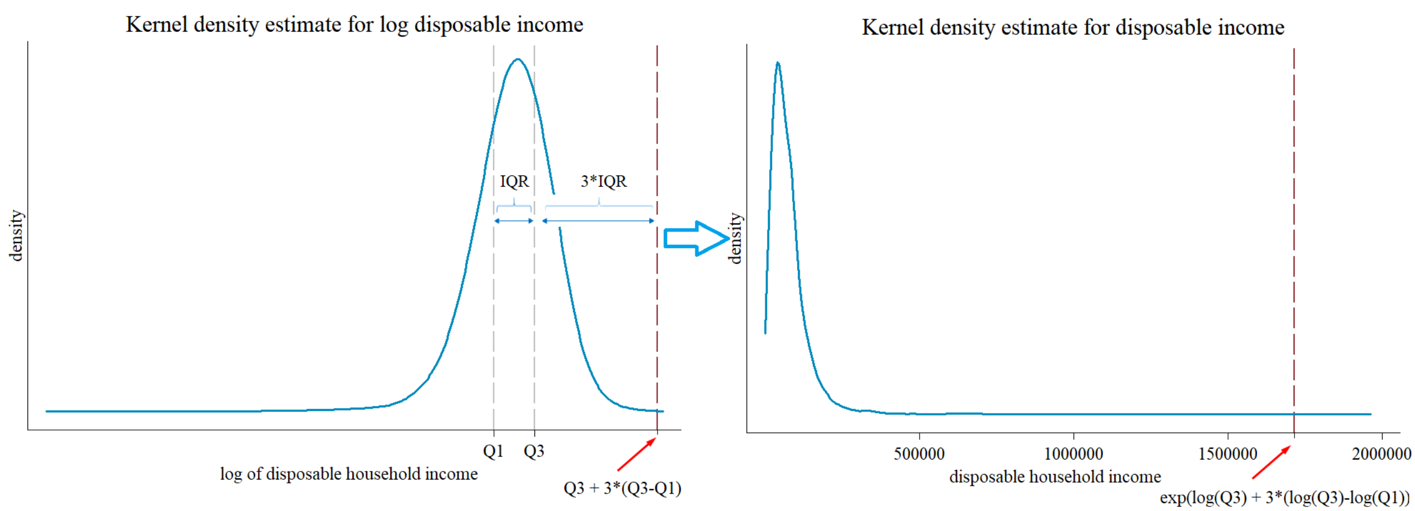
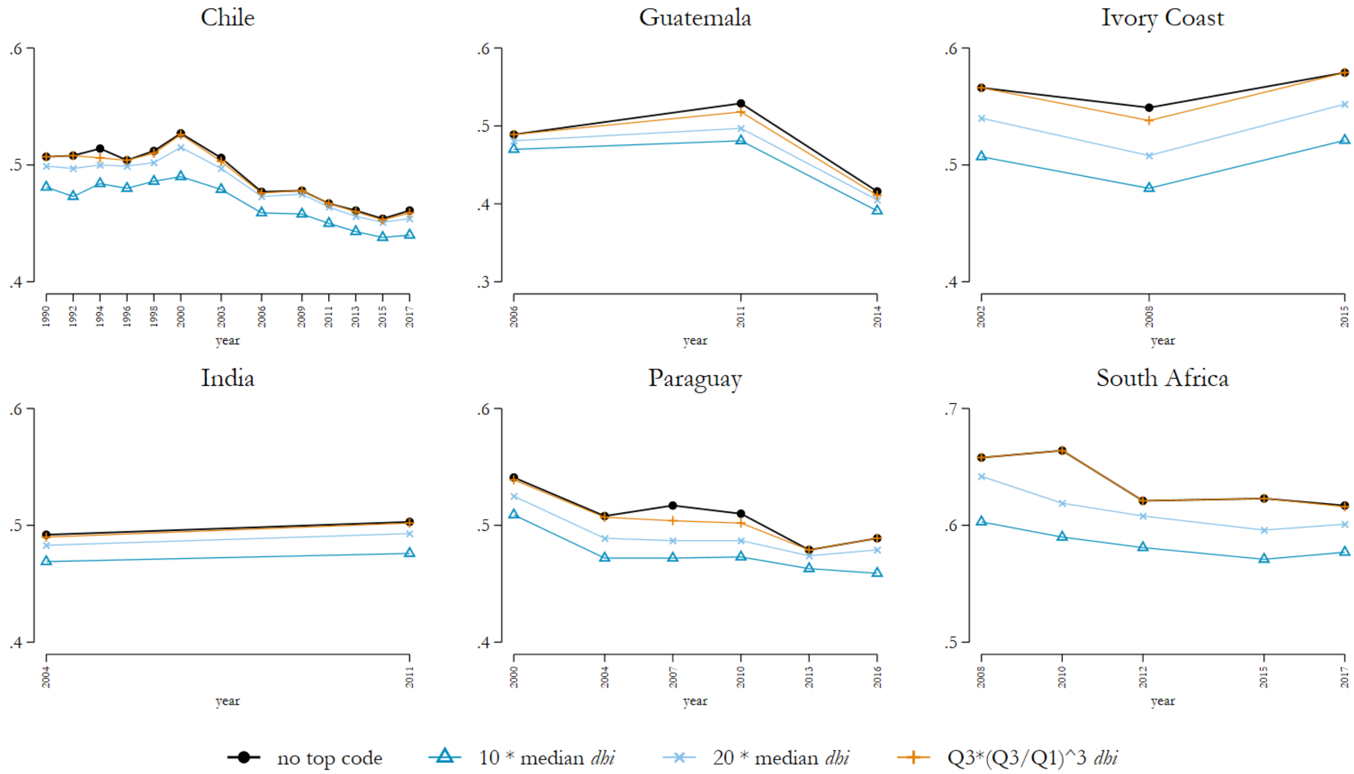


Figure 2 shows findings for the Gini Index on disposable household income (equivalised by the square root of household members) for selected countries. Equally, Figure 3 shows findings for wages. Many countries show that the IQR is much closer to the reference scenario of non-top-coded values. Particularly striking are the considerably lower Gini values in emerging economies when applying the 10 times the median threshold. Even top coding by 20 times the median keeps inequality in various countries far below the IQR (e.g. Chile, Guatemala, India, Ivory Coast, Paraguay, and South Africa).

[2] Another technique, trimming the upper end, was disregarded, as this technique would impact datasets where a top code has been applied. Thus by trimming the top end of the distribution we would further reduce inequality.

[3] This formula is equal to, first, defining a new log transformed variable disposable household income, second, calculating the log values for the interquartile range, and finally using the exponential of the log values in the original income distribution before log transformation, EXP [log Q1 - 3*(logQ3 –logQ1)] for the lower boundary and EXP [log Q3 + 3*(logQ3 –logQ1)] for the upper boundary.

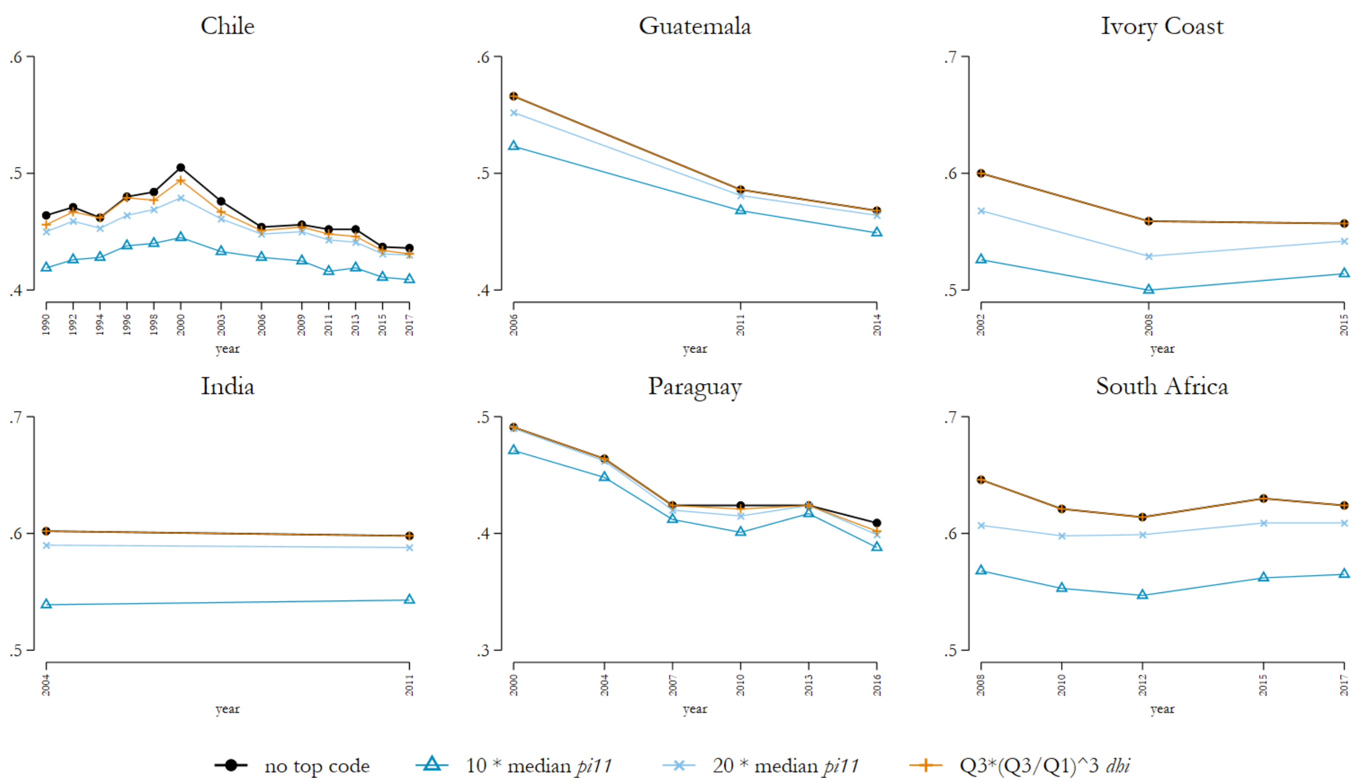
Figure 2: Alternative top coding procedures – Gini Index disposable household income (selected countries)



Note: See Figure 2 in the Appendix for all LIS datasets.

Source: Luxembourg Income Study (LIS) Database, accessed August 2020.

Figure 3: Alternative top coding procedures – Gini Index wage income (selected countries)



Note: See Figure 3 in the Appendix for all LIS datasets.

Source: Luxembourg Income Study (LIS) Database, accessed August 2020.

A second set of analyses concerns the bottom coding of values. The bottom coding of negative values has been a pragmatic decision in the past. As various data providers do not specifically collect losses in self-employment income or capital income, the LIS data was considered more comparable when negative values were set to non-negative values throughout the database. It is worth mentioning that this procedure is directly applied to disposable income and not at the level of the source income (more specifically, this means that when a loss in a household is offset by other income then no bottom coding is applied for this household). In order to keep the low values in the distributions for various income measures (and hence to distinguish them clearly from values 0), these values have previously been set to 1 % of the mean of equivalised disposable household income.

