Wealth distributions in LWS countries

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Outline

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Introductory remarks

- Examine the distribution of wealth in selected LWS countries.
- Examine both relative and "absolute" levels of wealth.
- Focus on simple descriptives and various graphical devices.

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Data definitions

- Study net worth (`nw2`) and its main components (wealth and debt).
- Examine both all data in LWS data set and a "shaved" data set (the inner 98 percent of the marginal distribution of net worth).
- Use 2002 international dollars, as defined by natioan deflator and PPP for 2002 (in both cases for actual final consumption).
- Examine "equivalent" net worth: equivalised using the square root scale.

LWS datasets included

- Canada (1999)
- Germany (GSOEP 2002)
- Italy (SHIW 2002)
- Sweden (2002)
- United States (SCF 2001)

Outline

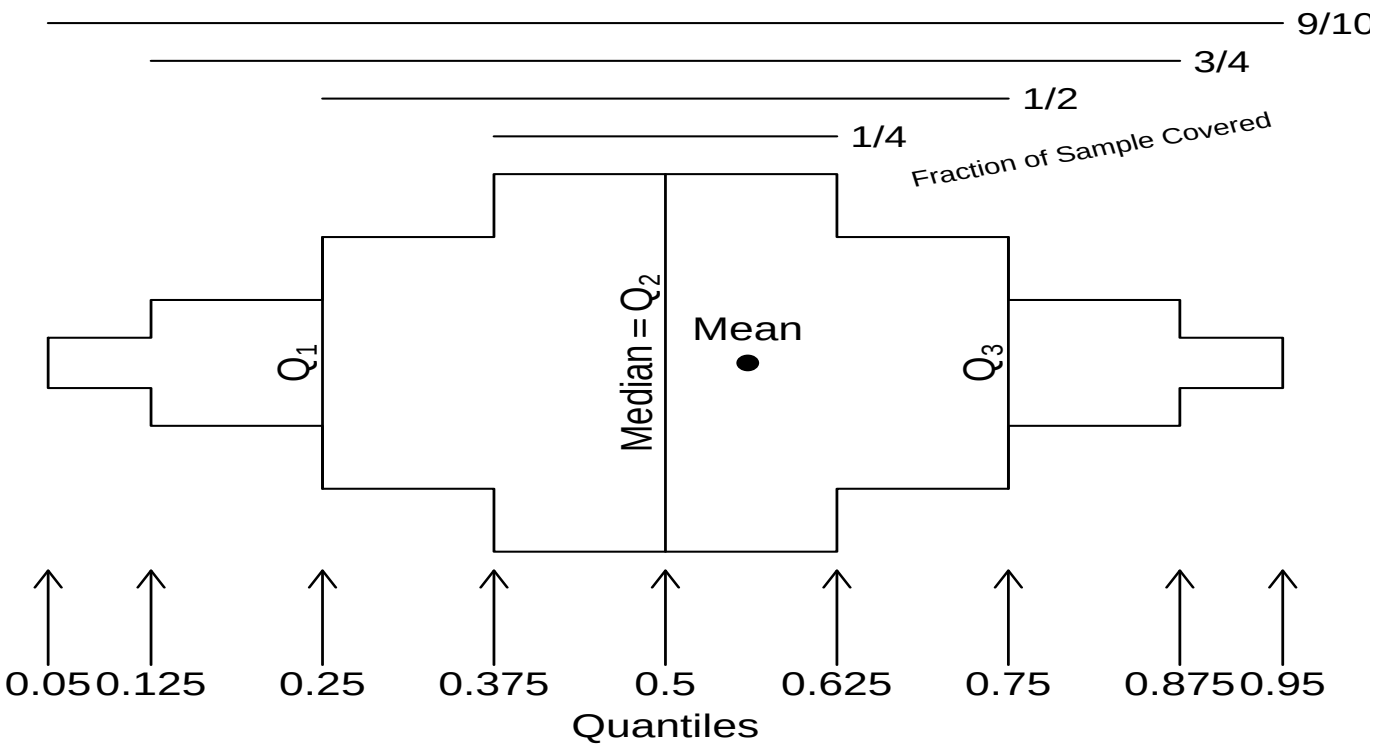
Proportions negative, zero, and positive: all data

	Canada	Germany	Italy	Sweden	United States
Net worth					
Negative	17.8	9.0	3.2	26.4	19.1
Zero	2.0	23.8	6.1	3.1	3.6
Positive	80.2	67.2	90.7	70.5	77.2
Wealth					
Zero	4.6	30.3	7.0	11.9	6.5
Positive	95.4	69.7	92.8	88.1	93.5
Debt					
Zero	24.9	58.9	77.0	20.6	18.6
Positive	75.1	41.1	23.0	79.4	81.4

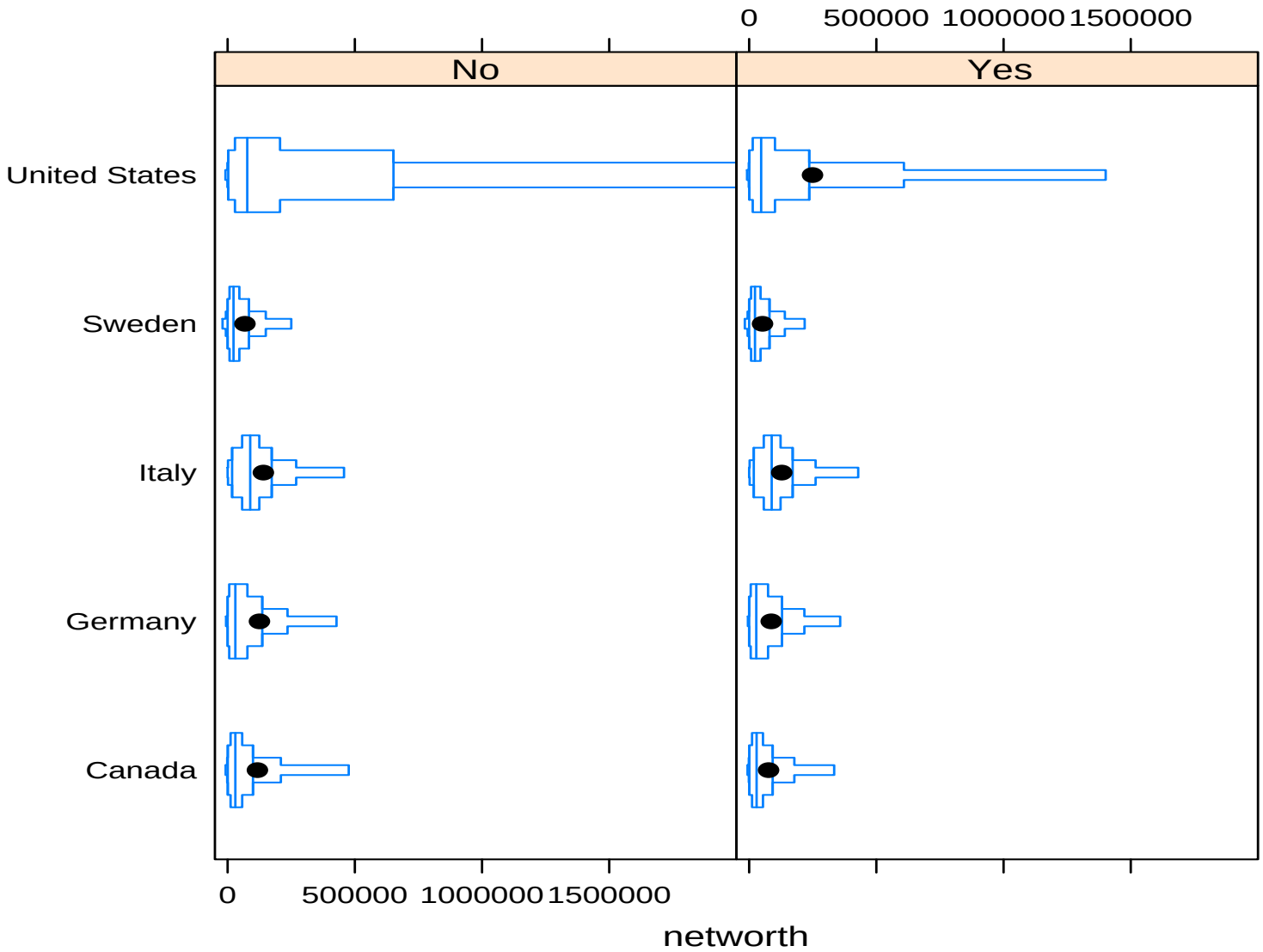
Proportions negative, zero, and positive: shaved data

