

Wealth inequality: Britain in international perspective

Frank Cowell: Wealth Seminar June 2012

Questions

- What does UK wealth inequality look like in context?
- What is role of inequality among the rich?
 - graphical overview
 - investigate comparisons of alternative “rich” definitions
 - decomposition analysis
- Sensitive to what we mean by wealth?
 - graphical overview
 - investigate comparisons of alternative wealth concepts
- Sensitive to assumptions about the upper tail?
 - semi-parametric modelling
 - reuse decomposition analysis

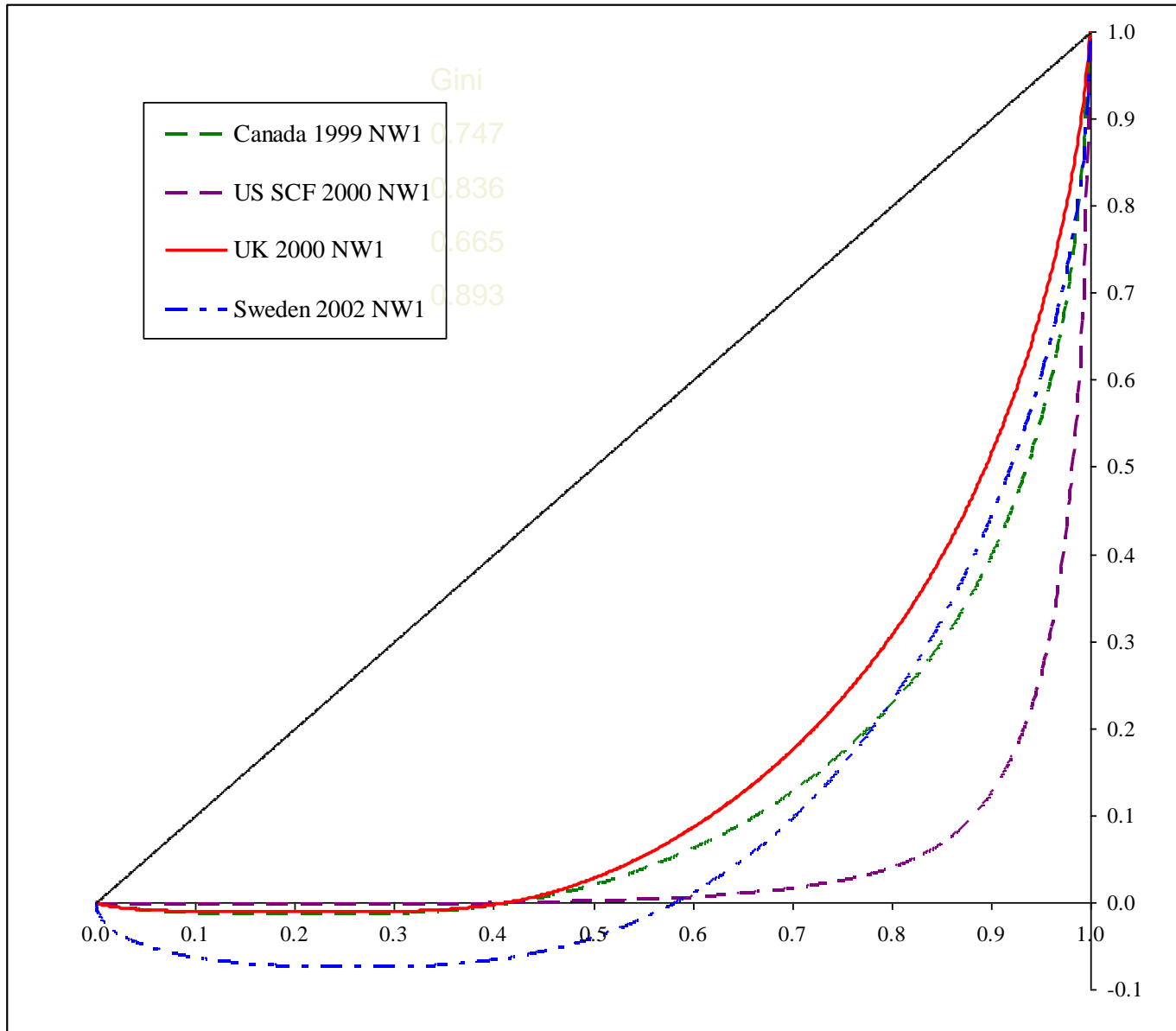
Tools

- Use consistent definitions from LWS
- Compare with US, Canada, Sweden
 - all available with roughly the same wealth definition
 - all available around the year 2000
- Focus on Net Worth 1
 - “industry standard” for wealth comparisons
 - this version excludes business equity
- Use standard tools for description and modelling
 - Gini index
 - Pareto model

LWS: Wealth inequality in four countries

	<i>Gini</i>	<i>Share</i> <i>Top 10%</i>	<i>Share</i> <i>Top 5%</i>	<i>Share</i> <i>Top 1%</i>
UK	0.665	0.456	0.301	0.101
Sweden	0.893	0.582	0.406	0.175
Canada	0.747	0.532	0.374	0.151
US	0.836	0.705	0.575	0.329