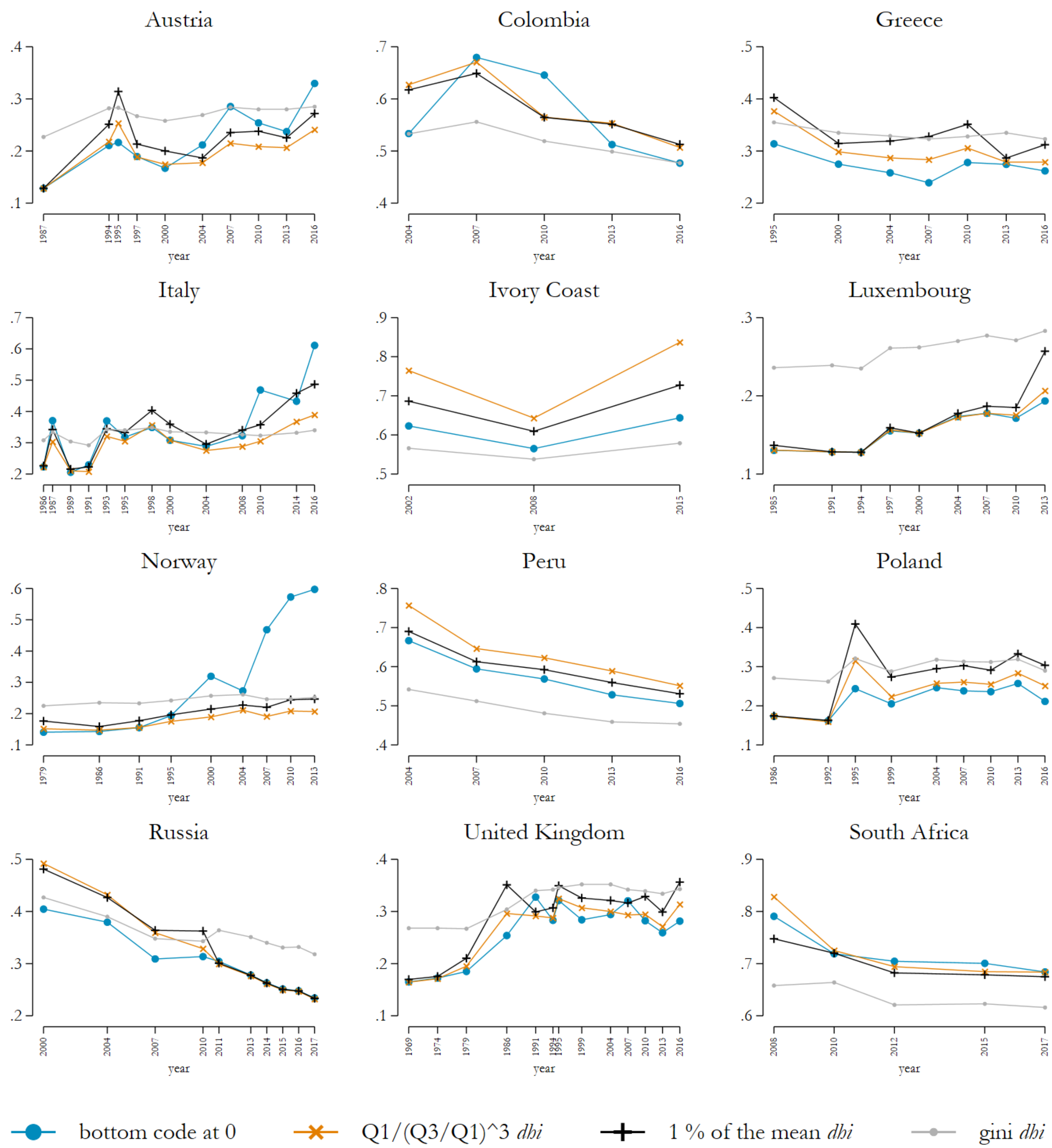
The previous method of setting negative values to 1 % of the mean is here contrasted with two measures: bottom coding at value 0 and bottom coding at the lower boundary for extreme values by the interquartile range, where the lower boundary is defined as Q1/(Q3/Q1)^3.

In a first step, we calculated the Gini Index for bottom coded distributions at value 0 and bottom coded values at the lower boundary of extreme values. These results are not shown here, as the Gini Index proved to be very insensitive to bottom coding procedures and in only a few cases changed by 0.1 % (e.g. 33.2 % instead of 33.3 %), and very rarely by 0.2 %.

Thus, in a second step, we tested the influence on a more critical measure towards low values, the Atkinson Index (Atkinson 1970), combined with a risk aversion parameter epsilon (ε) equal to 1.5. Note, however, that these three measures are not directly comparable as the computation of the Atkinson Index bottom coded at value 0 excludes negative and 0 values from the distribution. We perform this comparison at this stage to show that with a strict bottom code at value 0, very low reported values remain unmodified in the income distribution (after looking at the raw data these refer typically to very low capital incomes as the only income source collected). We therefore report the sensitivity of the Atkinson Index with epsilon (ε) equal to 1.5 with respect to these very low values and then contrast it to a more general approach, where we keep all observations in the sample but where we apply a positive lower bound on both negative and 0 values.

Figure 4 illustrates the sensitivity in the various bottom coding techniques for selected countries. First of all, due to the actual existence of very low values in the raw data, the calculations of the Atkinson Index became quite sensitive in some datasets, as can be seen, for example, in the extreme jumps in Italy and Norway. The alternative bottom coding techniques, applying 1 % of the mean or the lower boundary for extreme values, yield more stable patterns. Bottom coding at the boundary for extreme values strongly reduces the jumpy pattern of the Atkinson Index, as compared to the 1 % of the mean. An additional line for the Gini Index allows for a direct comparison of the country-specific trends.

Figure 4: Alternative bottom coding procedures – Atkinson Index (ε=1.5) disposable household income (selected countries)



Note: See Figure 4 in the Appendix for all LIS datasets.

Source: Luxembourg Income Study (LIS) Database, accessed August 2020.

Particularly in emerging economies (see Ivory Coast, Peru, and South Africa) that have very unequal income distributions, the threshold for extreme values at the bottom is even lower than the threshold of 1 % of mean equivalised income. Hence fewer cases are treated in the extreme values approach and more inequality is kept in the data. The lower boundary for extreme values refers in 50 % of the datasets to a range between 2.8 to 5.8 % of mean equivalised dhi; 90 % are in a range between 1.3 to 8.5 % of mean equivalised dhi.

Table 1 in the Appendix summarizes the treated cases when applying different top and bottom coding procedures. Relatively large percentage shares at the bottom are in many cases due to 0 values in the raw data, which are also raised to the bottom coded value. This affects the 1 % of the median and the extreme values approach equally. After disregarding 0 values, only 15 datasets out of the 407 datasets in the LIS Database show percentage shares larger than 1 % when treated with the extreme values approach; 10 of these datasets show more than 1 % sample cases when treated with the 1 % of the mean bottom coding. At the top, treatment to top coding at the extreme values exceeds 0.1 % of sample cases in only 7 datasets, whereas the 10 times the median approach exceeds 1 % of the sample in 20 datasets.

Conclusion

After looking in depth at these figures we reinstated the necessity for applying top and bottom coding procedures for the LIS Key Figures and DART.[4] This decision is motivated mostly in the context of cross-national comparisons, where we aim to preserve a ranked order of inequality between countries. Among the tested approaches we concluded that it is best to adopt the interquartile range as the new technique to first detect extreme values and then to apply the lower and upper boundary as a bottom and top code. The new measure affects income inequality measures much less, as compared to the previous approach, but still smoothens inequality trends within and between countries by consistently reducing the influence of extreme values in the income distributions for inequality measures.

In line with LIS' tradition of keeping the micro data as 'original' as possible we decided against implementing a technique to correct for these values in the micro data at this stage. At the same time, LIS cannot ask its data providers to systematically check these values. We therefore take a consistent approach to set these values to the lower and upper limit of the boundary. We emphasise at the same time that LIS keeps the reported values in the microdata and, as has always been its custom, leaves it up to the users to treat extreme values in the data.

LIS encourages its users to apply alternative procedures to better treat measurement error in the tails of the distributions with survey data. Such measures are, for example, re-weighting observations (e.g. Hlasny and Verme, 2018), semi-parametric approaches (e.g. Pareto distribution modelling for parametric tail (Cowell and Flachaire, 2007; Van Kerm, 2007)), or linking tax data to survey data as proposed by Blanchet *et al*. (2018).

[4] At this stage the method is limited to income measures. A similar practice cannot be applied for net worth as this latter contains a large share of negative values which affects the calculation of a robust interquartile range.

References:

Atkinson, A.B. (1970), On the measurement of inequality, *Journal of Economic Theory*, Vol. 2, No. 3, pp. 244-263 , https://doi.org/10.1016/0022-0531(70)90039-6.

Atkinson, A. B., Lee Rainwater, L. and Smeeding, T. M. (1994), Income Distribution in European Countries, LIS working papers series, No. 121, available at http://www.lisdatacenter.org/wps/liswps/121.pdf, accessed: 3/2/2020.

Blanchet, T.; Flores I.; Morgan M. (2018), "The Weight of the Rich: Improving Surveys Using Tax Data", WID.world Working Paper 2018/12, available at https://wid.world/document/the-weight-of-the-rich-improving-surveys-using-tax-data-wid-world-working-paper-2018-12/, accessed: 4/2/2020.

Cowell, F. A. and Flachaire, E. (2007), Income distribution and inequality measurement: The problem of extreme values, *Journal of Econometrics*, Volume 141, Issue 2, December 2007, pp. 1044-1072. https://doi.org/10.1016/j.jeconom.2007.01.001

European Commission – Eurostat (2018), Working Group Labour Market Statistics, TF2: Income from main job (variable INCGROSS): Imputation bands, outlier detection, and dissemination plan, Luxembourg, June 13-14, available at https://circabc.europa.eu/webdav/CircaBC/ESTAT/labmarstatwg/Library/statistics_working/2018/1.%2013-14June%20(Section%20A_%20LFS)/2.%20Documents/Doc%2009%20Item%202.8%20Income%20from%20main%20job_INCGROSS.pdf, accessed: 2/2/2020.

Fritzell, J. (1992), Income Inequality Trends in the 1980's: A Five Country Comparison?, LIS working papers series, No. 73, available at http://www.lisdatacenter.org/wps/liswps/73.pdf, accessed: 3/2/2020.

Gottschalk, P. and Smeeding, T. M. (1996), The International Evidence on Income Distribution in Modern Economies: Where Do We Stand? LIS working papers series, No. 137, available at http://www.lisdatacenter.org/wps/liswps/137.pdf, accessed: 3/2/2020.

Gottschalk, P. and Smeeding, T. M. (1997), Cross National Comparisons of Levels and Trends in Inequality, LIS working papers series, No. 126, available at http://www.lisdatacenter.org/wps/liswps/126.pdf, accessed: 3/2/2020.

Gottschalk, P. and Smeeding, T. M. (2000), *Empirical evidence on income inequality in industrialised countries*, in Atkinson, A.B. and Bourguignon, F. (eds.), *Handbook of Income Distribution*, vol. 1, Elsevier, pp. 261-307.

Hlasny, V.; Verme, P. (2018), Top Incomes and Inequality Measurement: A Comparative Analysis of Correction Methods Using the EU SILC Data, *Econometrics*, 6, 30.

Luxembourg Income Study (LIS) Database, http://www.lisdatacenter.org (multiple countries; July 15, 2020). Luxembourg: LIS.

Michael O'Higgins, M.; Schmaus, G. and Stephenson, G. (1985), Income Distribution and Redistribution, LIS working papers series, No. 3, available at http://www.lisdatacenter.org/wps/liswps/3.pdf, accessed: 3/2/2020.

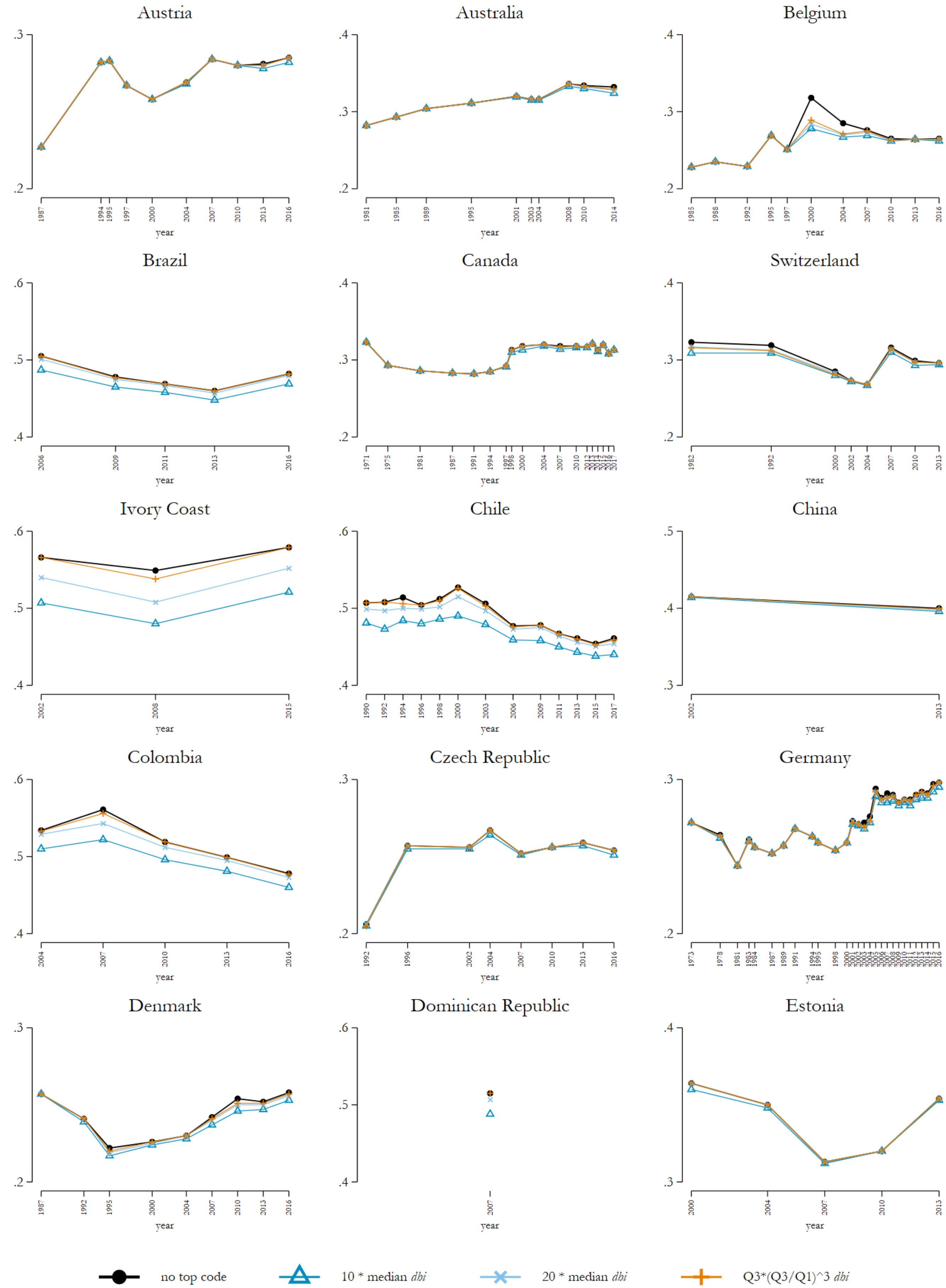
Smeeding, T. M. (1997), American Income Inequality in a Cross-National Perspective: Why Are We So Different?, LIS working papers series, No. 157, available at http://www.lisdatacenter.org/wps/liswps/157.pdf, accessed: 3/2/2020.