	Canada	Germany	Italy	Sweden	United States
Net worth					
Negative	17.2	8.2	2.3	25.9	18.5
Zero	2.0	24.2	6.2	3.2	3.7
Positive	80.8	67.6	91.4	70.9	77.8
Wealth					
Zero	4.6	30.5	6.9	11.9	6.6
Positive	95.4	69.5	93.1	88.1	93.4
Debt					
Zero	25.0	59.7	77.6	20.9	18.7
Positive	75.0	40.3	22.4	79.1	81.3

Boxplots: example

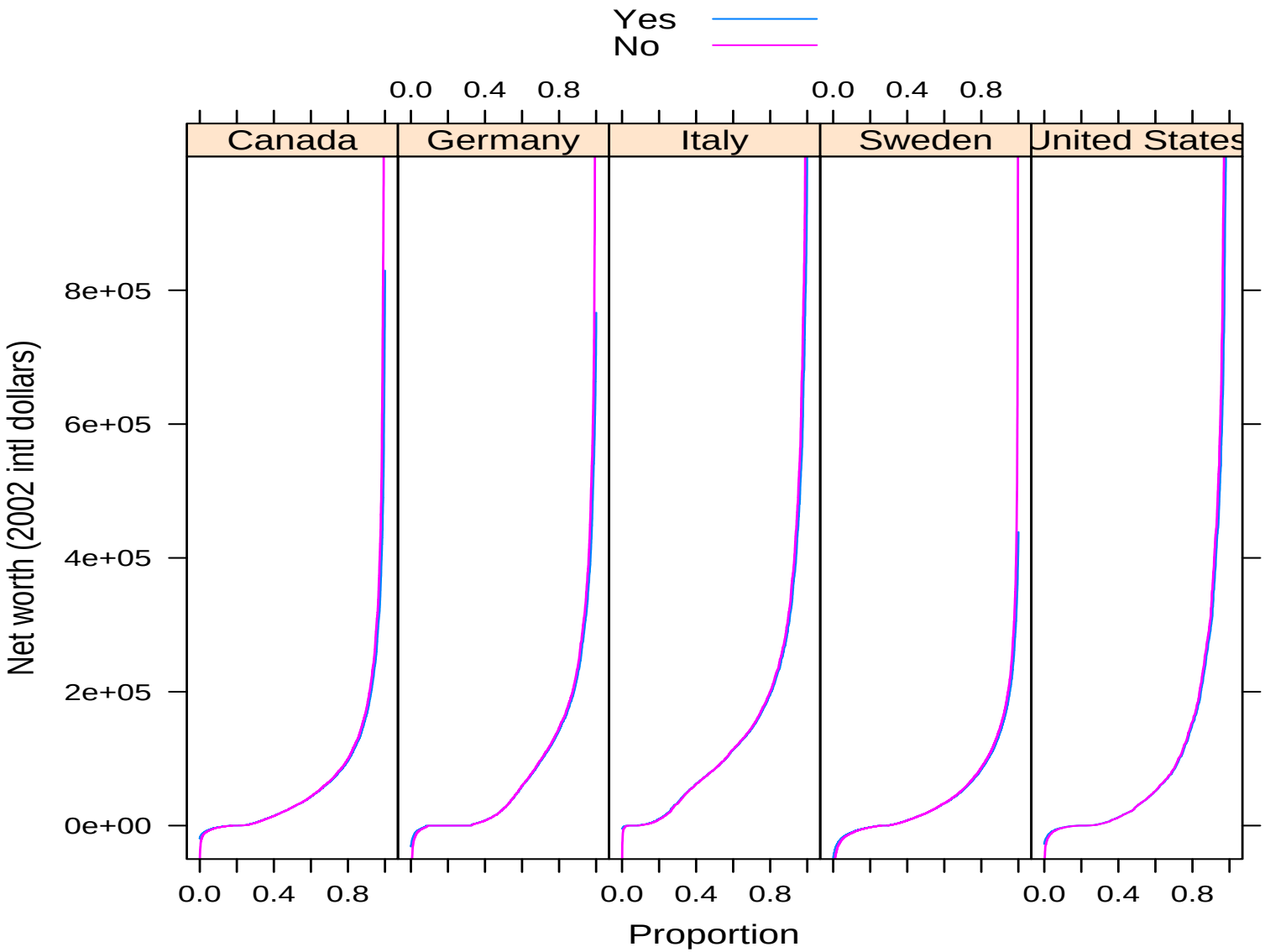


Boxplot: LWS data

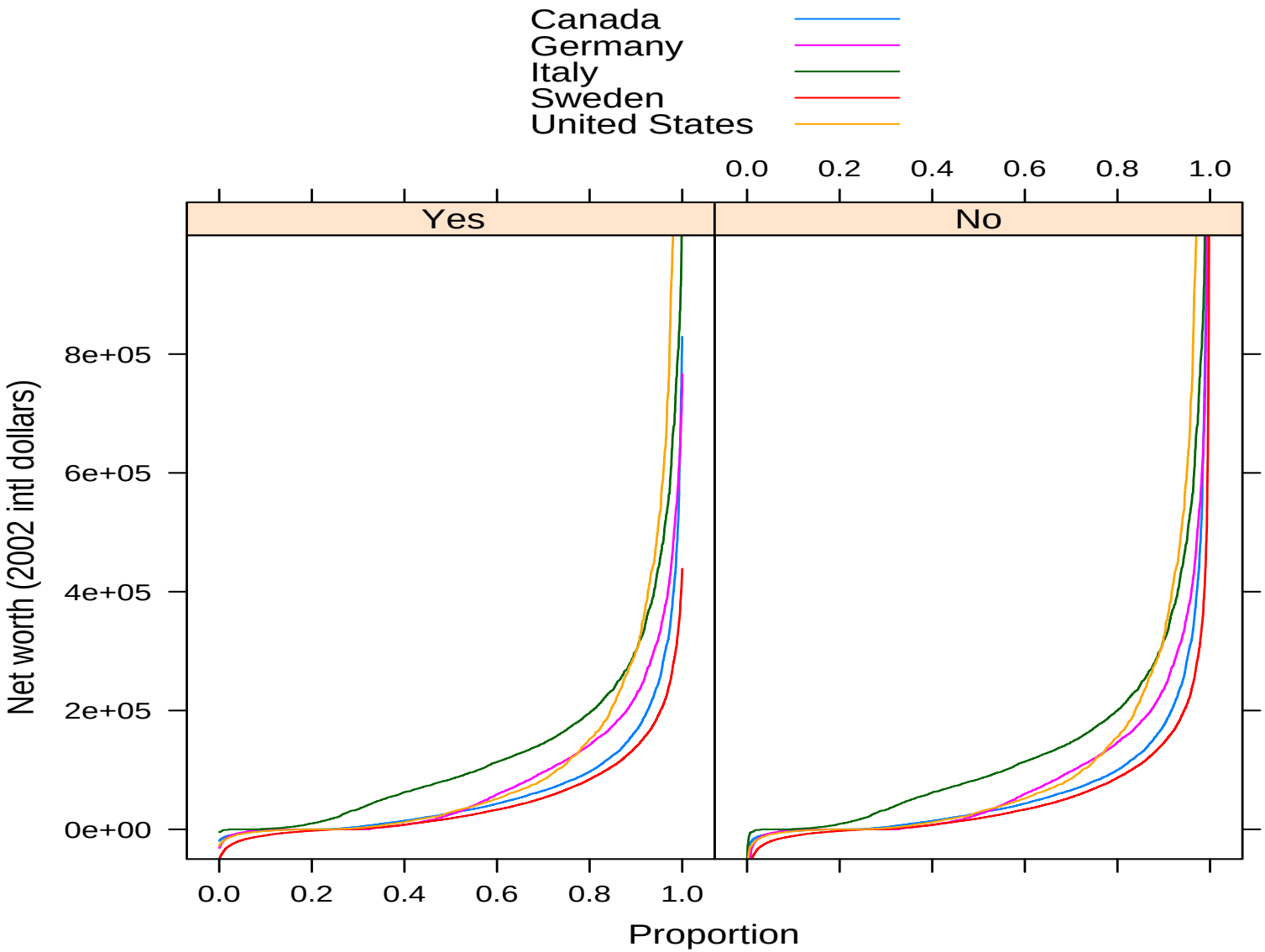


Outline

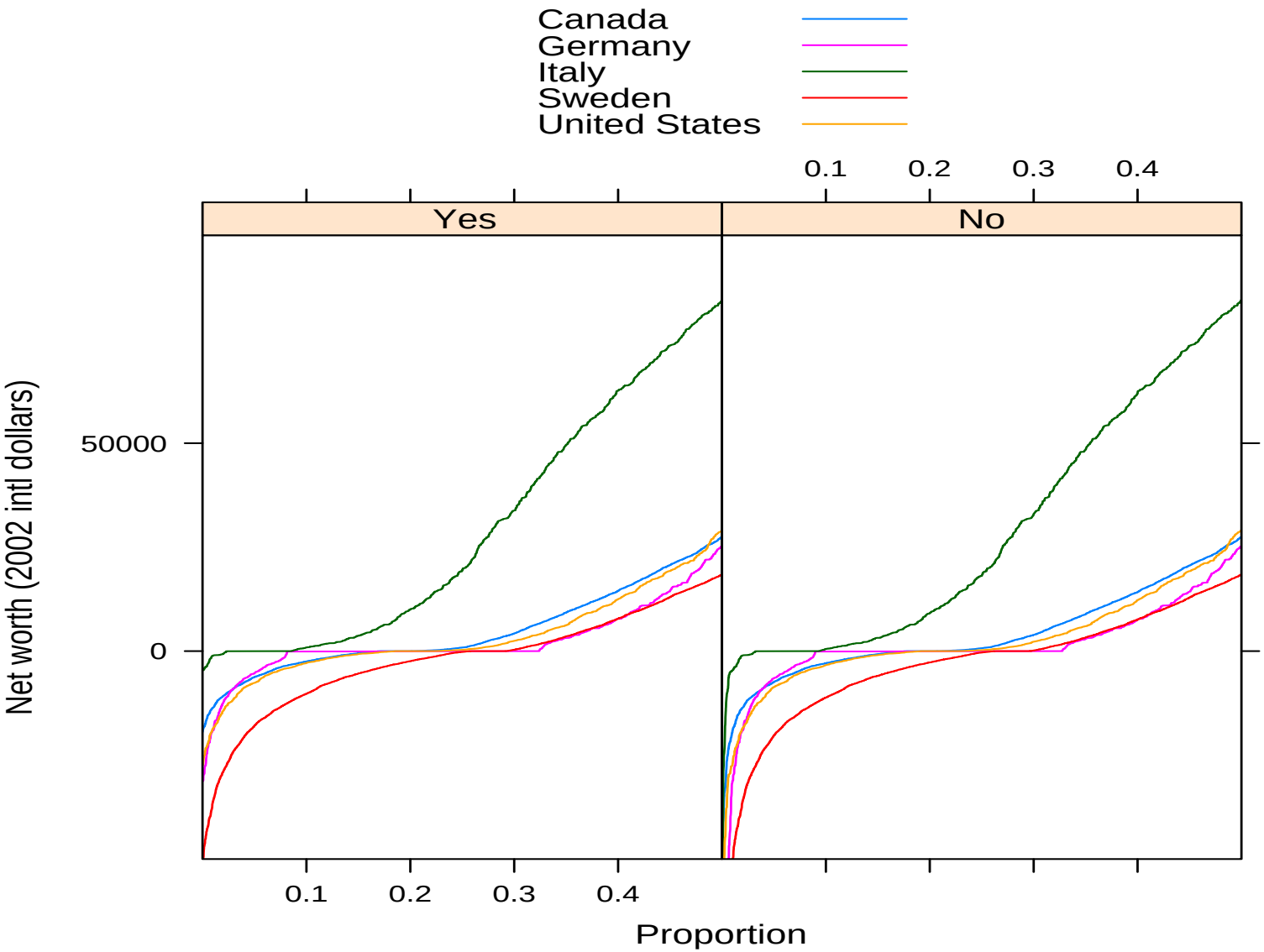
Pen's parades: within-country impact of censoring



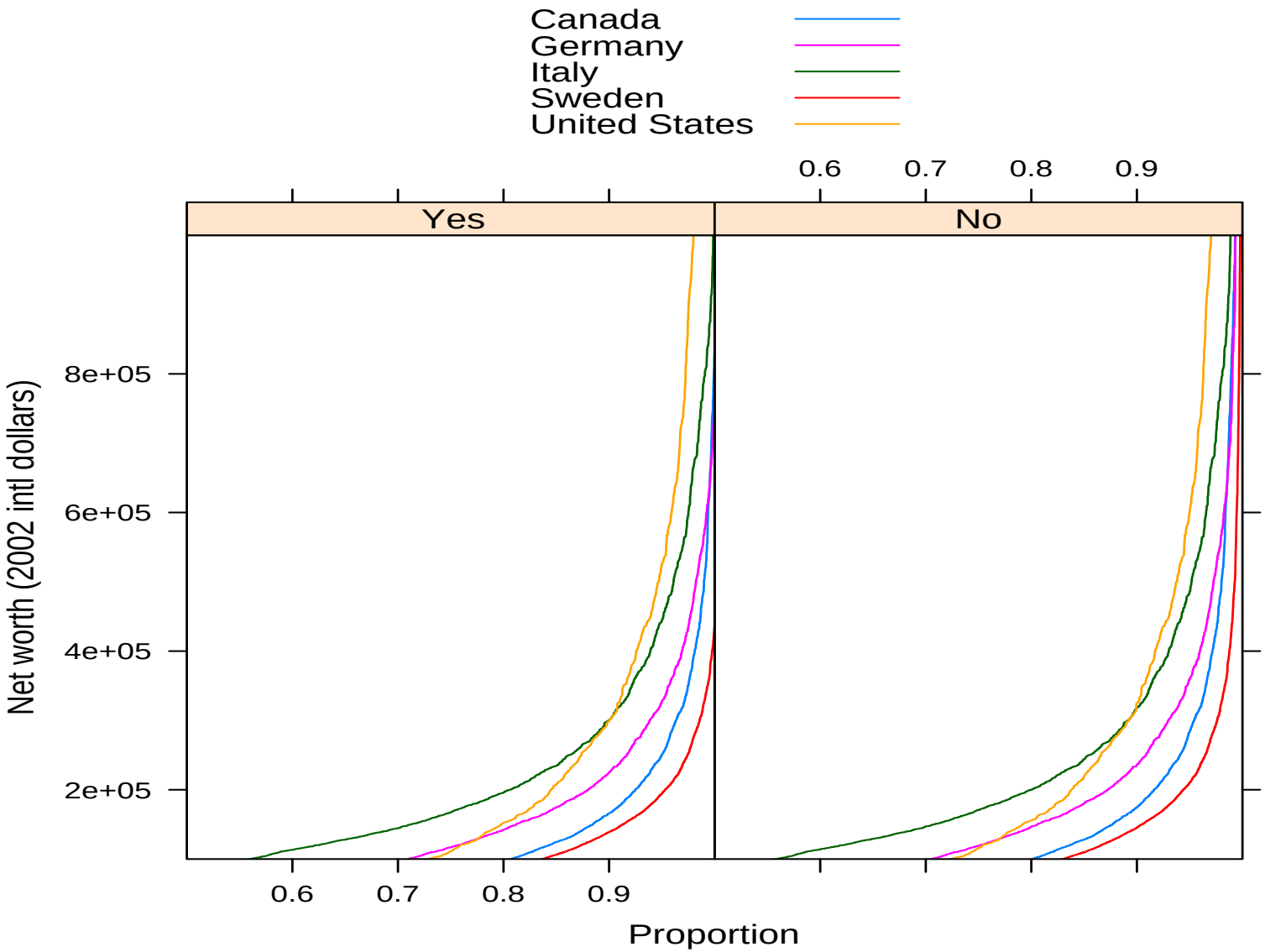
Pen's parades: censoring and country difference