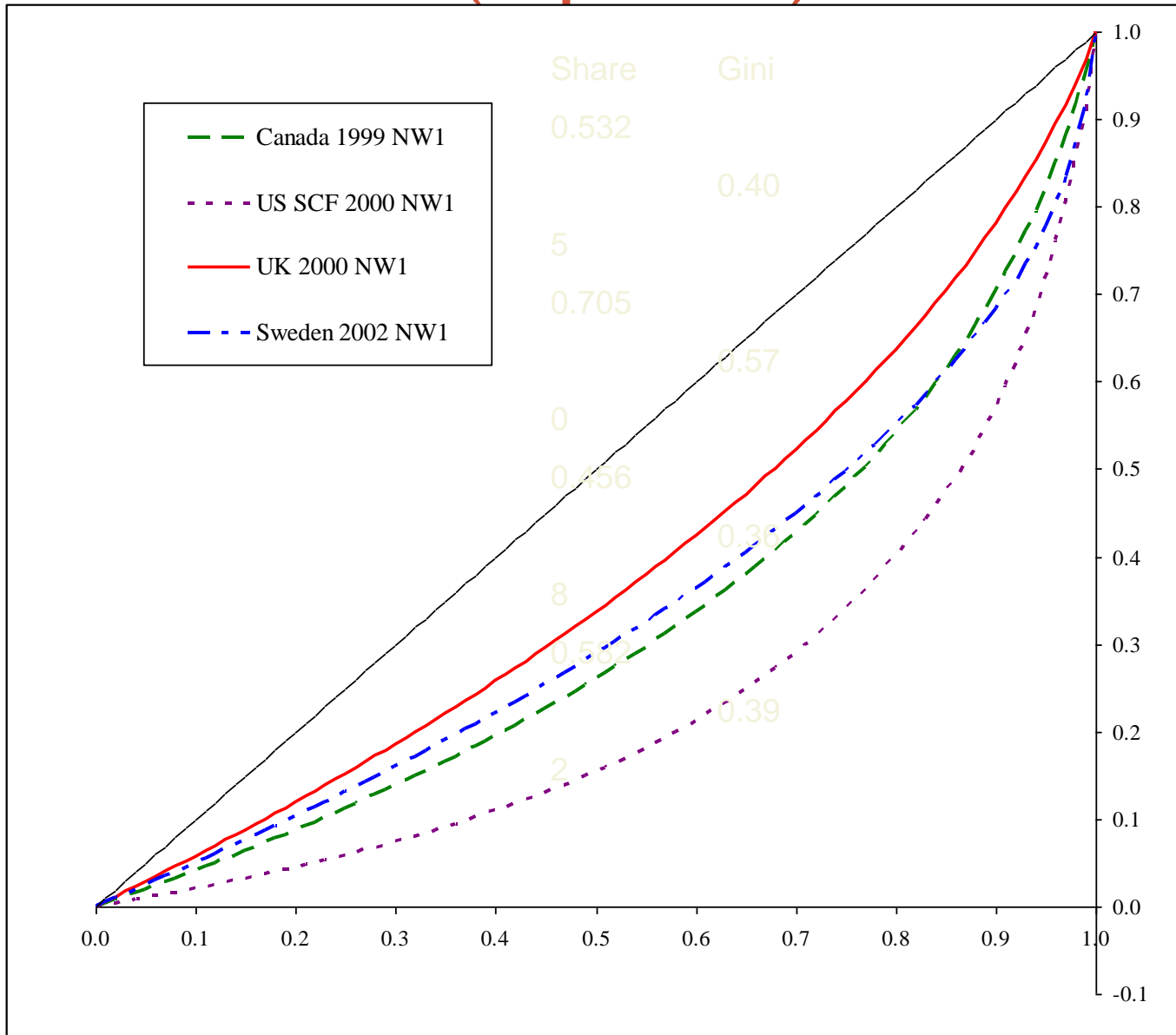
LWS: Net worth



LWS: breakdown by wealth group

	Gini overall	Share rich <i>Top 10%</i>	rich	Gini non-rich	between
UK	0.665	0.456	0.260	0.607	0.356
Sweden	0.893	0.582	0.314	1.045	0.482
Canada	0.747	0.532	0.293	0.710	0.432
US	0.836	0.705	0.349	0.779	0.605
		<i>Top 5%</i>			
UK		0.301	0.223	0.618	0.251
Sweden		0.406	0.316	0.941	0.356
Canada		0.374	0.261	0.703	0.324
US		0.575	0.318	0.748	0.525
		<i>Top 1%</i>			
UK		0.101	0.157	0.644	0.091
Sweden		0.175	0.326	0.891	0.165
Canada		0.151	0.132	0.721	0.141
US		0.329	0.198	0.777	0.319

LWS: Net worth (top 10%)