Van Kerm, P., (2007), "Extreme incomes and the estimation of poverty and inequality indicators from EU-SILC," IRISS Working Paper Series 2007-01, IRISS at CEPS/INSTEAD, available at: http://iriss.ceps.lu/documents/irisswp69.pdf, accessed: 4/2/2020.

Székely, M. and Hilgert, M. (1999), What's Behind the Inequality We Measure? An Investigation Using Latin American Data, LIS working papers series, No. 234, available at http://www.lisdatacenter.org/wps/liswps/234.pdf, accessed: 3/2/2020.

Smeeding, T. M.; Schmaus, G. and Allegrezza, S. (1985), An Introduction to LIS – The Luxembourg Income Study, LIS working papers series, No. 1, available at http://www.lisdatacenter.org/wps/liswps/1.pdf, accessed: 3/2/2020.

Appendix: Figure 2: Alternative top coding procedures – Gini Index disposable household income



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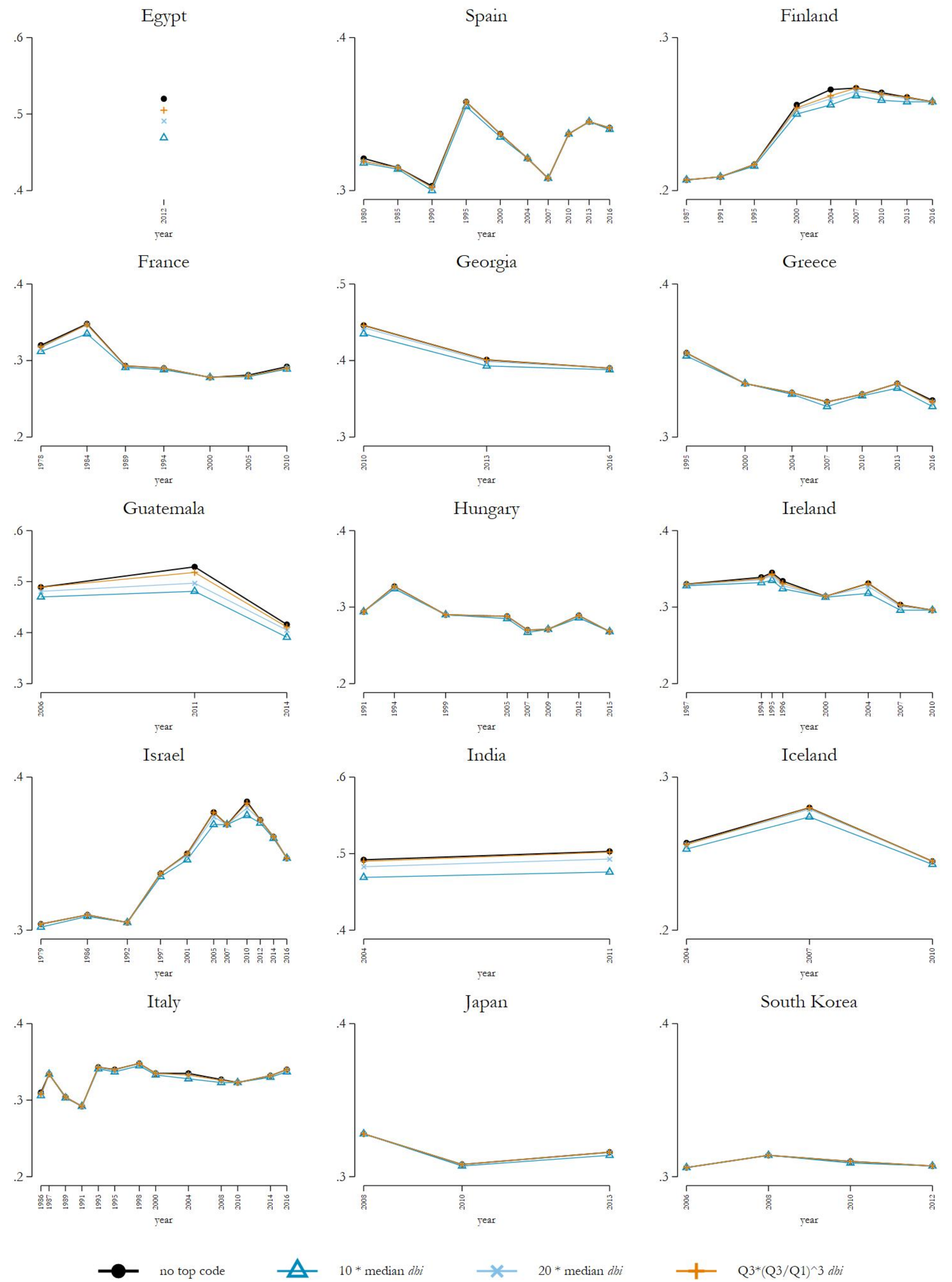

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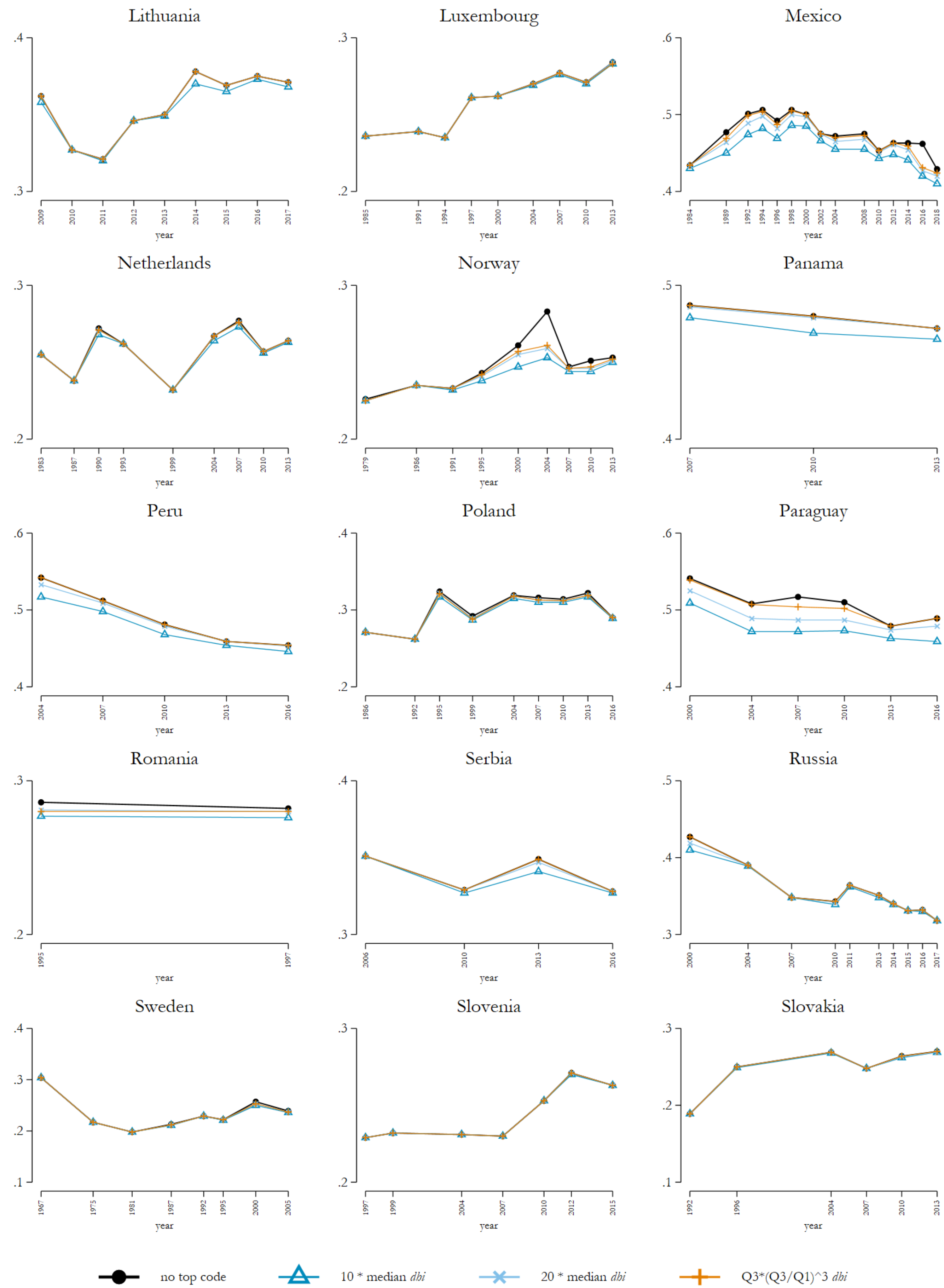