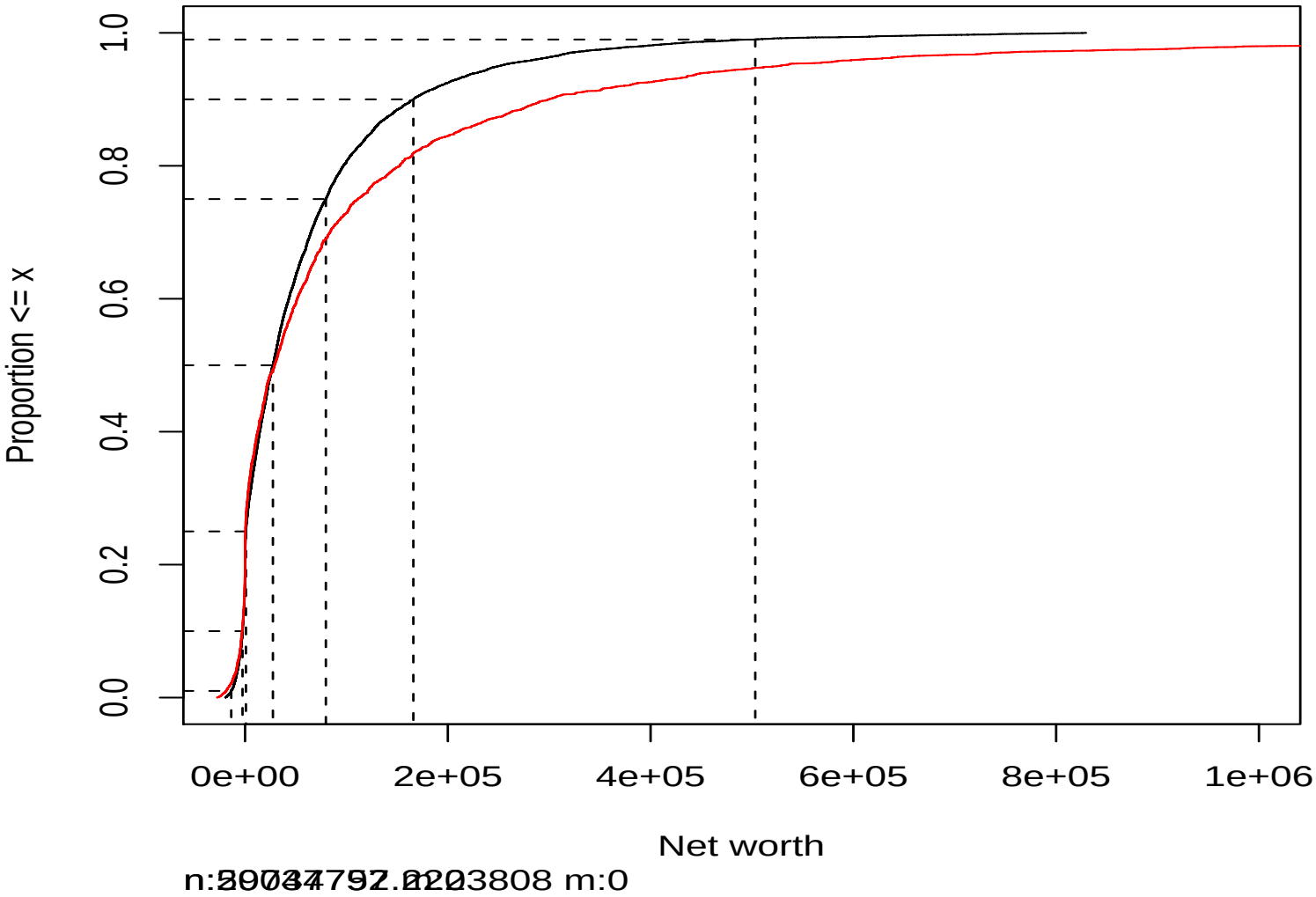
Pen's parades: censoring and country difference



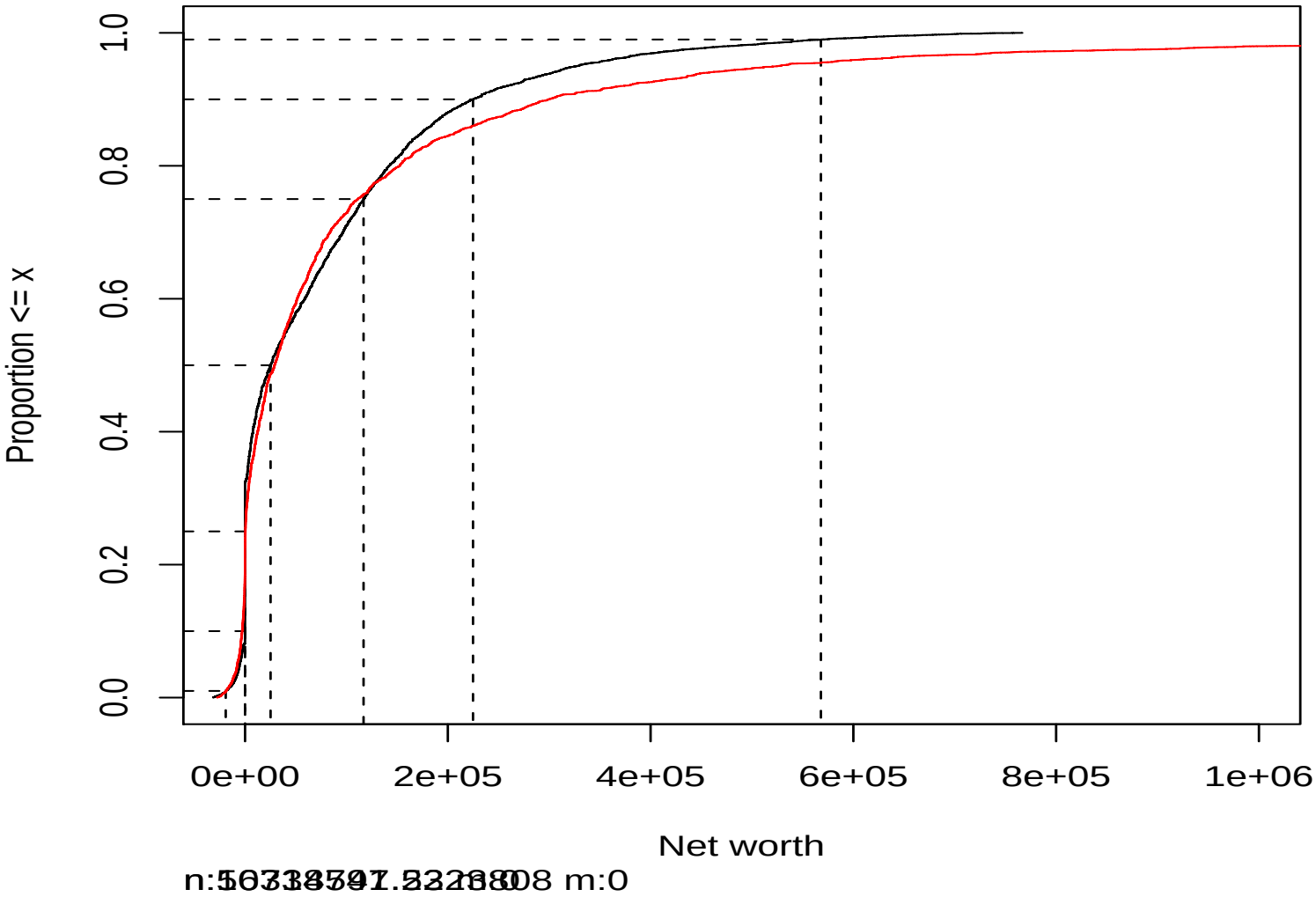
Pen's parades: censoring and country difference