Household portfolio composition – LWS

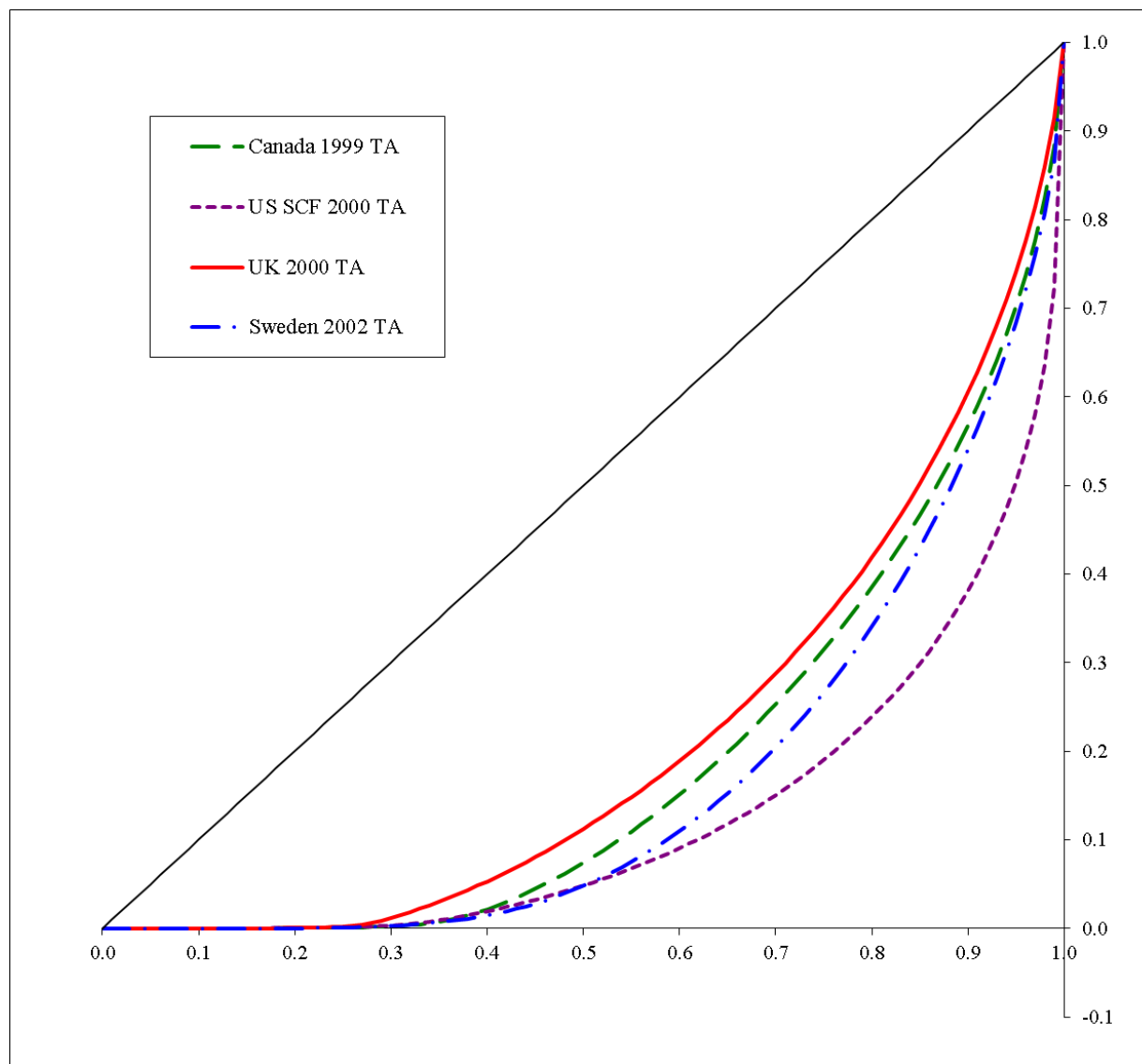
Wealth components	Canada	Finland	Germany	Italy	Sweden	United Kingdom	US PSID	US SCF
	1999	1998	2002	2002	2002	2000	2001	2001
<i>Non-financial assets</i>	78	84	87	85	72	83	67	62
Principal residence	64	64	64	68	61	74	52	45
Real estate	13	20	23	17	11	9	14	17
<i>Financial assets</i>	22	16	13	15	28	17	33	38
Deposit accounts	9	10	n.a.	8	11	9	10	10
Bonds	1	0	n.a.	3	2	n.a.	n.a.	4
Stocks	7	6	n.a.	1	6	n.a.	23	15
Mutual funds	5	1	n.a.	3	9	n.a.	n.a.	9
<i>Total assets</i>	100	100	100	100	100	100	100	100
<i>Total debt</i>	26	16	18	4	35	21	22	21
Home secured	22	11	15	2	n.a.	18	n.a.	18
<i>Total net worth</i>	74	84	82	96	65	79	78	79

Source: [Sierminska et al \(2006\)](#)