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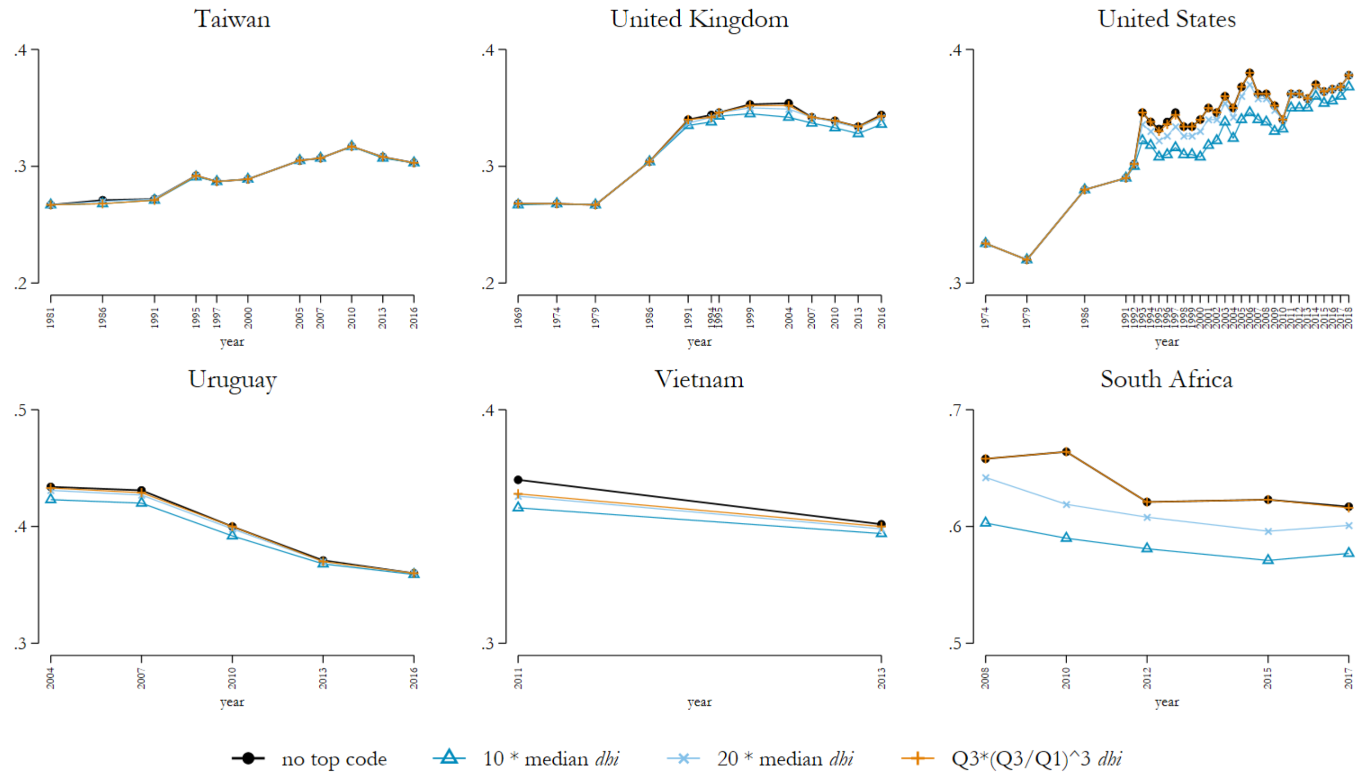
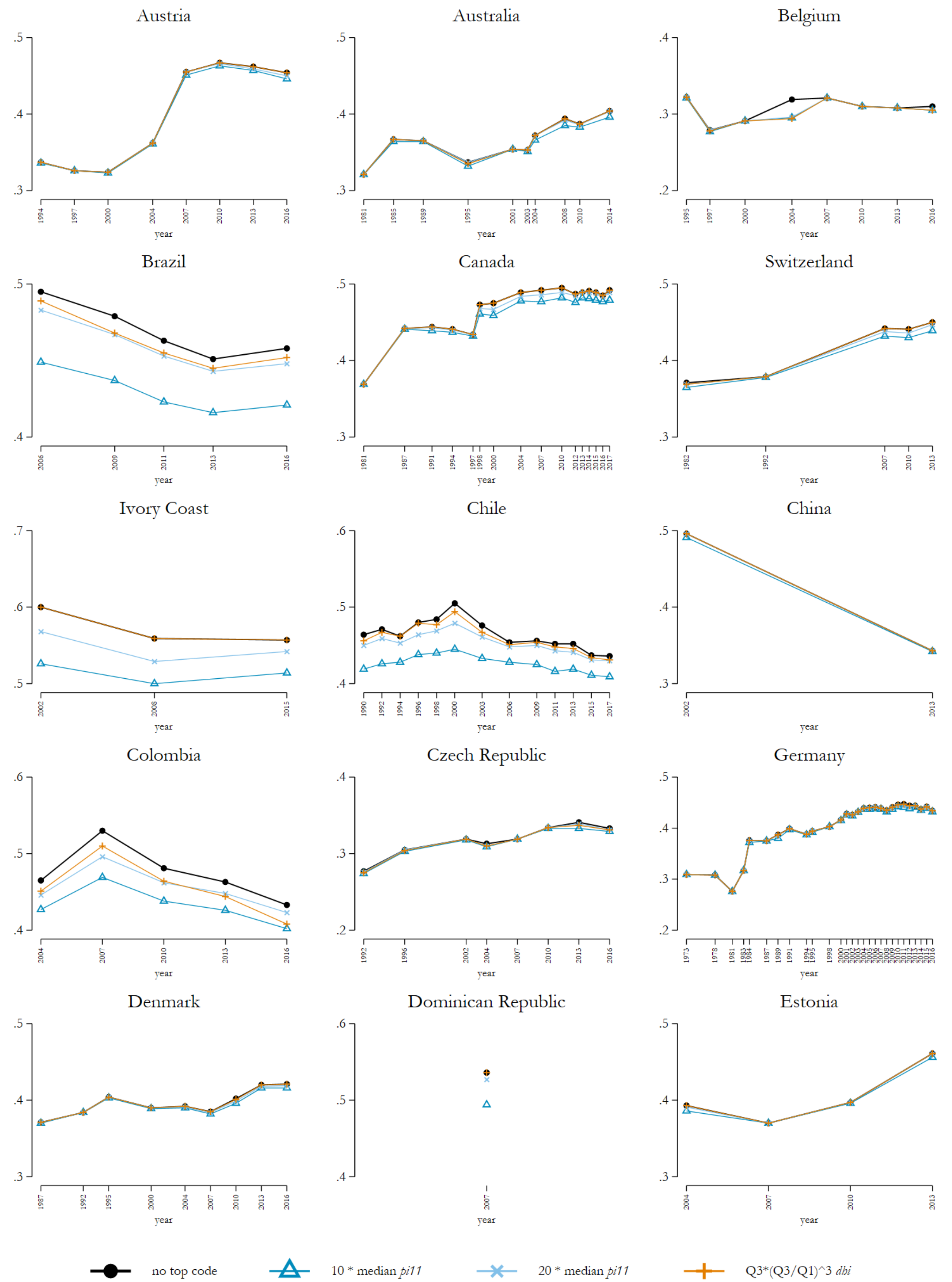


Appendix: Figure 3: Alternative top coding procedures – Gini Index wage income



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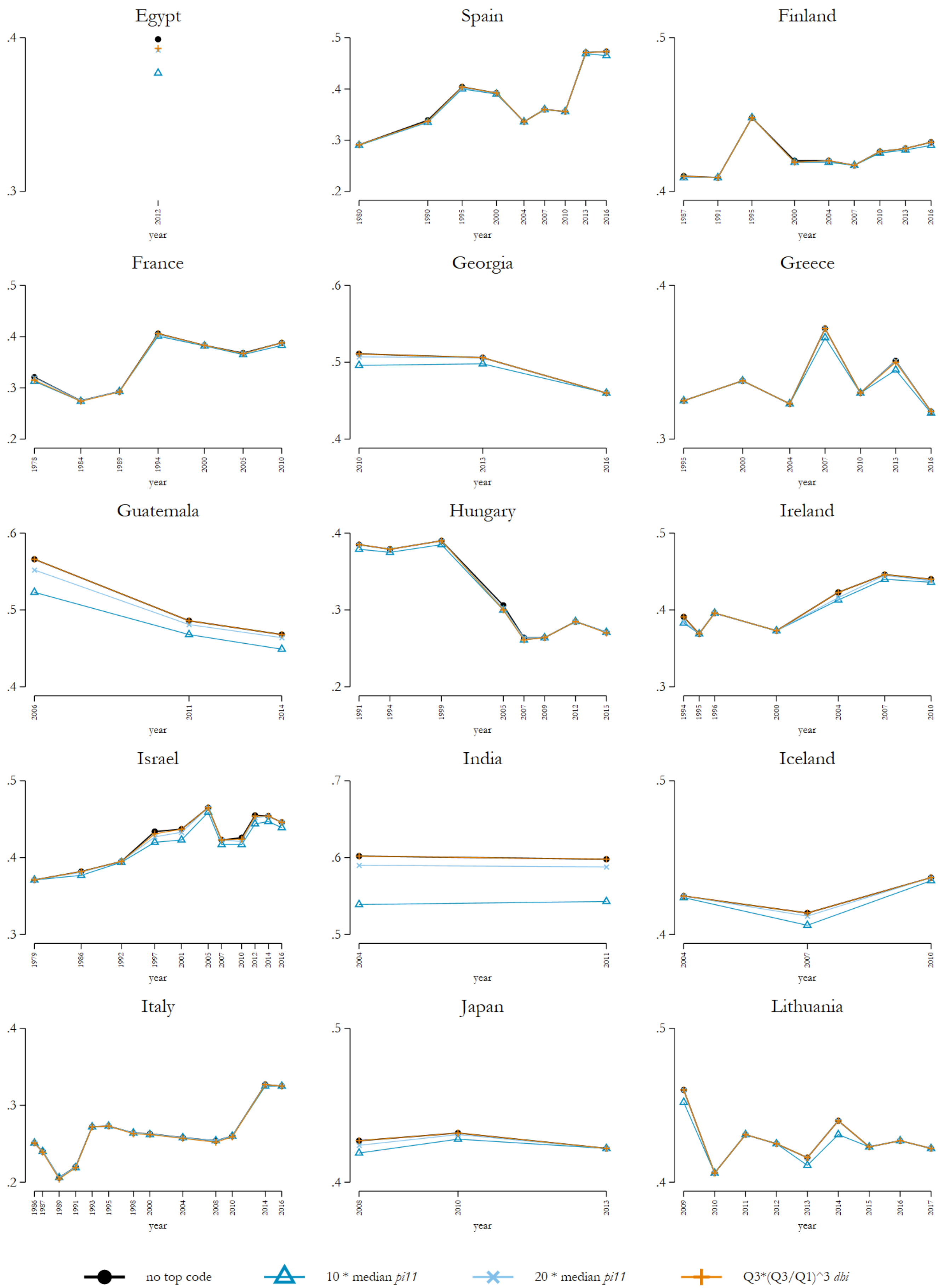

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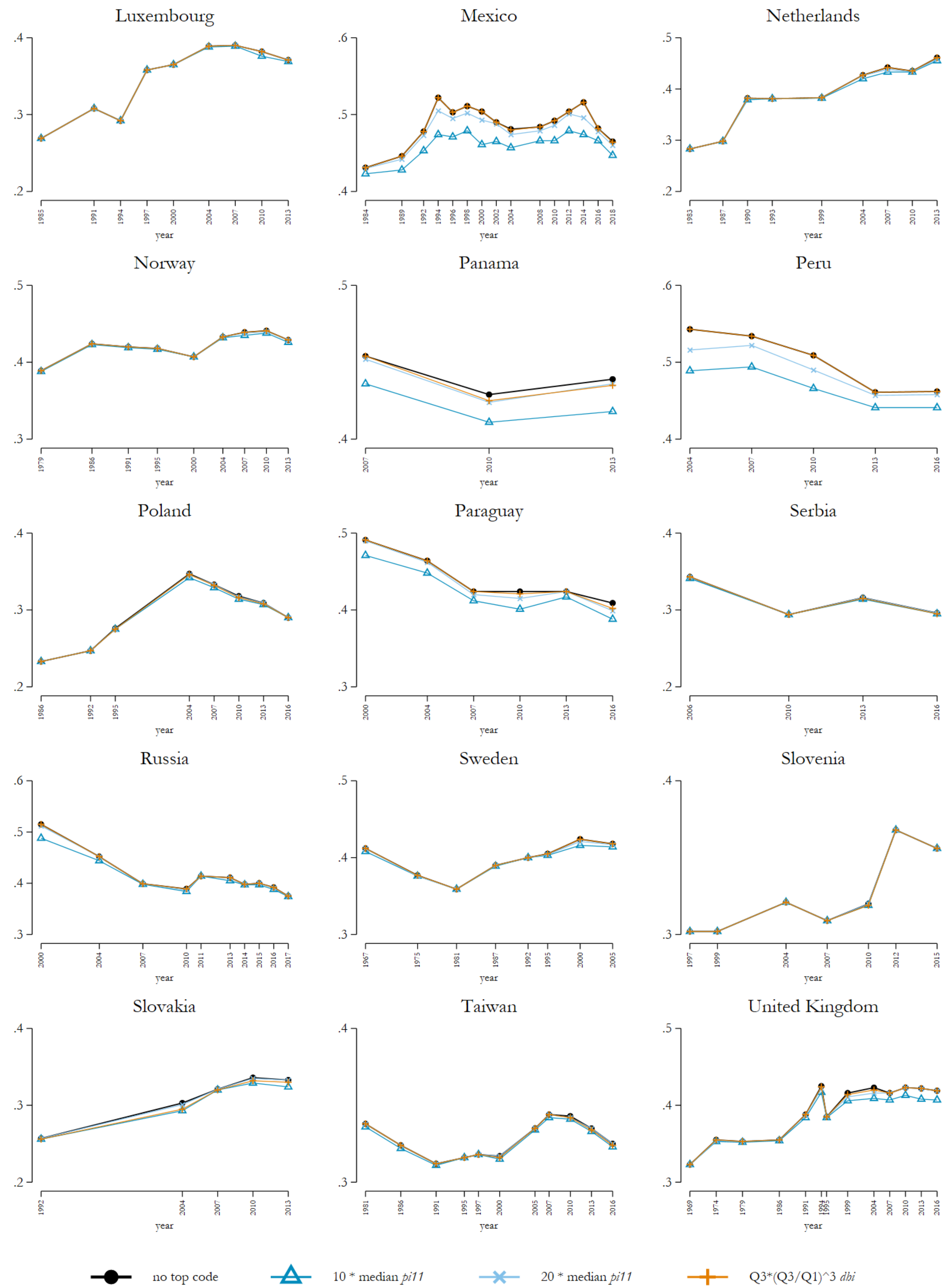