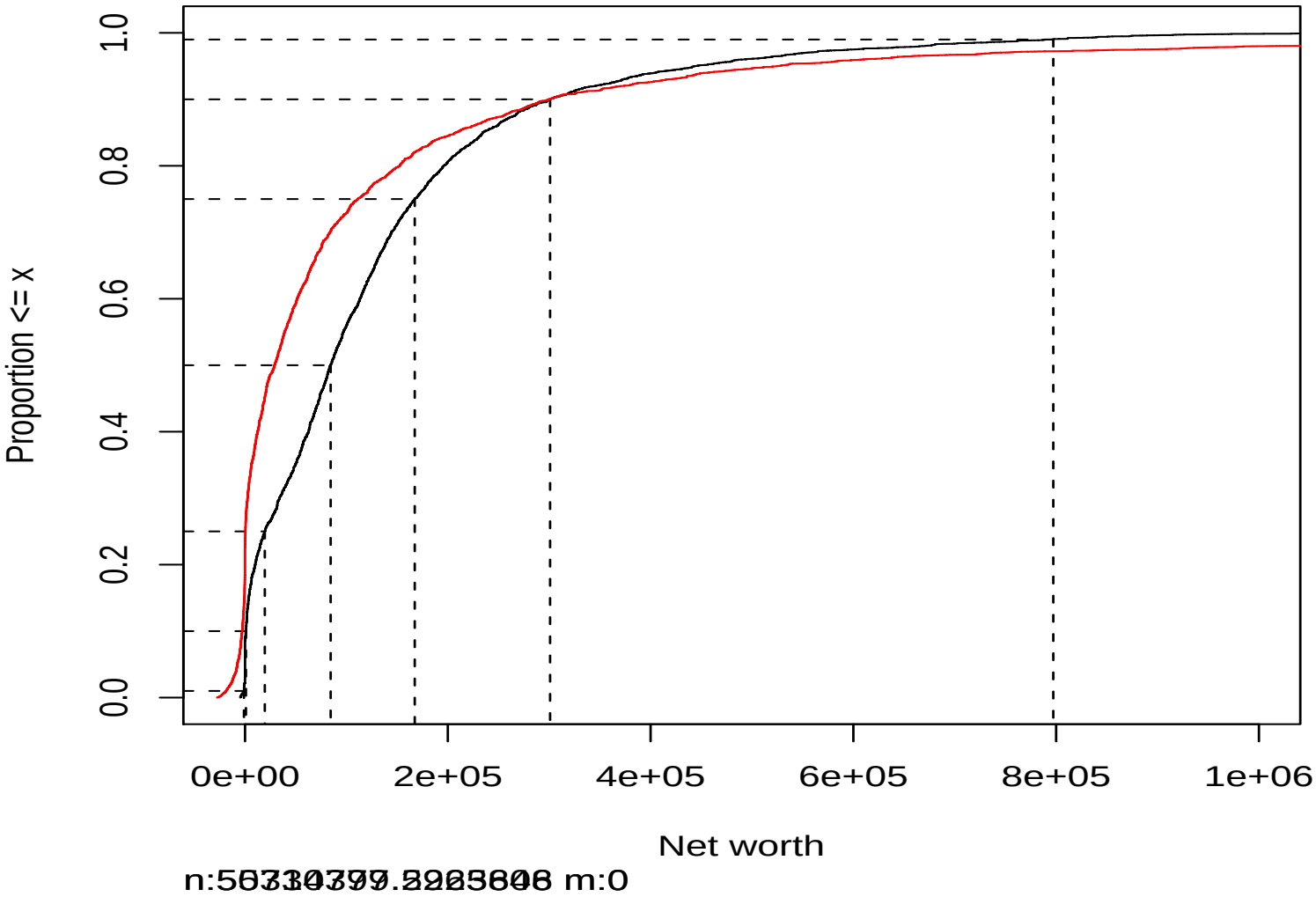
Distributions compared: Canada vs US



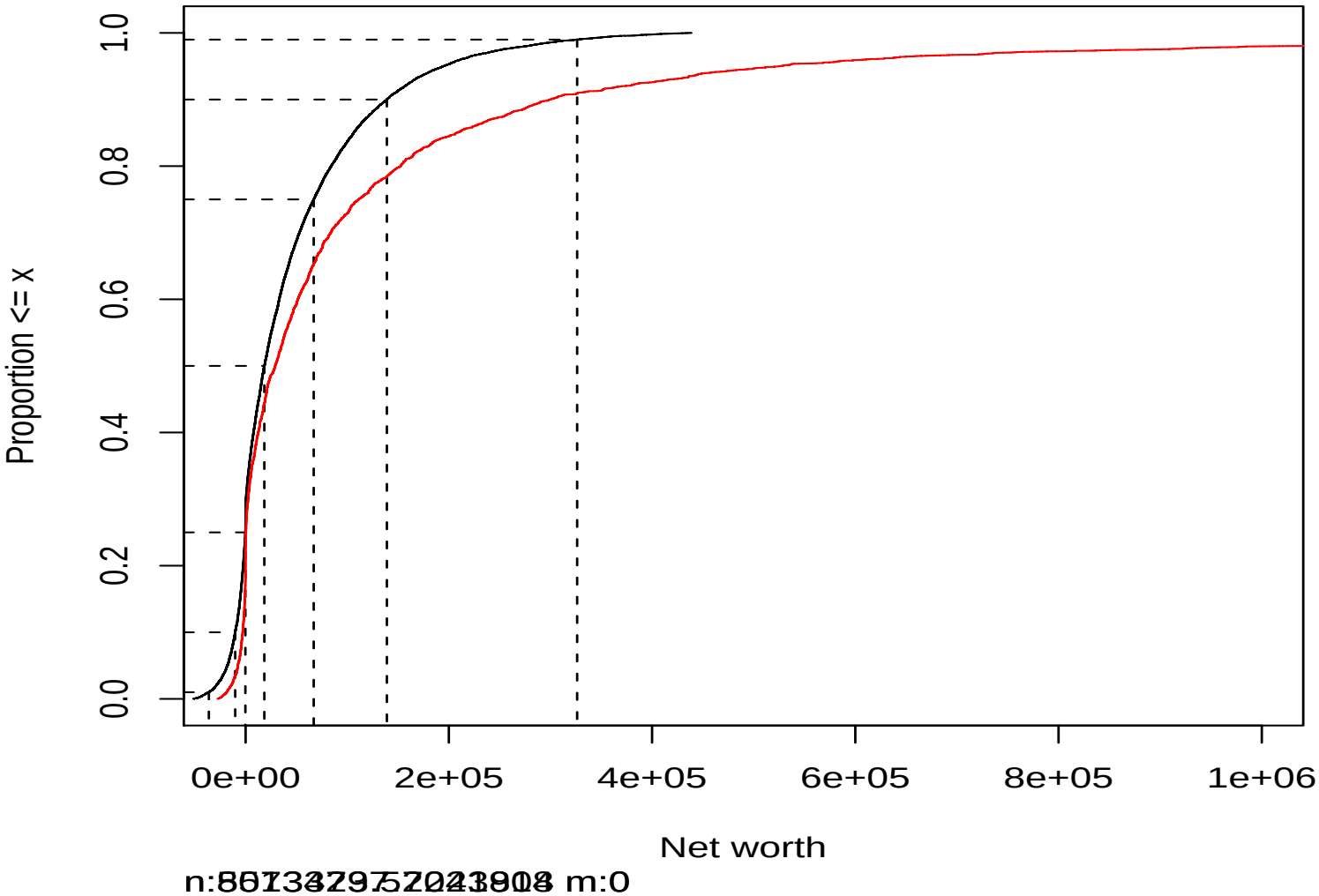
Distributions compared: Germany vs US



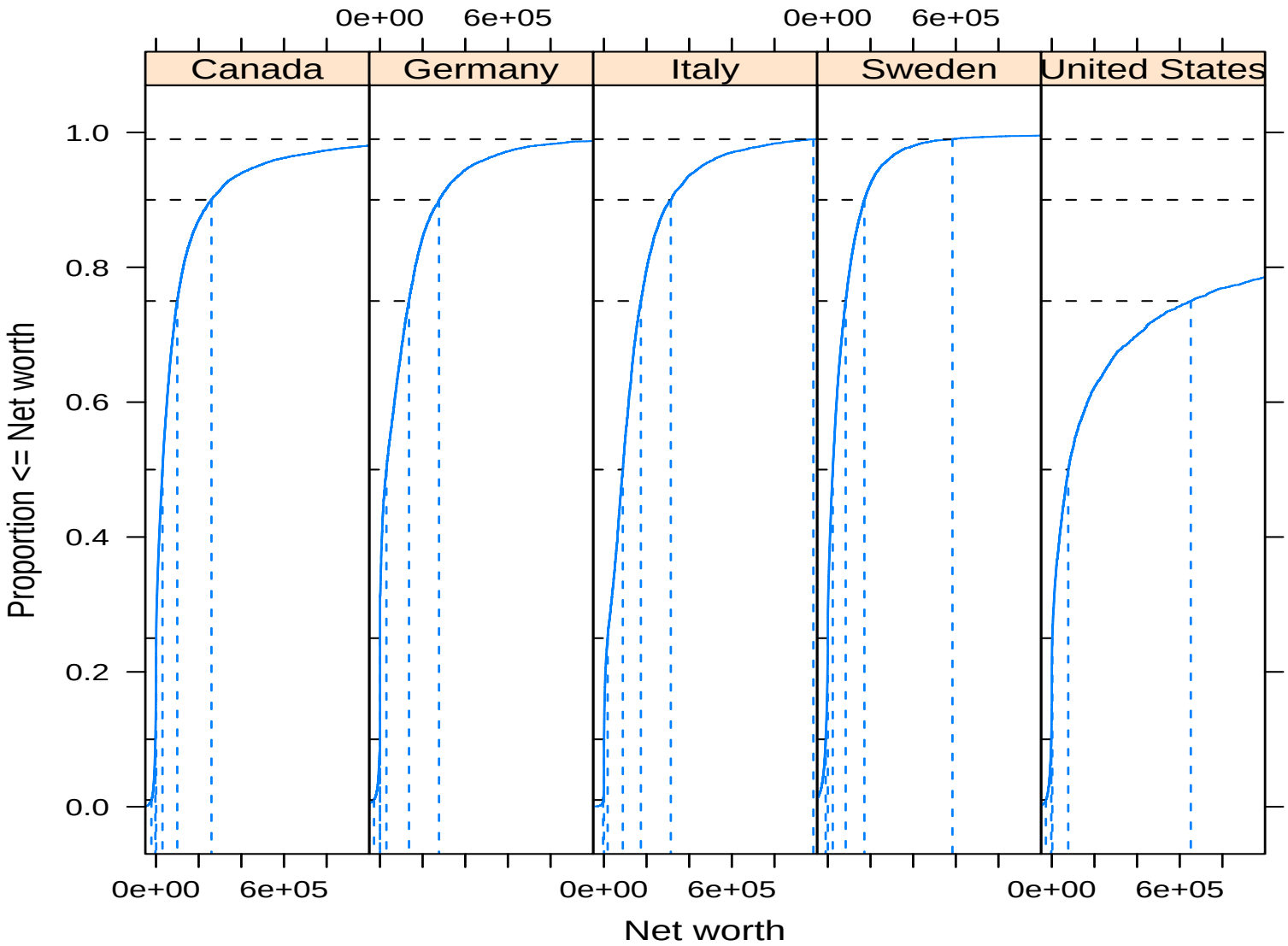