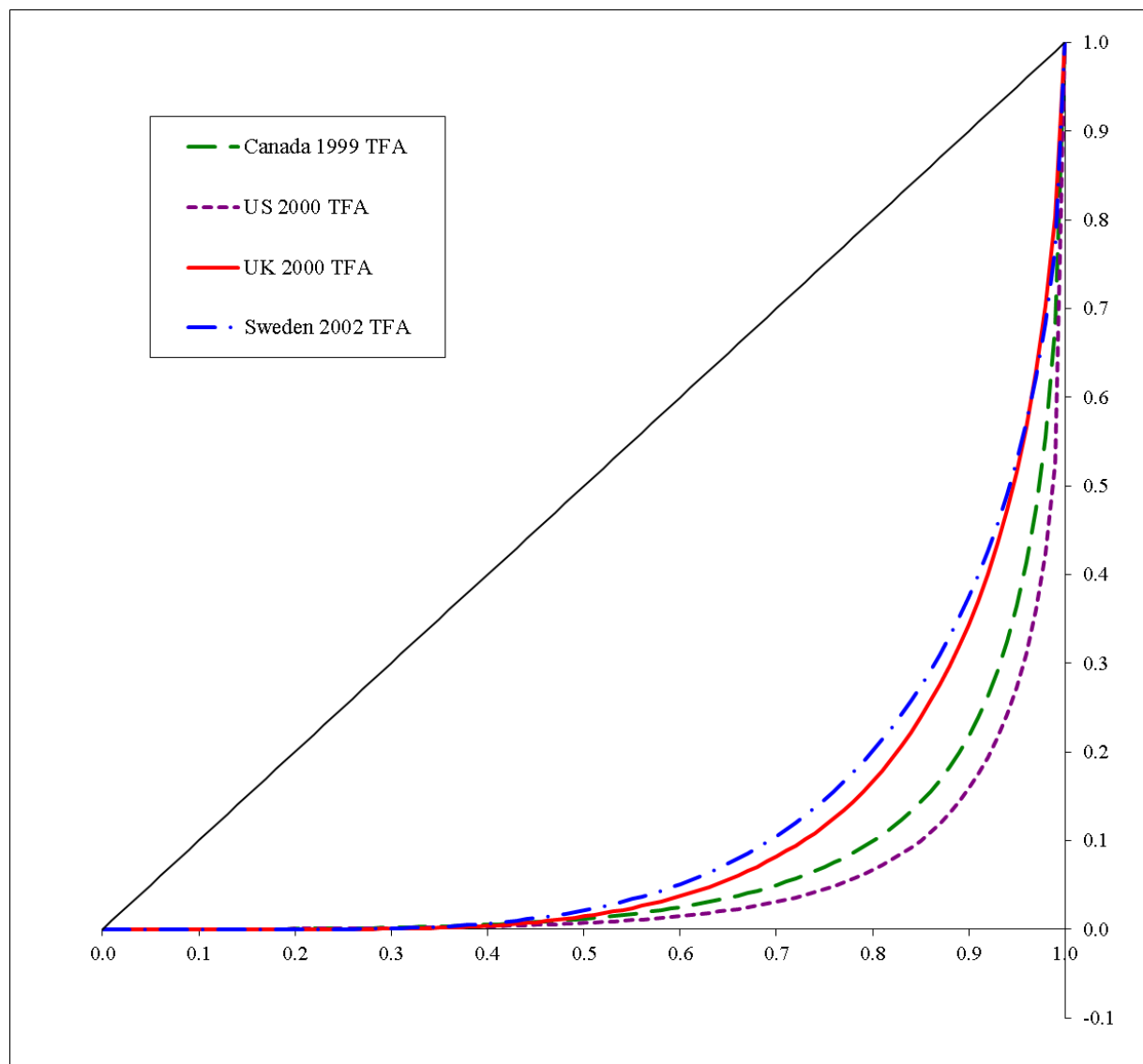
LWS: breakdown by asset type

	Share of...			Gini Coefficient				
	Top 10%	Top 5%	Top 1%	All	Top 10%	Top 5%	Top 1%	
	<i>Principal Residence</i>			<i>Principal Residence</i>				
UK	0.339	0.201	0.051	UK	0.559	0.274	0.284	0.308
Sweden	0.346	0.209	0.050	Sweden	0.708	0.369	0.355	0.429
Canada	0.269	0.146	0.036	Canada	0.603	0.372	0.435	0.416
US	0.168	0.073	0.024	US	0.645	0.484	0.500	0.449
	<i>Investment Property</i>			<i>Investment Property</i>				
UK	0.653	0.540	0.302	UK	0.966	0.860	0.793	0.582
Sweden	0.680	0.579	0.386	Sweden	0.949	0.847	0.839	0.827
Canada	0.645	0.493	0.096	Canada	0.930	0.727	0.672	0.674
US	0.784	0.606	0.415	US	0.959	0.700	0.747	0.750
	<i>Financial Assets</i>			<i>Financial Assets</i>				
UK	0.484	0.346	0.120	UK	0.799	0.584	0.548	0.543
Sweden	0.534	0.401	0.213	Sweden	0.778	0.587	0.593	0.509
Canada	0.743	0.609	0.357	Canada	0.860	0.616	0.553	0.195
US	0.977	0.863	0.506	US	0.899	0.510	0.417	0.294