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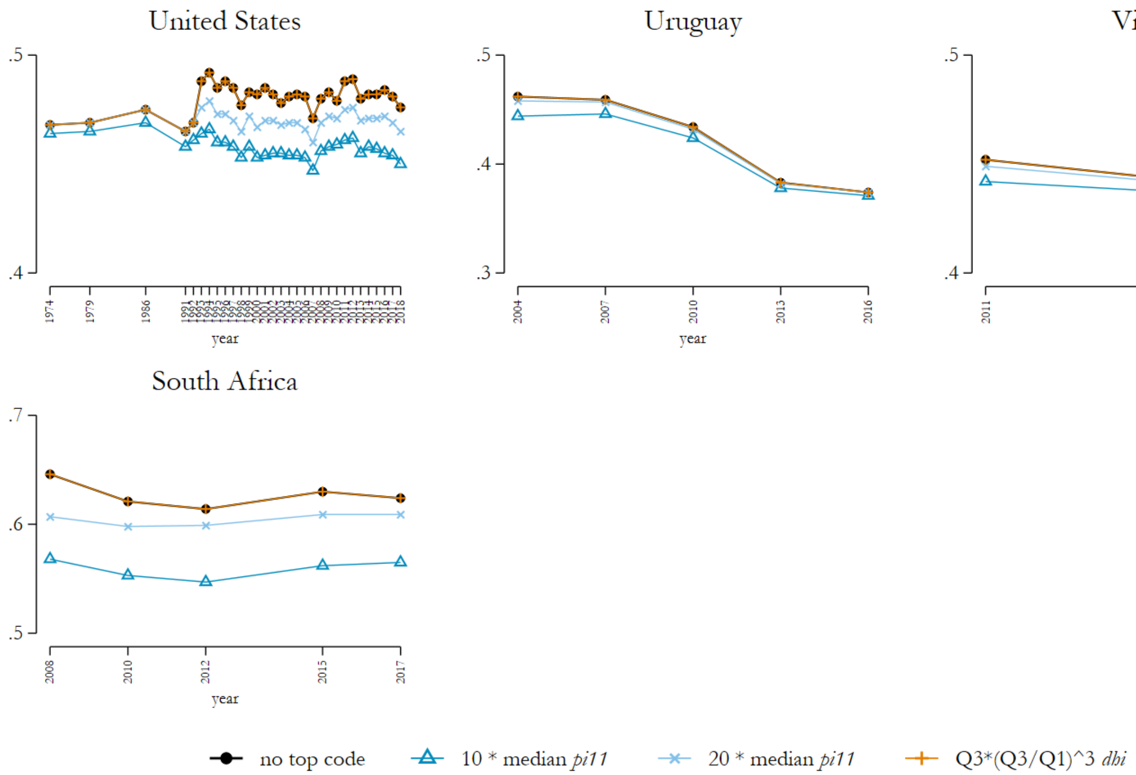

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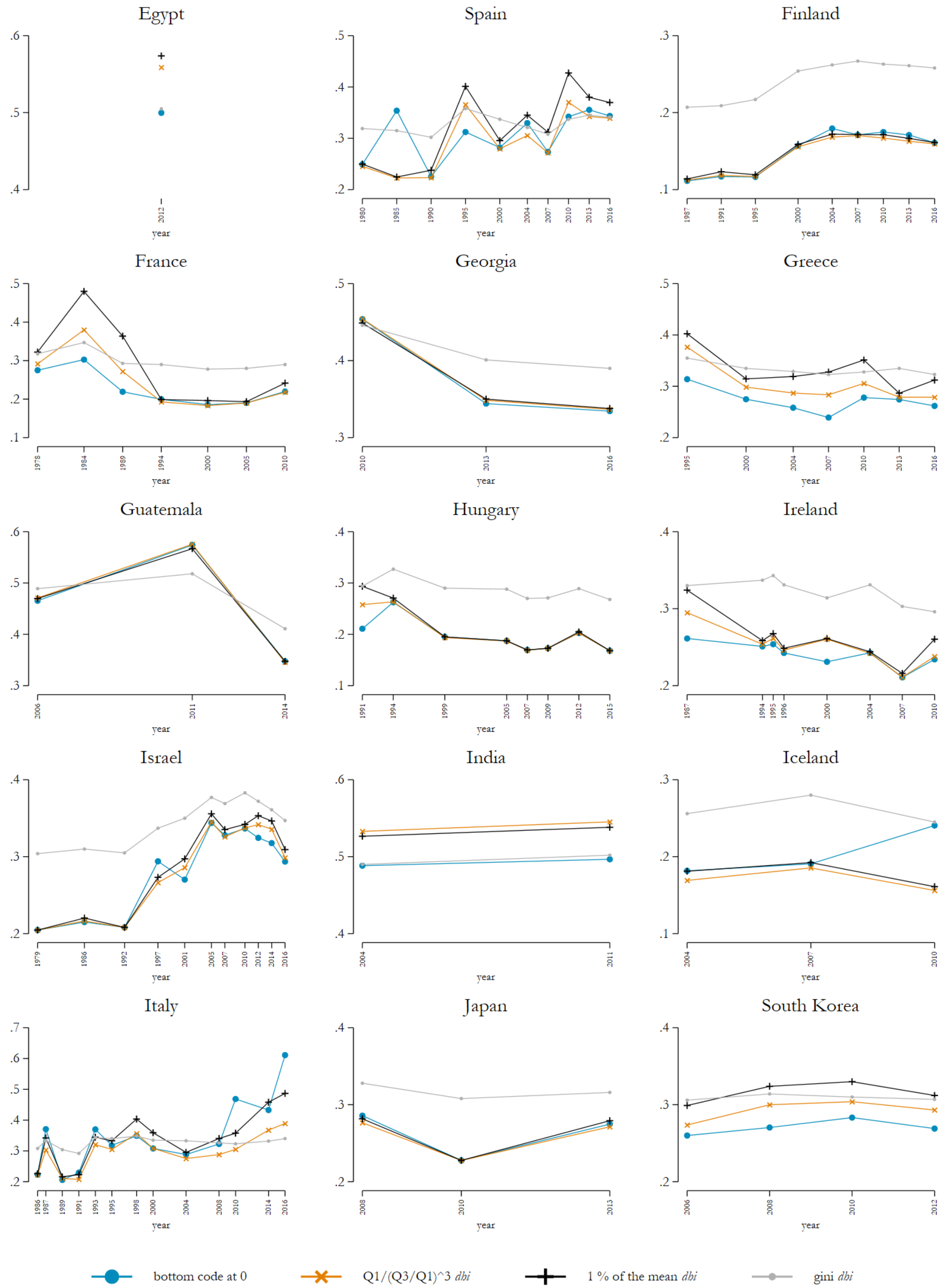

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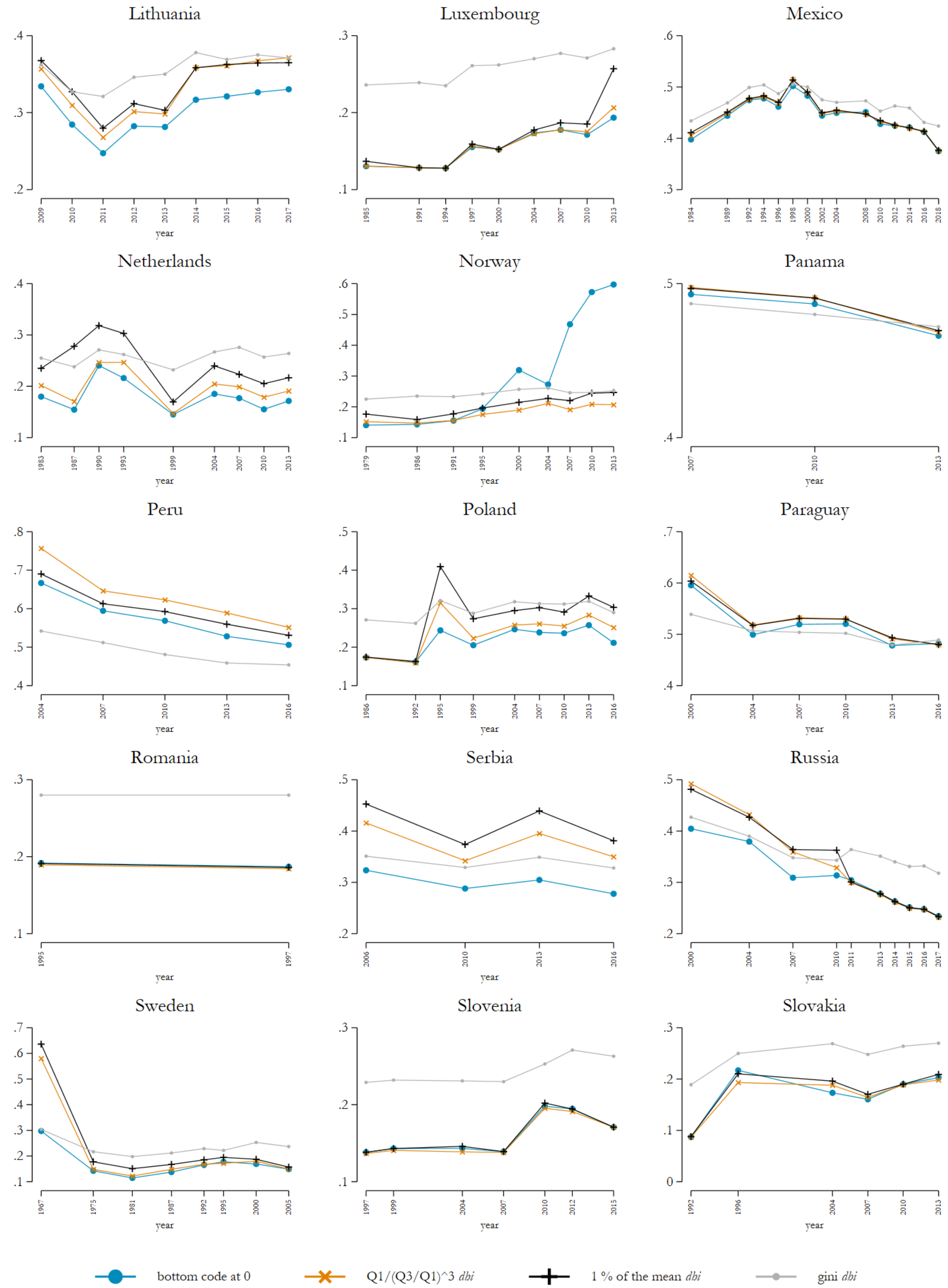

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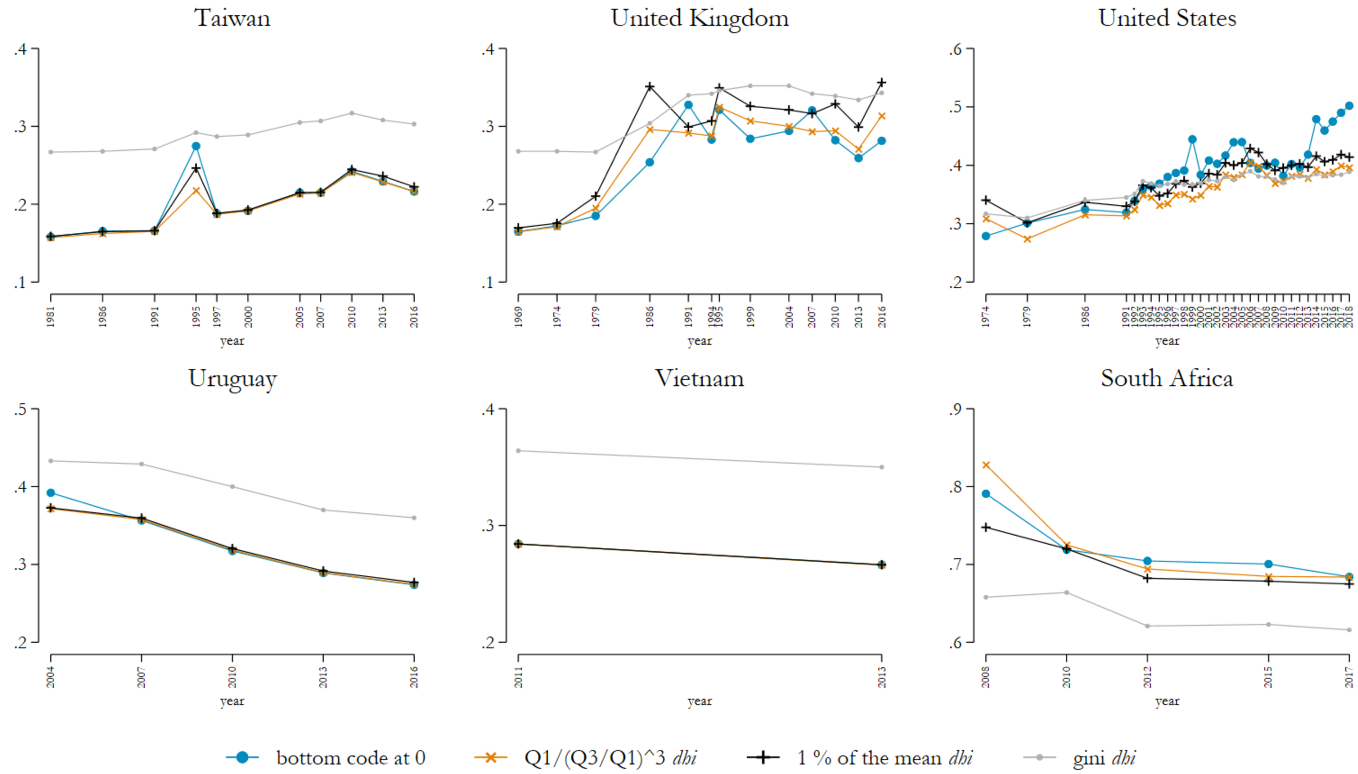