Distributions compared: Italy vs US



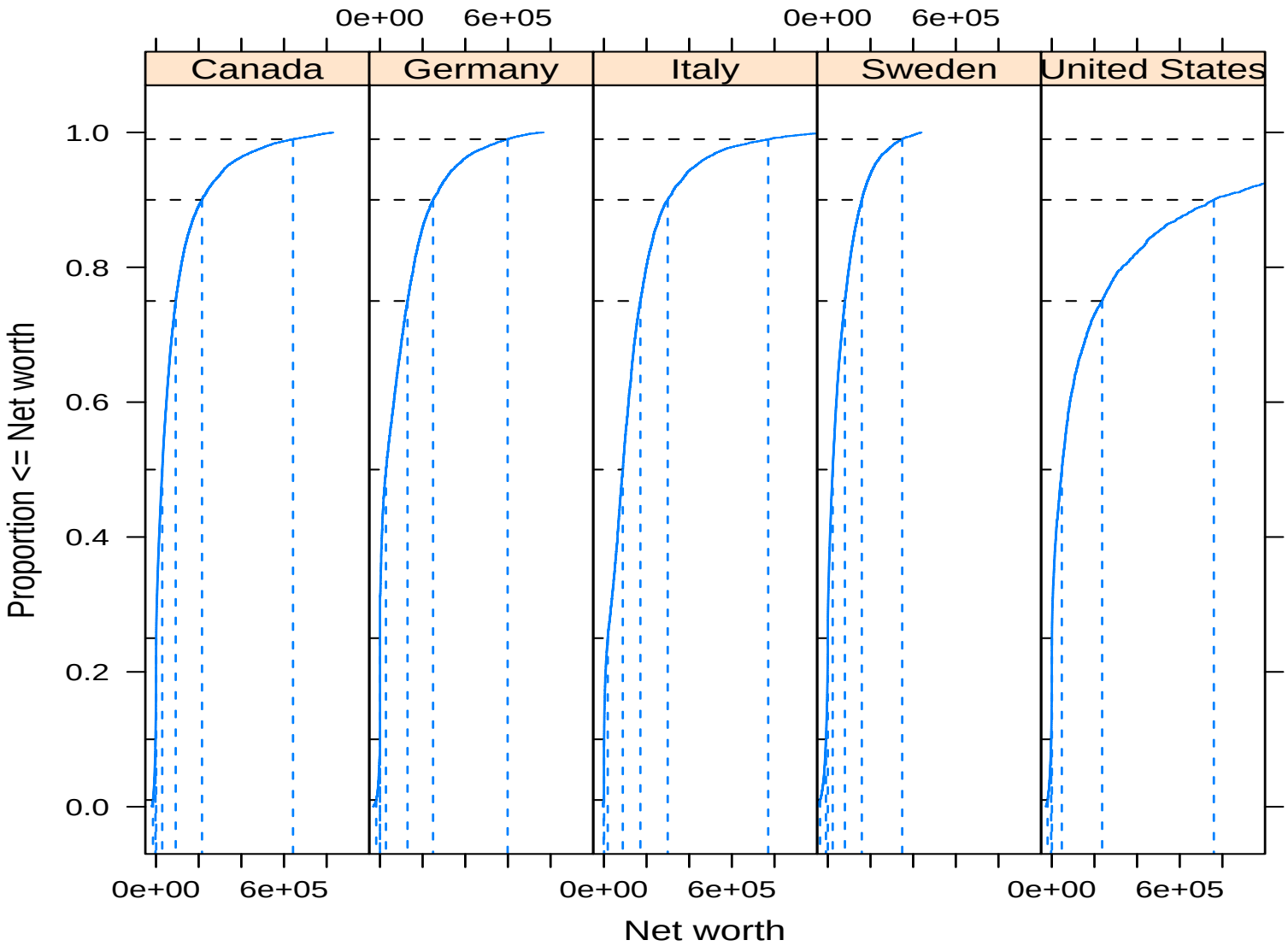
Distributions compared: Sweden vs US



Distribution functions (unshaved data)

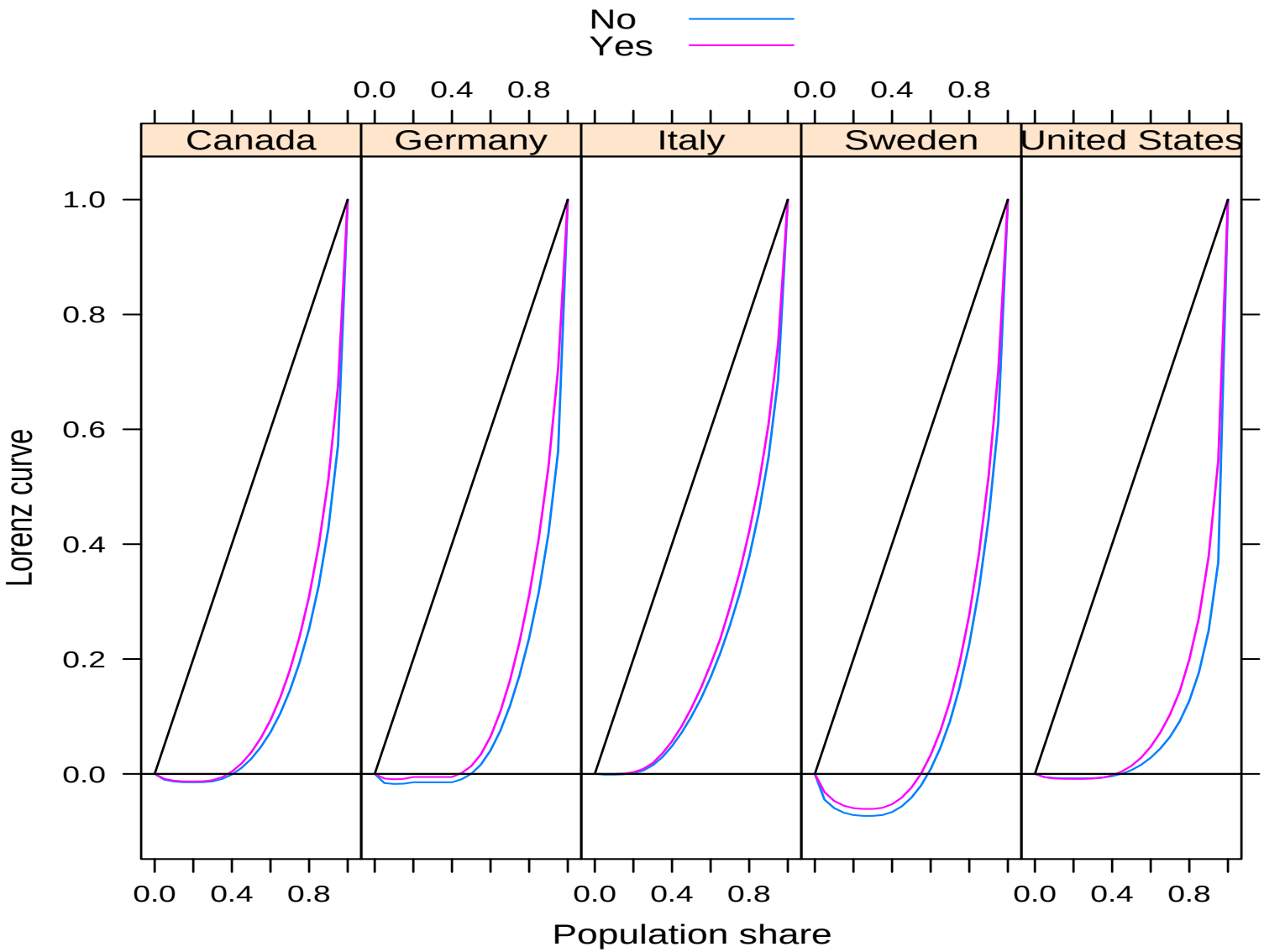


Distribution functions (shaved data)