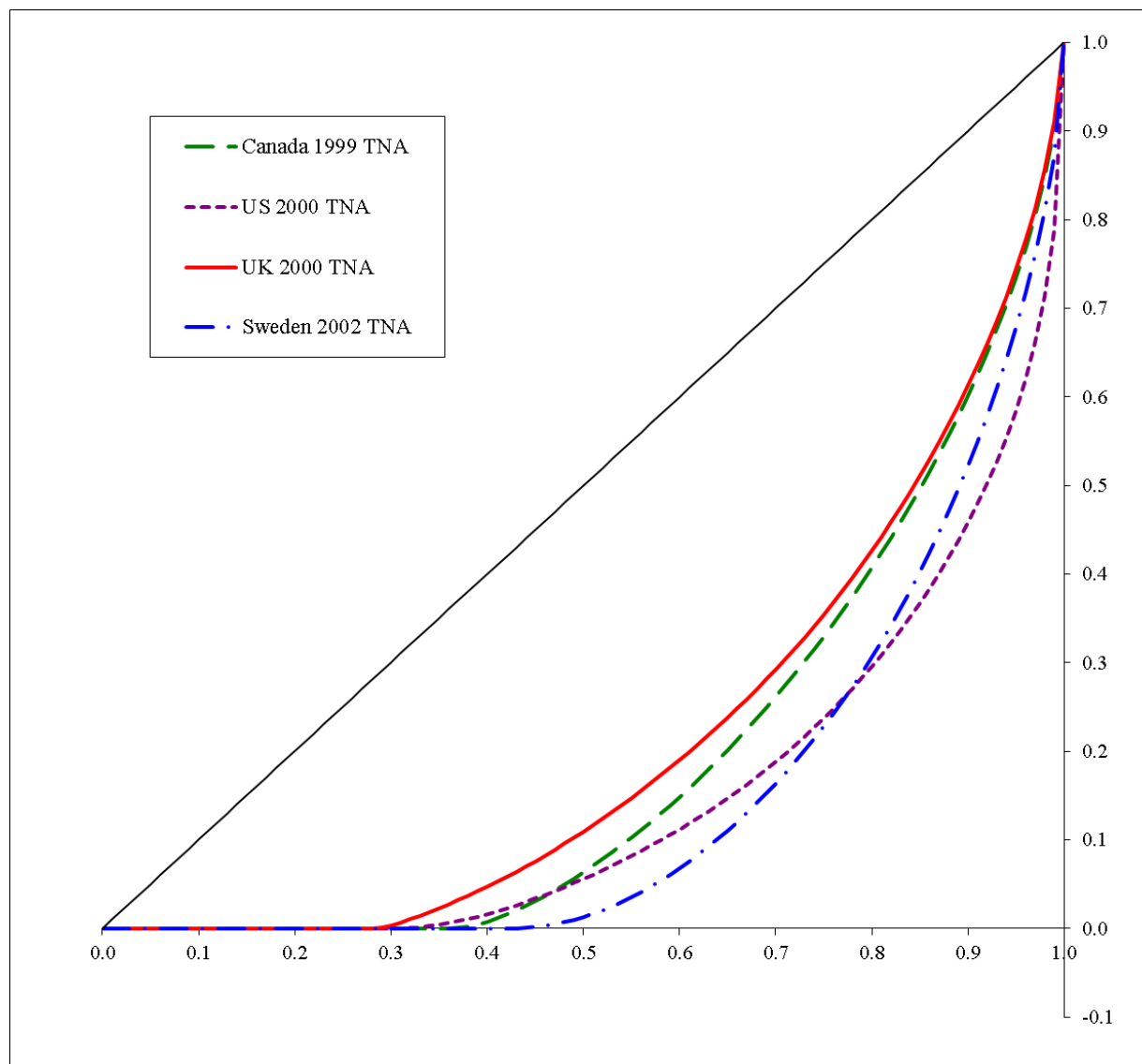
LWS: Total Assets



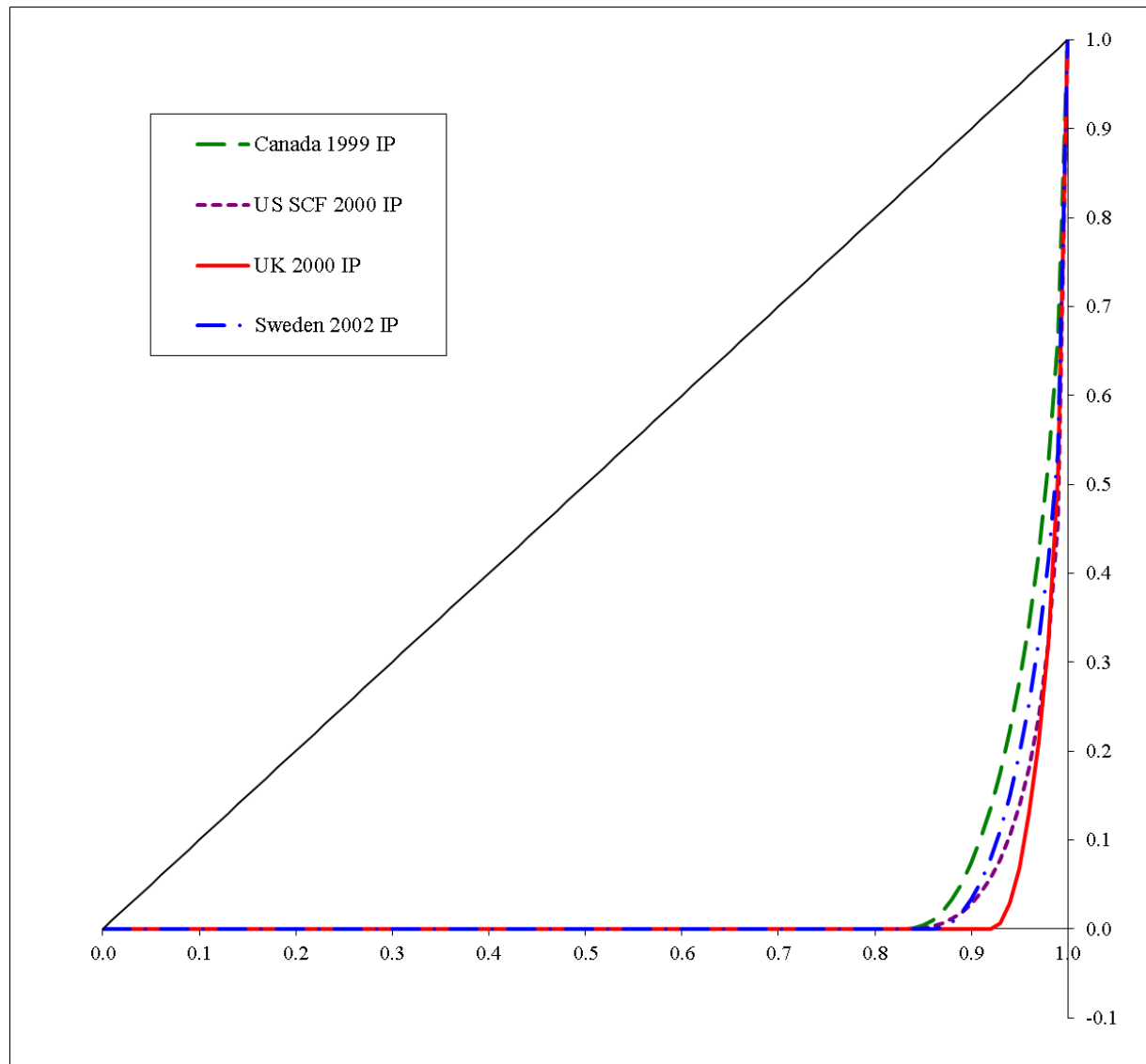
LWS: Total *Financial Assets*



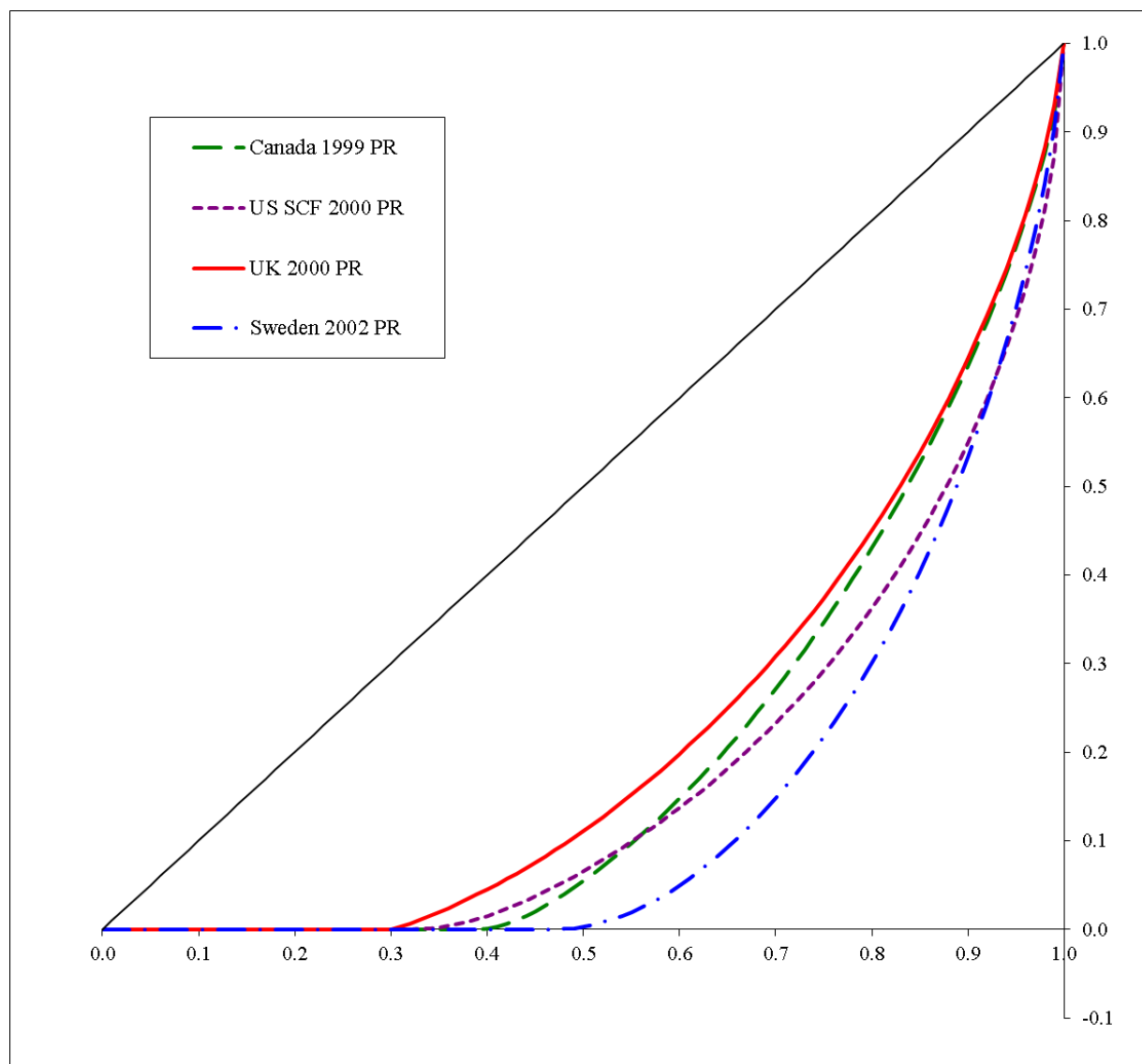
LWS: Total *Nonfinancial* Assets