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

Country	year	number of treated cases 10 * median dhi	% of treated cases 10 * median dhi	number of treated cases Q3*(Q3/Q1)^3 dhi	% of treated cases Q3*(Q3/Q1)^3 dhi	number of treated cases 1 % mean eq. dhi	% of treated cases 1 % mean eq. dhi	number of treated cases Q1/(Q3/Q1)^3 dhi	% of treated cases Q1/(Q3/Q1)^3 dhi	number of 0 values in dhi (at individual level)	% of 0 values in dhi (at individual level)
Australia	1981	0	0	0	0	76	0.18	204	0.48	64	0.15
Australia	1985	6	0.03	0	0	46	0.22	83	0.41	37	0.18
Australia	1989	20	0.05	0	0	101	0.26	149	0.38	76	0.19
Australia	1995	11	0.06	0	0	189	1.05	212	1.18	71	0.4
Australia	2001	6	0.04	0	0	183	1.08	203	1.2	75	0.44
Australia	2003	25	0.1	0	0	247	1	288	1.17	114	0.46
Australia	2004	28	0.1	0	0	154	0.54	194	0.68	55	0.19
Australia	2008	47	0.2	0	0	104	0.45	134	0.58	58	0.25
Australia	2010	57	0.14	5	0.01	207	0.49	284	0.67	64	0.15
Australia	2014	53	0.16	4	0.01	181	0.54	225	0.67	55	0.16
Austria	1987	0	0	0	0	0	0	3	0.01	0	0
Austria	1994	0	0	0	0	29	0.36	36	0.45	12	0.15
Austria	1995	0	0	0	0	339	0.7	368	0.76	339	0.7
Austria	1997	0	0	0	0	13	0.18	23	0.31	10	0.14
Austria	2000	3	0.05	0	0	15	0.24	19	0.31	9	0.15
Austria	2004	4	0.03	0	0	12	0.09	17	0.13	0	0
Austria	2007	7	0.05	0	0	25	0.18	48	0.35	3	0.02
Austria	2010	2	0.01	0	0	32	0.23	61	0.44	5	0.04
Austria	2013	10	0.08	2	0.01	20	0.15	39	0.3	3	0.02
Austria	2016	13	0.1	0	0	29	0.23	46	0.36	12	0.09
Belgium	1985	0	0	0	0	34	0.19	63	0.34	30	0.16
Belgium	1988	7	0.06	0	0	50	0.45	64	0.57	43	0.39
Belgium	1992	0	0	0	0	69	0.64	72	0.67	67	0.62
Belgium	1995	0	0	0	0	16	0.24	23	0.35	16	0.24
Belgium	1997	0	0	0	0	28	0.23	48	0.39	17	0.14
Belgium	2000	10	0.2	2	0.04	13	0.25	13	0.25	11	0.22
Belgium	2004	13	0.11	1	0.01	8	0.07	11	0.09	1	0.01
Belgium	2007	38	0.25	6	0.04	33	0.22	40	0.26	4	0.03
Belgium	2010	1	0.01	1	0.01	29	0.2	36	0.25	11	0.08
Belgium	2013	6	0.04	0	0	20	0.14	22	0.15	6	0.04
Belgium	2016	6	0.04	4	0.03	49	0.35	55	0.39	9	0.06
Brazil	2006	4601	1.15	11	0	2123	0.53	2240	0.56	2106	0.53
Brazil	2009	3554	0.92	31	0.01	0	0	3	0	0	0
Brazil	2011	2887	0.85	17	0	1	0	1	0	0	0
Brazil	2013	2624	0.77	28	0.01	2	0	3	0	0	0
Brazil	2016	2541	0.57	2	0	11902	2.66	12166	2.72	10019	2.24
Canada	1971	10	0.01	0	0	852	1.09	919	1.17	645	0.82
Canada	1975	0	0	0	0	538	0.68	638	0.81	374	0.47
Canada	1981	0	0	0	0	185	0.44	244	0.58	91	0.22
Canada	1987	0	0	0	0	57	0.19	95	0.31	17	0.05
Canada	1991	9	0.02	0	0	148	0.28	191	0.36	58	0.11
Canada	1994	10	0.01	0	0	224	0.23	273	0.28	115	0.12
Canada	1997	18	0.02	3	0	170	0.2	308	0.36	14	0.02
Canada	1998	64	0.08	0	0	222	0.28	335	0.42	1	0
Canada	2000	56	0.08	0	0	201	0.28	320	0.44	0	0
Canada	2004	31	0.05	4	0.01	145	0.21	216	0.31	1	0
Canada	2007	64	0.1	16	0.03	83	0.13	137	0.21	0	0
Canada	2010	66	0.11	0	0	76	0.13	170	0.28	0	0
Canada	2012	44	0.08	0	0	68	0.12	160	0.28	1	0

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

Canada	2013	10	0.02	0	0	55	0.1	174	0.32	0	0
Canada	2014	41	0.07	0	0	67	0.12	163	0.29	1	0
Canada	2015	50	0.08	0	0	60	0.1	184	0.31	3	0
Canada	2016	38	0.06	0	0	84	0.14	219	0.35	1	0
Canada	2017	30	0.03	0	0	135	0.15	335	0.37	0	0
Chile	1990	1203	1.15	2	0	825	0.79	832	0.8	813	0.78
Chile	1992	1818	1.27	0	0	876	0.61	911	0.64	850	0.6
Chile	1994	1531	0.86	14	0.01	1605	0.9	1658	0.93	1552	0.88
Chile	1996	969	0.72	0	0	617	0.46	678	0.51	510	0.38
Chile	1998	1405	0.75	43	0.02	1052	0.56	1120	0.6	965	0.51
Chile	2000	1373	0.54	14	0	1564	0.62	1922	0.76	1407	0.56
Chile	2003	1779	0.69	14	0	1485	0.58	1820	0.71	1333	0.52
Chile	2006	1337	0.5	25	0.01	1197	0.45	1412	0.53	1087	0.41
Chile	2009	936	0.38	5	0	1900	0.77	2082	0.84	1750	0.71
Chile	2011	1431	0.71	5	0	852	0.43	1018	0.51	747	0.37
Chile	2013	1435	0.66	18	0.01	790	0.36	979	0.45	682	0.31
Chile	2015	2210	0.83	23	0.01	754	0.28	907	0.34	656	0.25
Chile	2017	1922	0.89	25	0.01	809	0.37	968	0.45	714	0.33
China	2002	54	0.09	0	0	32	0.05	47	0.08	3	0
China	2013	61	0.1	10	0.02	298	0.49	377	0.62	15	0.02
Colombia	2004	538	1.53	3	0.01	619	1.76	624	1.77	619	1.76
Colombia	2007	12153	1.47	113	0.01	12683	1.53	12804	1.55	9217	1.11
Colombia	2010	8333	1.02	40	0	6012	0.74	6354	0.78	4539	0.56
Colombia	2013	6078	0.77	30	0	6945	0.88	7602	0.96	5395	0.68
Colombia	2016	5306	0.68	62	0.01	5875	0.75	6670	0.86	4363	0.56
Czech Republic	1992	20	0.05	13	0.03	3	0.01	7	0.02	0	0
Czech Republic	1996	28	0.04	1	0	24	0.03	39	0.05	15	0.02
Czech Republic	2002	12	0.06	0	0	3	0.02	3	0.02	3	0.02
Czech Republic	2004	13	0.13	0	0	0	0	1	0.01	0	0
Czech Republic	2007	14	0.05	0	0	3	0.01	7	0.03	2	0.01
Czech Republic	2010	2	0.01	0	0	2	0.01	4	0.02	2	0.01
Czech Republic	2013	16	0.09	0	0	0	0	0	0	0	0
Czech Republic	2016	15	0.08	3	0.02	0	0	1	0	0	0
Denmark	1987	17	0.07	0	0	212	0.83	225	0.88	85	0.33
Denmark	1992	18	0.07	0	0	189	0.73	208	0.81	77	0.3
Denmark	1995	80	0.05	30	0.02	294	0.17	330	0.19	80	0.05
Denmark	2000	82	0.05	6	0	319	0.18	350	0.2	71	0.04
Denmark	2004	105	0.06	6	0	445	0.25	494	0.28	115	0.06
Denmark	2007	208	0.12	30	0.02	829	0.46	898	0.5	243	0.14
Denmark	2010	217	0.12	27	0.01	913	0.51	1048	0.58	0	0
Denmark	2013	241	0.13	14	0.01	635	0.34	802	0.44	0	0
Denmark	2016	250	0.13	34	0.02	748	0.4	867	0.46	0	0
Dominican Republic	2007	245	0.79	5	0.02	139	0.45	151	0.49	113	0.37
Egypt	2012	617	1.26	60	0.12	725	1.48	760	1.55	591	1.2
Estonia	2000	52	0.3	0	0	95	0.55	95	0.55	12	0.07
Estonia	2004	4	0.03	0	0	41	0.35	41	0.35	22	0.19
Estonia	2007	3	0.02	0	0	14	0.11	15	0.12	6	0.05
Estonia	2010	0	0	0	0	10	0.08	11	0.08	9	0.07
Estonia	2013	9	0.06	0	0	63	0.43	63	0.43	27	0.18
Finland	1987	9	0.03	0	0	11	0.03	13	0.04	0	0
Finland	1991	0	0	0	0	30	0.09	38	0.12	1	0
Finland	1995	18	0.07	5	0.02	9	0.04	10	0.04	1	0
Finland	2000	85	0.31	4	0.01	11	0.04	13	0.05	2	0.01
Finland	2004	50	0.17	14	0.05	18	0.06	28	0.1	2	0.01
Finland	2007	41	0.16	5	0.02	7	0.03	14	0.05	1	0
Finland	2010	45	0.2	3	0.01	11	0.05	16	0.07	3	0.01
Finland	2013	50	0.18	3	0.01	10	0.04	15	0.05	6	0.02
Finland	2016	43	0.17	0	0	7	0.03	15	0.06	0	0