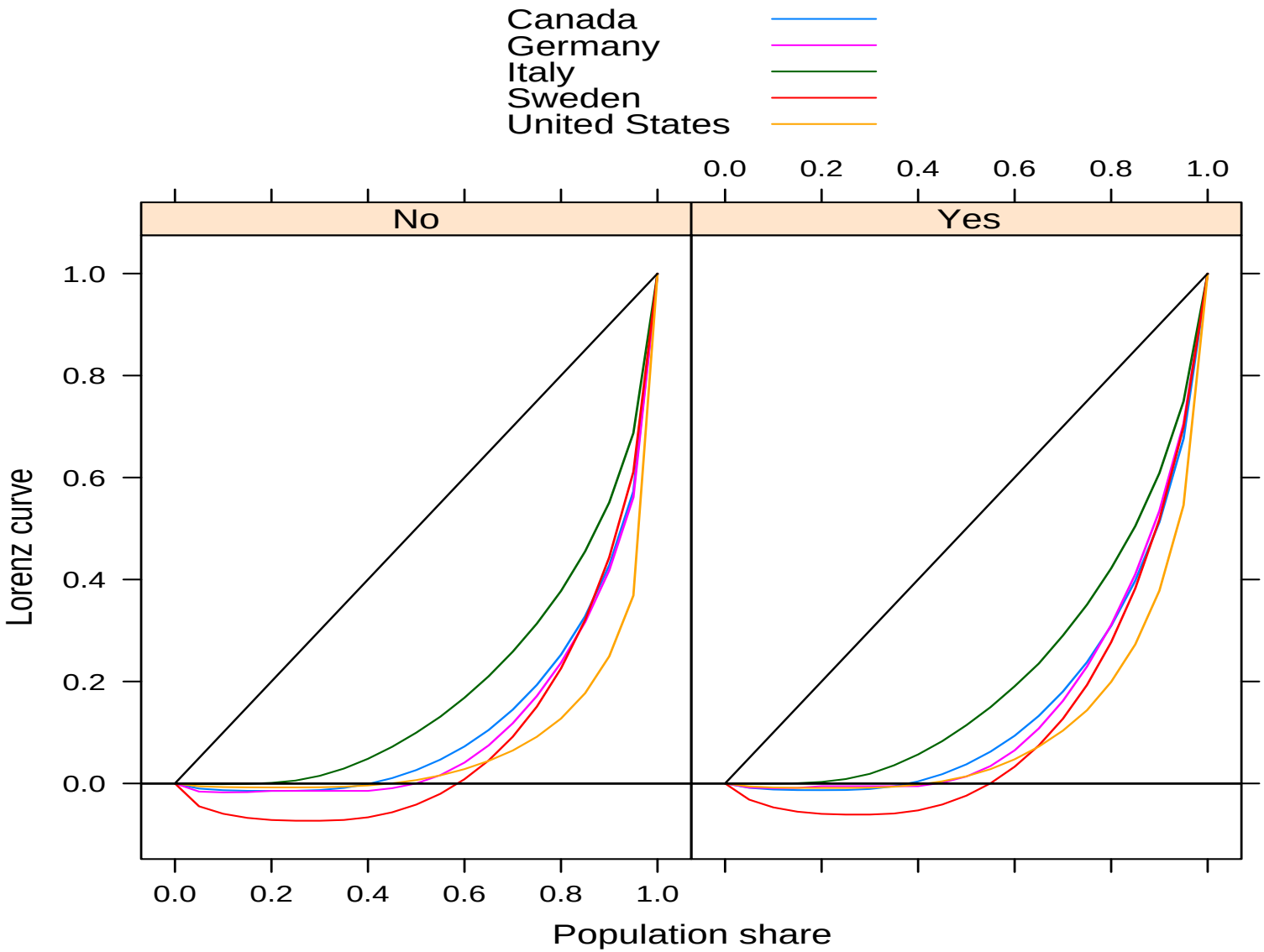


Outline

Lorenz curves: within country



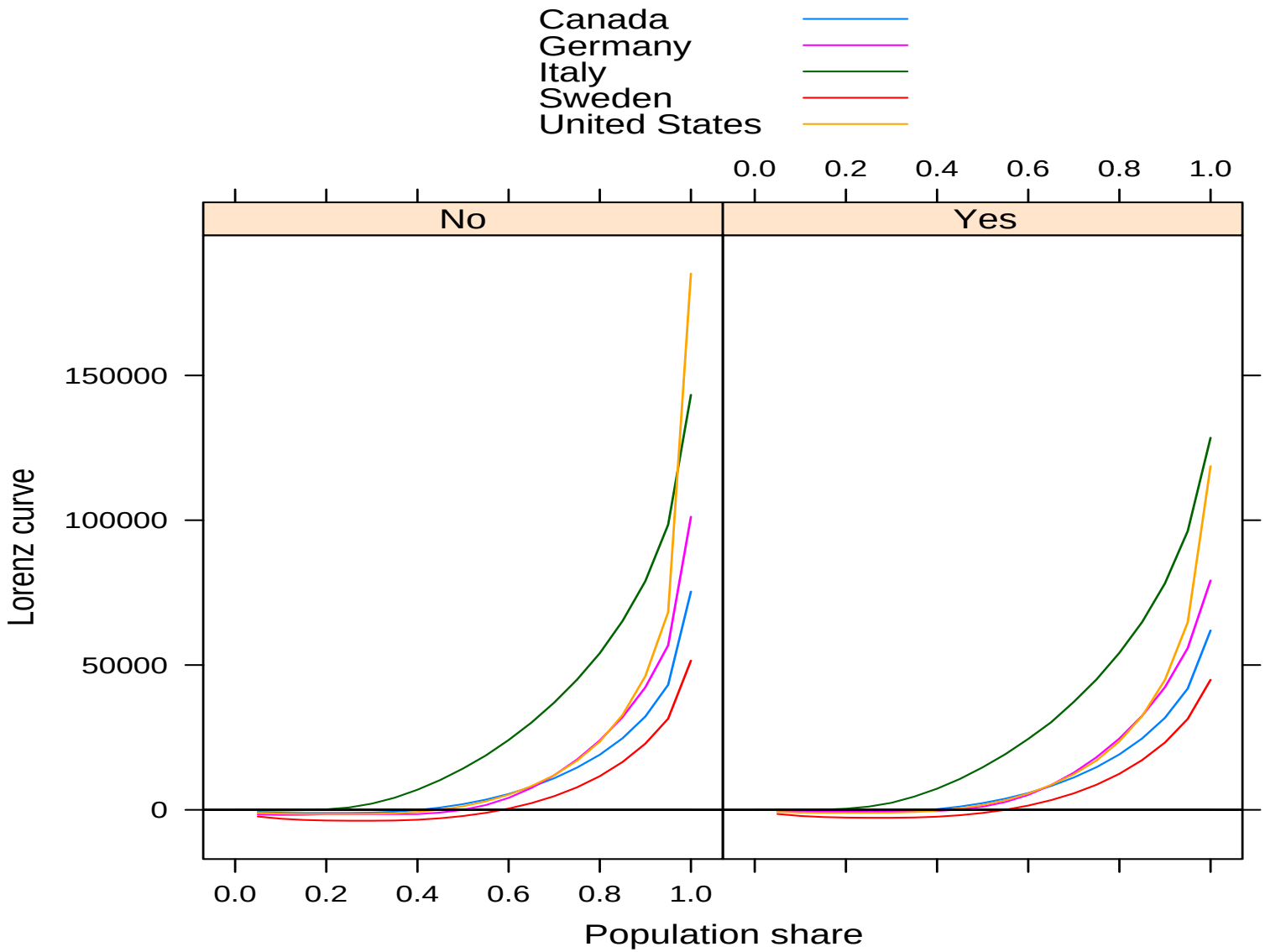
Lorenz curves: country ordering



Lorenz curves: country ordering

	Canada	Germany	Italy	Sweden	United States
Not shaved					
Canada		$\sim$	$<$	$\sim$	$\sim$
Germany			$\sim$	$>$	$\sim$
Italy				$>$	$>$
Sweden					$\sim$
United States					
Shaved					
Canada		$>$	$\sim$	$\sim$	$\sim$
Germany			$\sim$	$\sim$	$\sim$
Italy				$\sim$	$\sim$
Sweden					$\sim$
United States					

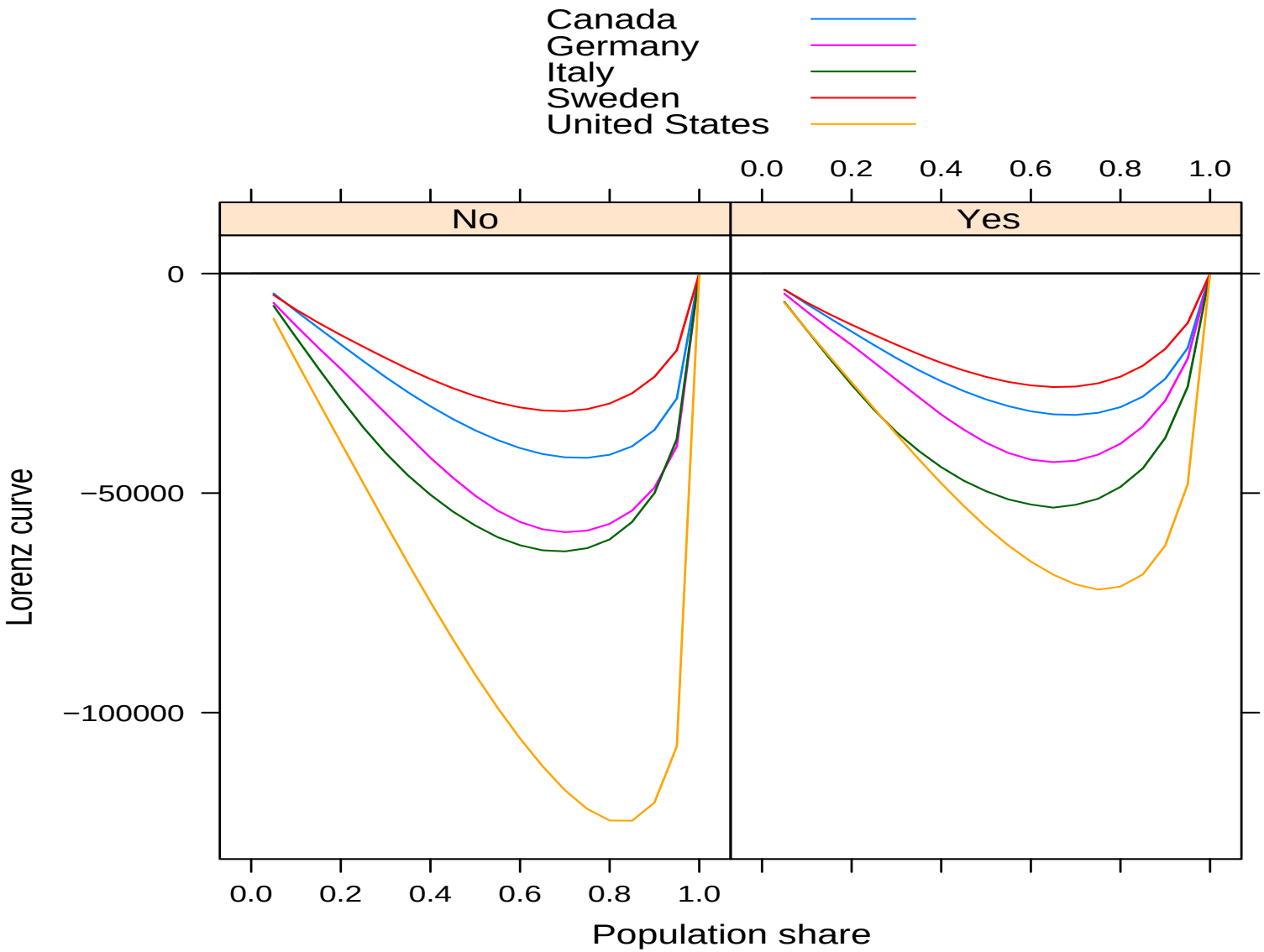
Generalized Lorenz curves: country ordering



Generalized Lorenz curves: country ordering

	Canada	Germany	Italy	Sweden	United States
Not shaved					
Canada		$\sim$	$<$	$>$	$\sim$
Germany			$<$	$>$	$\sim$
Italy				$>$	$>$
Sweden					$<$
United States					
Shaved					
Canada		$\sim$	$<$	$>$	$\sim$
Germany			$<$	$>$	$\sim$
Italy				$>$	$\sim$
Sweden					$<$
United States					

Absolute Lorenz curves: country ordering



Absolute Lorenz curves: country ordering

	Canada	Germany	Italy	Sweden	United States
Not shaved					
Canada		$\sim$	$\sim$	$\sim$	$\sim$
Germany			$>$	$\sim$	$>$
Italy				$\sim$	$\sim$
Sweden					$\sim$
United States					
Shaved					
Canada		$>$	$>$	$\sim$	$>$
Germany			$\sim$	$<$	$\sim$
Italy				$<$	$\sim$
Sweden					$\sim$
United States					

Outline

Sensitivity to the top: median

In/Ex	Canada	Germany	Italy	Sweden	United States
All					
Data	27461	25158	84468	18445	28952
Change					
-1	0	0	0	0	0
-10	0	0	378	2	0
-100	101	400	1606	181	0
-200	405	797	3320	469	0

Sensitivity to the top: mean

In/Ex	Canada	Germany	Italy	Sweden	United States
All					
Data	75375	101198	143302	51530	185172
Change					
-1	7	2478	726	160	54
-10	384	9962	4262	640	577
-100	4339	18448	19352	4399	8552
-200	8935	22692	30216	6566	14701

Sensitivity to the top: Gini coefficient

In/Ex	Canada	Germany	Italy	Sweden	United States
All					
Data	0.667	0.726	0.598	0.614	0.805
Change					
-1	0.000	0.007	0.002	0.001	0.000
-10	0.002	0.029	0.010	0.004	0.001
-100	0.017	0.053	0.045	0.028	0.009
-200	0.036	0.064	0.068	0.040	0.016

Sensitivity to the top: CV^2

In/Ex	Canada	Germany	Italy	Sweden	United States
All					
Data	6.329	33.500	2.596	8.074	41.797
Change					
-1	0.008	10.611	0.121	2.034	0.630
-10	0.319	28.023	0.445	2.915	4.790
-100	1.865	30.583	1.193	4.675	21.488
-200	2.864	30.924	1.441	5.004	26.077

Equivalence scale sensitivity

- Use "Citro-Michael" type equivalence scale:

$$e = (\text{adults} + \gamma \times \text{children})^{\delta} \tag{1}$$

- Square-root scale: $\gamma = 1; \delta = 0.5$
- "Old OECD": $\gamma = .8, \delta = 0.75$
- Let both *gamma* and δ vary between zero and one.

Equivalence scales: United States Gini of net worth

Adult par: δ	**Child par:** γ					
	c.0	c.0.2	c.0.4	c.0.6	c.0.8	c.1
a.0	0.802	0.802	0.802	0.802	0.802	0.802
a.0.2	0.801	0.801	0.802	0.802	0.802	0.802
a.0.4	0.801	0.801	0.802	0.802	0.803	0.804
a.0.6	0.801	0.802	0.803	0.804	0.805	0.806
a.0.8	0.801	0.803	0.804	0.806	0.808	0.810
a.1	0.802	0.804	0.807	0.809	0.812	0.814

Equivalence scales: Country comparisons

	Canada	Germany	Italy	Sweden	United States
Canada		$<$	$>$	$>$	$<$
Germany			$>$	$>$	$<$
Italy				$\sim$	$<$
Sweden					$<$
United States					

Equivalence scales: Italy vs Sweden

It-Sw	c.0	c.0.2	c.0.4	c.0.6	c.0.8	c.1
a.0	−0.0156	−0.0156	−0.0156	−0.0156	−0.0156	−0.0156
a.0.2	−0.0136	−0.0139	−0.0143	−0.0146	−0.0148	−0.0150
a.0.4	−0.0108	−0.0119	−0.0129	−0.0138	−0.0145	−0.0152
a.0.6	−0.0075	−0.0096	−0.0115	−0.0132	−0.0146	−0.0159
a.0.8	−0.0038	−0.0071	−0.0101	−0.0127	−0.0150	−0.0168
a.1	0.0003	−0.0044	−0.0087	−0.0124	−0.0153	−0.0178

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What have we learned?