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

France	1978	73	0.23	10	0.03	176	0.55	247	0.78	70	0.22
France	1984	265	0.83	13	0.04	726	2.28	855	2.69	213	0.67
France	1989	8	0.03	2	0.01	335	1.43	361	1.54	131	0.56
France	1994	15	0.05	6	0.02	17	0.06	37	0.13	5	0.02
France	2000	10	0.04	0	0	45	0.17	48	0.19	5	0.02
France	2005	30	0.12	9	0.04	7	0.03	24	0.09	0	0
France	2010	44	0.11	2	0	497	1.21	1089	2.64	368	0.89
Georgia	2010	101	0.53	0	0	84	0.44	90	0.47	45	0.24
Georgia	2013	15	0.16	0	0	7	0.07	16	0.17	7	0.07
Georgia	2016	20	0.22	0	0	12	0.13	12	0.13	9	0.1
Germany	1973	23	0.02	0	0	204	0.15	347	0.26	72	0.05
Germany	1978	65	0.05	9	0.01	55	0.04	102	0.08	7	0
Germany	1981	0	0	0	0	0	0	6	0.08	0	0
Germany	1983	10	0.01	2	0	13	0.01	20	0.02	1	0
Germany	1984	1	0.01	0	0	41	0.28	59	0.4	9	0.06
Germany	1987	0	0	0	0	20	0.15	34	0.26	2	0.01
Germany	1989	6	0.05	0	0	24	0.19	32	0.26	9	0.07
Germany	1991	2	0.01	0	0	27	0.15	31	0.17	3	0.02
Germany	1994	8	0.05	0	0	26	0.15	40	0.22	8	0.05
Germany	1995	5	0.03	0	0	38	0.22	46	0.26	6	0.03
Germany	1998	3	0.02	0	0	16	0.09	29	0.16	0	0
Germany	2000	13	0.05	0	0	19	0.07	28	0.1	3	0.01
Germany	2001	54	0.18	15	0.05	34	0.11	45	0.15	5	0.02
Germany	2002	26	0.09	8	0.03	34	0.12	43	0.15	5	0.02
Germany	2003	34	0.12	9	0.03	29	0.1	37	0.13	3	0.01
Germany	2004	38	0.14	9	0.03	23	0.09	36	0.13	5	0.02
Germany	2005	51	0.18	11	0.04	30	0.1	36	0.13	7	0.02
Germany	2006	63	0.24	8	0.03	39	0.15	45	0.17	5	0.02
Germany	2007	53	0.21	14	0.06	30	0.12	41	0.16	2	0.01
Germany	2008	51	0.22	13	0.06	15	0.06	27	0.12	6	0.03
Germany	2009	45	0.12	1	0	33	0.09	43	0.11	6	0.02
Germany	2010	47	0.11	2	0	81	0.18	94	0.21	3	0.01
Germany	2011	62	0.15	6	0.01	54	0.13	67	0.16	5	0.01
Germany	2012	85	0.18	10	0.02	61	0.13	74	0.16	11	0.02
Germany	2013	75	0.18	8	0.02	43	0.1	49	0.12	7	0.02
Germany	2014	34	0.08	3	0.01	69	0.17	81	0.2	9	0.02
Germany	2015	69	0.19	3	0.01	53	0.14	60	0.16	9	0.02
Germany	2016	71	0.18	17	0.04	83	0.21	96	0.24	16	0.04
Greece	1995	4	0.03	0	0	160	1.13	166	1.17	101	0.71
Greece	2000	4	0.04	0	0	41	0.37	47	0.42	24	0.22
Greece	2004	15	0.1	0	0	85	0.57	101	0.68	35	0.23
Greece	2007	33	0.2	0	0	136	0.81	151	0.89	50	0.3
Greece	2010	8	0.05	0	0	126	0.84	152	1.01	64	0.43
Greece	2013	29	0.14	0	0	26	0.12	53	0.25	7	0.03
Greece	2016	64	0.12	2	0	308	0.58	425	0.8	206	0.38
Guatemala	2006	346	0.5	4	0.01	51	0.07	60	0.09	10	0.01
Guatemala	2011	404	0.61	11	0.02	552	0.84	578	0.88	348	0.53
Guatemala	2014	264	0.48	16	0.03	21	0.04	43	0.08	13	0.02
Hungary	1991	0	0	0	0	45	0.77	47	0.8	45	0.77
Hungary	1994	6	0.11	0	0	12	0.23	16	0.3	8	0.15
Hungary	1999	0	0	0	0	0	0	7	0.13	0	0
Hungary	2005	2	0.04	0	0	0	0	1	0.02	0	0
Hungary	2007	7	0.14	0	0	0	0	1	0.02	0	0
Hungary	2009	0	0	0	0	0	0	0	0	0	0
Hungary	2012	7	0.15	0	0	1	0.02	5	0.11	1	0.02
Hungary	2015	0	0	0	0	0	0	1	0.02	0	0
Iceland	2004	23	0.26	3	0.03	13	0.15	13	0.15	0	0
Iceland	2007	25	0.29	0	0	5	0.06	6	0.07	0	0

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

Iceland	2010	8	0.09	0	0	3	0.03	9	0.1	0	0
India	2004	3465	1.61	13	0.01	1937	0.9	2108	0.98	435	0.2
India	2011	4071	1.99	31	0.01	1742	0.85	1832	0.9	240	0.12
Ireland	1987	18	0.14	0	0	129	0.98	130	0.99	3	0.02
Ireland	1994	27	0.25	5	0.05	13	0.12	17	0.16	8	0.07
Ireland	1995	26	0.27	5	0.05	7	0.07	7	0.07	6	0.06
Ireland	1996	20	0.23	4	0.05	6	0.07	6	0.07	6	0.07
Ireland	2000	5	0.07	0	0	28	0.37	28	0.37	3	0.04
Ireland	2004	41	0.26	0	0	4	0.03	10	0.06	3	0.02
Ireland	2007	24	0.19	0	0	16	0.13	23	0.18	14	0.11
Ireland	2010	15	0.14	0	0	28	0.25	65	0.59	24	0.22
Israel	1979	4	0.05	0	0	0	0	0	0	0	0
Israel	1986	3	0.02	3	0.02	6	0.03	12	0.06	6	0.03
Israel	1992	8	0.04	0	0	0	0	2	0.01	0	0
Israel	1997	16	0.09	0	0	11	0.06	24	0.13	0	0
Israel	2001	34	0.17	4	0.02	46	0.24	50	0.26	0	0
Israel	2005	37	0.18	0	0	54	0.26	74	0.35	0	0
Israel	2007	5	0.03	0	0	50	0.25	54	0.27	0	0
Israel	2010	36	0.18	2	0.01	30	0.15	36	0.18	0	0
Israel	2012	35	0.12	0	0	80	0.28	88	0.31	0	0
Israel	2014	20	0.07	0	0	96	0.34	121	0.44	0	0
Israel	2016	0	0	0	0	58	0.19	67	0.22	0	0
Italy	1986	31	0.12	16	0.06	7	0.03	16	0.06	4	0.02
Italy	1987	32	0.13	0	0	111	0.44	220	0.88	65	0.26
Italy	1989	10	0.04	0	0	31	0.12	31	0.12	5	0.02
Italy	1991	10	0.04	0	0	56	0.22	61	0.25	44	0.18
Italy	1993	24	0.1	0	0	156	0.65	194	0.81	87	0.36
Italy	1995	35	0.15	0	0	125	0.52	166	0.69	52	0.22
Italy	1998	33	0.16	2	0.01	263	1.26	328	1.57	202	0.97
Italy	2000	19	0.09	5	0.02	251	1.13	294	1.32	213	0.96
Italy	2004	38	0.19	8	0.04	48	0.23	96	0.47	25	0.12
Italy	2008	27	0.14	6	0.03	145	0.73	177	0.89	105	0.53
Italy	2010	14	0.07	2	0.01	188	0.95	269	1.36	125	0.63
Italy	2014	18	0.09	0	0	393	2.03	463	2.39	310	1.6
Italy	2016	16	0.1	5	0.03	392	2.38	433	2.63	280	1.7
Ivory Coast	2002	1568	2.74	0	0	1637	2.87	1572	2.75	1518	2.66
Ivory Coast	2008	897	1.53	21	0.04	924	1.58	935	1.6	885	1.51
Ivory Coast	2015	1033	2.28	0	0	1728	3.81	1638	3.61	1566	3.45
Japan	2008	17	0.14	0	0	2	0.02	19	0.16	0	0
Japan	2010	14	0.17	0	0	0	0	1	0.01	0	0
Japan	2013	14	0.23	0	0	2	0.03	11	0.18	0	0
Lithuania	2009	29	0.22	0	0	52	0.4	59	0.45	46	0.35
Lithuania	2010	12	0.1	0	0	42	0.34	55	0.44	42	0.34
Lithuania	2011	7	0.06	0	0	36	0.29	39	0.31	32	0.25
Lithuania	2012	14	0.12	0	0	31	0.26	31	0.26	26	0.22
Lithuania	2013	8	0.07	0	0	22	0.19	23	0.19	21	0.18
Lithuania	2014	47	0.43	0	0	37	0.34	37	0.34	36	0.33
Lithuania	2015	32	0.29	0	0	45	0.41	45	0.41	43	0.4
Lithuania	2016	22	0.2	0	0	41	0.37	41	0.37	32	0.29
Lithuania	2017	19	0.17	0	0	38	0.34	37	0.33	33	0.3
Luxembourg	1985	0	0	0	0	2	0.03	4	0.07	2	0.03
Luxembourg	1991	3	0.05	0	0	0	0	1	0.02	0	0
Luxembourg	1994	0	0	0	0	0	0	0	0	0	0
Luxembourg	1997	0	0	0	0	2	0.03	2	0.03	2	0.03
Luxembourg	2000	0	0	0	0	0	0	0	0	0	0
Luxembourg	2004	4	0.04	0	0	10	0.1	28	0.29	0	0
Luxembourg	2007	13	0.13	6	0.06	10	0.1	19	0.19	0	0
Luxembourg	2010	17	0.12	4	0.03	29	0.19	44	0.3	0	0

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

Luxembourg	2013	13	0.13	4	0.04	56	0.56	64	0.64	0	0
Mexico	1984	129	0.54	0	0	64	0.27	83	0.35	55	0.23
Mexico	1989	387	0.68	8	0.01	105	0.18	114	0.2	101	0.18
Mexico	1992	307	0.61	3	0.01	84	0.17	104	0.2	75	0.15
Mexico	1994	456	0.76	4	0.01	84	0.14	103	0.17	75	0.13
Mexico	1996	425	0.66	14	0.02	113	0.17	143	0.22	108	0.17
Mexico	1998	330	0.69	6	0.01	138	0.29	160	0.33	126	0.26
Mexico	2000	243	0.57	0	0	67	0.16	68	0.16	63	0.15
Mexico	2002	294	0.41	0	0	72	0.1	79	0.11	69	0.09
Mexico	2004	794	0.87	8	0.01	120	0.13	145	0.16	106	0.12
Mexico	2008	968	0.81	20	0.02	25	0.02	26	0.02	20	0.02
Mexico	2010	471	0.44	0	0	119	0.11	144	0.13	100	0.09
Mexico	2012	142	0.42	0	0	12	0.04	15	0.05	11	0.03
Mexico	2014	354	0.48	10	0.01	21	0.03	34	0.05	14	0.02
Mexico	2016	878	0.34	66	0.03	59	0.02	86	0.03	58	0.02
Mexico	2018	897	0.33	92	0.03	77	0.03	103	0.04	73	0.03
Netherlands	1983	0	0	0	0	60	0.45	67	0.51	51	0.39
Netherlands	1987	0	0	0	0	105	0.98	108	1.01	20	0.19
Netherlands	1990	18	0.17	2	0.02	134	1.23	168	1.55	54	0.5
Netherlands	1993	0	0	0	0	110	0.84	152	1.17	75	0.58
Netherlands	1999	0	0	0	0	21	0.2	38	0.37	13	0.13
Netherlands	2004	9	0.04	0	0	61	0.26	79	0.33	0	0
Netherlands	2007	34	0.13	12	0.05	35	0.14	39	0.15	0	0
Netherlands	2010	20	0.08	2	0.01	48	0.19	51	0.2	0	0
Netherlands	2013	19	0.08	0	0	32	0.13	36	0.15	0	0
Norway	1979	398	1.54	141	0.55	252	0.98	290	1.13	24	0.09
Norway	1986	0	0	0	0	9	0.06	14	0.1	6	0.04
Norway	1991	24	0.1	3	0.01	18	0.07	30	0.12	14	0.06
Norway	1995	54	0.2	6	0.02	47	0.18	54	0.2	15	0.06
Norway	2000	195	0.56	41	0.12	103	0.3	113	0.32	16	0.05
Norway	2004	97	0.28	30	0.09	43	0.13	58	0.17	12	0.04
Norway	2007	486	0.1	25	0	2017	0.43	2433	0.52	840	0.18
Norway	2010	901	0.18	470	0.1	3650	0.75	4234	0.86	1192	0.24
Norway	2013	1337	0.26	474	0.09	3873	0.76	4563	0.9	1399	0.28
Palestine	2017	73	0.36	0	0	6	0.03	8	0.04	0	0
Panama	2007	275	0.56	0	0	24	0.05	27	0.05	24	0.05
Panama	2010	280	0.58	0	0	73	0.15	83	0.17	53	0.11
Panama	2013	141	0.32	0	0	46	0.1	56	0.13	35	0.08
Paraguay	2000	563	1.52	12	0.03	211	0.57	211	0.57	160	0.43
Paraguay	2004	314	0.91	8	0.02	159	0.46	165	0.48	133	0.39
Paraguay	2007	238	1.14	21	0.1	39	0.19	40	0.19	38	0.18
Paraguay	2010	248	1.22	13	0.06	49	0.24	52	0.26	46	0.23
Paraguay	2013	175	0.83	0	0	81	0.39	86	0.41	67	0.32
Paraguay	2016	362	0.96	0	0	11	0.03	15	0.04	0	0
Peru	2004	493	0.6	0	0	1515	1.83	1360	1.64	308	0.37
Peru	2007	595	0.65	0	0	931	1.01	830	0.9	223	0.24
Peru	2010	470	0.54	0	0	1251	1.45	1212	1.4	208	0.24
Peru	2013	418	0.36	0	0	1517	1.31	1468	1.26	327	0.28
Peru	2016	493	0.38	0	0	1158	0.9	1140	0.88	303	0.23
Poland	1986	11	0.03	0	0	3	0.01	3	0.01	3	0.01
Poland	1992	5	0.03	0	0	1	0	11	0.06	1	0
Poland	1995	190	0.18	62	0.06	1773	1.71	1915	1.85	64	0.06
Poland	1999	69	0.07	36	0.04	644	0.64	815	0.82	57	0.06
Poland	2004	164	0.17	30	0.03	581	0.59	685	0.69	113	0.11
Poland	2007	208	0.19	26	0.02	926	0.83	1086	0.97	96	0.09
Poland	2010	103	0.09	17	0.02	842	0.78	941	0.87	87	0.08
Poland	2013	151	0.15	26	0.03	1062	1.03	1258	1.22	211	0.2
Poland	2016	78	0.08	10	0.01	1076	1.08	1199	1.21	214	0.22

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

Romania	1995	107	0.12	55	0.06	5	0	43	0.05	0	0
Romania	1997	140	0.15	45	0.05	8	0.01	61	0.07	0	0
Russia	2000	50	0.58	0	0	100	1.17	106	1.24	82	0.96
Russia	2004	16	0.2	0	0	59	0.74	78	0.98	43	0.54
Russia	2007	0	0	0	0	54	0.63	58	0.67	50	0.58
Russia	2010	28	0.19	3	0.02	113	0.75	142	0.94	102	0.68
Russia	2011	6	0.02	0	0	11	0.04	28	0.11	0	0
Russia	2013	19	0.02	0	0	18	0.02	157	0.15	0	0
Russia	2014	9	0.01	0	0	16	0.01	101	0.1	0	0
Russia	2015	4	0	0	0	10	0.01	122	0.09	0	0
Russia	2016	14	0	0	0	24	0.01	415	0.11	0	0
Russia	2017	0	0	0	0	17	0.01	157	0.12	0	0
Serbia	2006	7	0.05	0	0	248	1.72	266	1.84	84	0.58
Serbia	2010	20	0.15	0	0	124	0.92	152	1.12	37	0.27
Serbia	2013	49	0.38	0	0	235	1.8	247	1.89	73	0.56
Serbia	2016	22	0.12	0	0	235	1.32	243	1.36	90	0.5
Slovakia	1992	8	0.02	5	0.01	2	0	21	0.04	2	0
Slovakia	1996	4	0.01	0	0	22	0.05	283	0.58	0	0
Slovakia	2004	17	0.11	0	0	29	0.19	30	0.19	0	0
Slovakia	2007	0	0	0	0	13	0.08	24	0.14	4	0.02
Slovakia	2010	15	0.1	1	0.01	0	0	12	0.08	0	0
Slovakia	2013	4	0.03	4	0.03	9	0.06	18	0.12	7	0.05
Slovenia	1997	0	0	0	0	0	0	6	0.07	0	0
Slovenia	1999	0	0	0	0	0	0	16	0.13	0	0
Slovenia	2004	0	0	0	0	2	0.02	11	0.1	1	0.01
Slovenia	2007	0	0	0	0	0	0	4	0.04	0	0
Slovenia	2010	0	0	0	0	1	0.01	12	0.1	1	0.01
Slovenia	2012	8	0.07	0	0	1	0.01	7	0.06	0	0
Slovenia	2015	4	0.04	0	0	0	0	0	0	0	0
South Africa	2008	812	2.88	0	0	435	1.54	346	1.23	293	1.04
South Africa	2010	459	1.56	0	0	27	0.09	15	0.05	15	0.05
South Africa	2012	476	1.44	0	0	66	0.2	38	0.12	2	0.01
South Africa	2015	367	0.97	0	0	68	0.18	29	0.08	2	0
South Africa	2017	752	1.83	3	0.01	74	0.18	27	0.07	8	0.02
South Korea	2006	8	0.02	0	0	418	0.93	501	1.12	40	0.09
South Korea	2008	6	0.01	0	0	452	1.16	509	1.31	21	0.05
South Korea	2010	18	0.05	0	0	240	0.63	297	0.79	36	0.09
South Korea	2012	12	0.03	0	0	216	0.6	244	0.68	22	0.06
Spain	1980	46	0.05	3	0	39	0.04	92	0.1	34	0.04
Spain	1985	6	0.05	0	0	2	0.02	4	0.03	0	0
Spain	1990	23	0.03	2	0	138	0.19	221	0.31	101	0.14
Spain	1995	22	0.12	0	0	183	1	231	1.26	65	0.35
Spain	2000	21	0.15	0	0	41	0.3	52	0.38	4	0.03
Spain	2004	14	0.04	0	0	393	1.05	475	1.27	324	0.87
Spain	2007	0	0	0	0	258	0.72	349	0.97	67	0.19
Spain	2010	0	0	0	0	485	1.39	603	1.74	169	0.49
Spain	2013	9	0.03	0	0	218	0.69	259	0.82	80	0.25
Spain	2016	21	0.06	0	0	168	0.48	242	0.69	81	0.23
Sweden	1967	6	0.04	0	0	602	4.05	612	4.12	575	3.87
Sweden	1975	2	0.01	0	0	90	0.31	108	0.37	9	0.03
Sweden	1981	0	0	0	0	112	0.46	152	0.62	40	0.16
Sweden	1987	5	0.02	2	0.01	83	0.38	92	0.43	1	0
Sweden	1992	5	0.02	0	0	111	0.39	134	0.47	1	0
Sweden	1995	26	0.08	0	0	86	0.25	156	0.46	4	0.01
Sweden	2000	62	0.19	4	0.01	55	0.17	60	0.18	0	0
Sweden	2005	57	0.15	16	0.04	36	0.1	41	0.11	0	0
Switzerland	1982	77	0.47	24	0.15	244	1.5	260	1.59	217	1.33
Switzerland	1992	19	0.11	17	0.1	470	2.8	521	3.1	39	0.23

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

Switzerland	2000	6	0.06	6	0.06	25	0.27	35	0.38	0	0
Switzerland	2002	9	0.1	5	0.05	27	0.29	37	0.4	0	0
Switzerland	2004	2	0.03	0	0	60	0.75	71	0.89	0	0
Switzerland	2007	42	0.26	12	0.07	91	0.56	118	0.72	0	0
Switzerland	2010	31	0.18	5	0.03	24	0.14	35	0.2	0	0
Switzerland	2013	13	0.08	0	0	15	0.1	22	0.14	0	0
Taiwan	1981	3	0	14	0.02	3	0	37	0.05	3	0
Taiwan	1986	31	0.04	31	0.04	0	0	56	0.08	0	0
Taiwan	1991	17	0.03	7	0.01	0	0	26	0.04	0	0
Taiwan	1995	18	0.03	5	0.01	115	0.2	404	0.7	35	0.06
Taiwan	1997	16	0.03	0	0	1	0	28	0.05	0	0
Taiwan	2000	14	0.03	0	0	4	0.01	15	0.03	0	0
Taiwan	2005	27	0.06	0	0	9	0.02	19	0.04	0	0
Taiwan	2007	17	0.04	0	0	2	0	13	0.03	0	0
Taiwan	2010	21	0.04	0	0	32	0.07	51	0.11	0	0
Taiwan	2013	20	0.04	0	0	44	0.09	94	0.19	0	0
Taiwan	2016	26	0.05	0	0	33	0.06	66	0.13	0	0
United Kingdom	1969	5	0.02	3	0.01	12	0.05	21	0.09	8	0.03
United Kingdom	1974	4	0.02	0	0	11	0.06	12	0.06	1	0
United Kingdom	1979	0	0	0	0	50	0.27	62	0.34	1	0
United Kingdom	1986	3	0.02	0	0	233	1.27	254	1.39	10	0.05
United Kingdom	1991	22	0.13	0	0	68	0.4	69	0.4	0	0
United Kingdom	1994	149	0.24	6	0.01	308	0.49	347	0.55	17	0.03
United Kingdom	1995	29	0.17	0	0	115	0.69	129	0.78	6	0.04
United Kingdom	1999	136	0.23	6	0.01	336	0.57	355	0.6	16	0.03
United Kingdom	2004	193	0.3	27	0.04	319	0.5	358	0.56	36	0.06
United Kingdom	2007	169	0.3	1	0	248	0.44	306	0.54	46	0.08
United Kingdom	2010	225	0.39	4	0.01	309	0.53	379	0.65	88	0.15
United Kingdom	2013	162	0.35	0	0	189	0.41	218	0.47	54	0.12
United Kingdom	2016	186	0.42	10	0.02	346	0.78	394	0.89	77	0.17
United States	1974	6	0.02	0	0	256	0.75	304	0.89	79	0.23
United States	1979	33	0.02	0	0	900	0.5	1287	0.71	275	0.15
United States	1986	28	0.02	0	0	798	0.51	1010	0.65	297	0.19
United States	1991	59	0.04	0	0	588	0.38	782	0.5	245	0.16
United States	1992	42	0.03	0	0	558	0.36	777	0.5	229	0.15
United States	1993	377	0.25	12	0.01	692	0.46	917	0.61	276	0.18
United States	1994	404	0.27	8	0	698	0.47	921	0.62	325	0.22
United States	1995	339	0.26	25	0.02	474	0.36	688	0.53	315	0.24
United States	1996	334	0.25	13	0.01	541	0.41	738	0.56	382	0.29
United States	1997	414	0.31	12	0.01	694	0.53	894	0.68	398	0.3
United States	1998	406	0.31	6	0	740	0.56	982	0.75	397	0.3
United States	1999	359	0.27	7	0	641	0.48	850	0.64	330	0.25
United States	2000	773	0.35	14	0.01	1097	0.5	1442	0.66	607	0.28
United States	2001	819	0.38	7	0	1253	0.58	1572	0.73	694	0.32
United States	2002	754	0.35	4	0	1202	0.56	1497	0.69	679	0.31
United States	2003	754	0.35	4	0	1304	0.61	1646	0.77	778	0.37
United States	2004	667	0.32	0	0	1408	0.67	1699	0.81	821	0.39
United States	2005	859	0.41	7	0	1286	0.62	1629	0.78	765	0.37
United States	2006	882	0.43	11	0	1852	0.9	2109	1.02	877	0.43
United States	2007	699	0.34	4	0	1856	0.9	2081	1.01	858	0.42
United States	2008	802	0.39	8	0	1336	0.64	1573	0.76	876	0.42
United States	2009	789	0.38	2	0	1302	0.62	1645	0.79	808	0.39
United States	2010	426	0.21	0	0	1379	0.68	1655	0.81	961	0.47
United States	2011	629	0.31	0	0	1196	0.6	1384	0.69	839	0.42
United States	2012	682	0.34	0	0	1231	0.61	1498	0.74	876	0.43
United States	2013	378	0.27	0	0	871	0.63	1008	0.73	630	0.45
United States	2014	642	0.32	0	0	1522	0.77	1865	0.94	959	0.48
United States	2015	641	0.35	0	0	1306	0.71	1602	0.87	850	0.46

Appendix: Table 1: Treated cases for alternative top and bottom coding scenarios

United States	2016	738	0.4	0	0	1344	0.73	1670	0.9	873	0.47
United States	2017	583	0.32	0	0	1443	0.8	1697	0.94	905	0.5
United States	2018	724	0.4	0	0	1213	0.68	1450	0.81	804	0.45
Uruguay	2004	401	0.72	31	0.06	16	0.03	21	0.04	0	0
Uruguay	2007	802	0.58	24	0.02	65	0.05	73	0.05	62	0.05
Uruguay	2010	501	0.39	21	0.02	52	0.04	64	0.05	47	0.04
Uruguay	2013	208	0.17	2	0	52	0.04	64	0.05	46	0.04
Uruguay	2016	204	0.18	16	0.01	48	0.04	58	0.05	46	0.04
Vietnam	2011	82	0.22	11	0.03	0	0	1	0	0	0
Vietnam	2013	62	0.17	9	0.03	0	0	3	0.01	0	0