LWS: Investment property



LWS: Principal residence

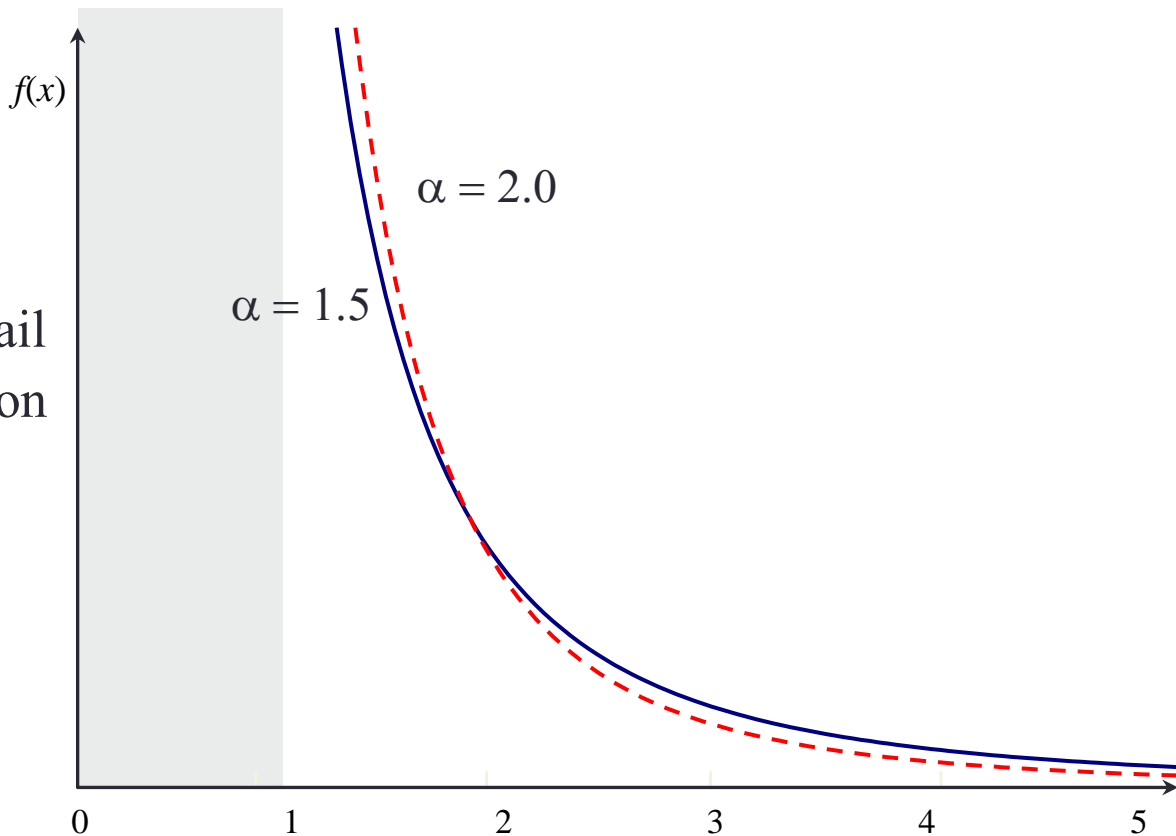


A model for wealth distribution

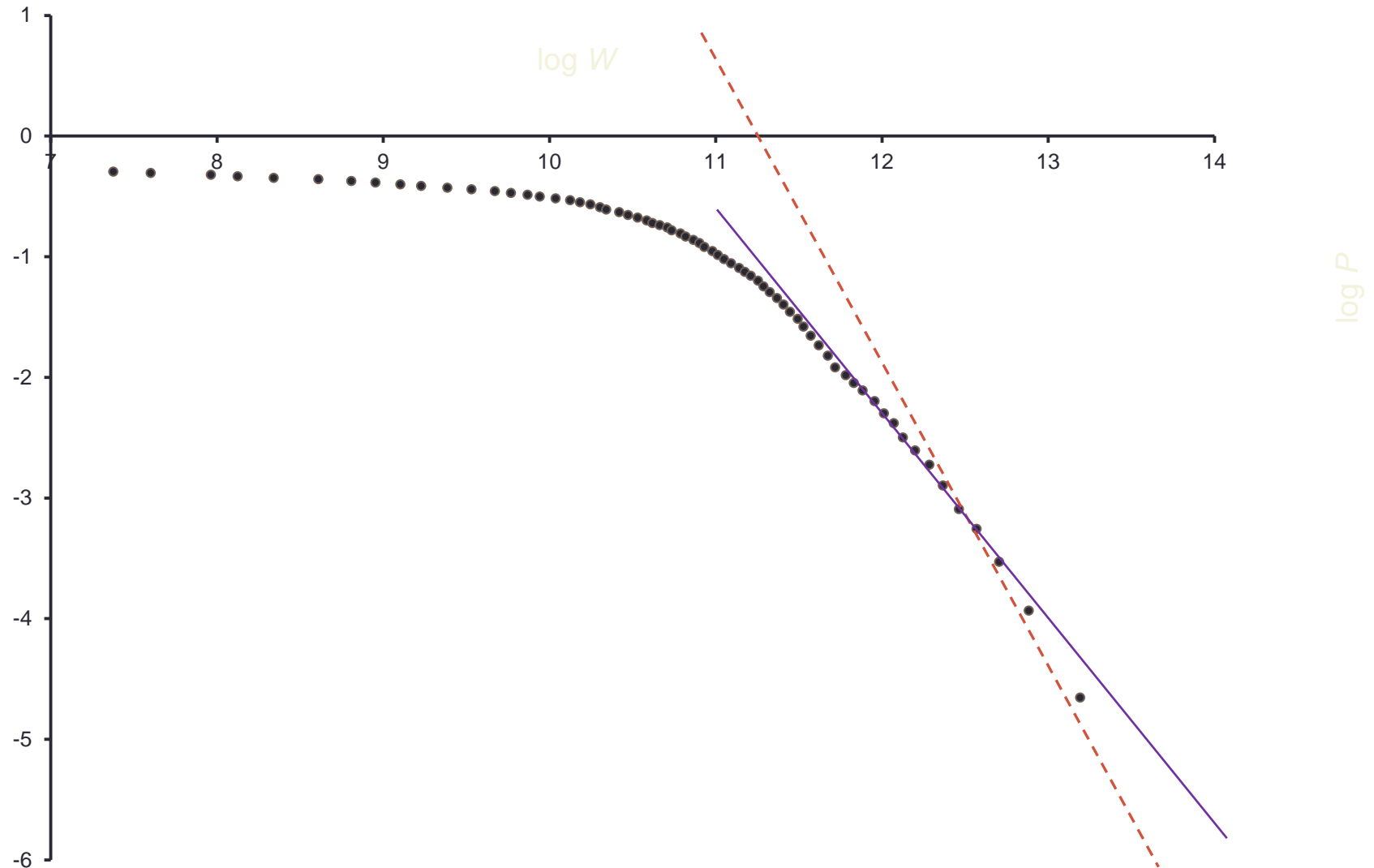
- Distinctive shape of empirical wealth distribution
- Upper tail appears to conform to Pareto model
- Pareto distribution
 - $F(x) = 1 - [x / \underline{x}]^\alpha$
 - $f(x) = \alpha \underline{x}^\alpha x^{-\alpha-1}$
- Simple interpretation
 - α captures “weight” of tail
 - \underline{x} “locates” the distribution
- Inequality

$$\frac{\text{average}}{\text{base}} = \frac{\alpha}{\alpha - 1}$$

$$\text{Gini}^* = \frac{1}{2\alpha - 1}$$



UK Wealth: Pareto diagram



Modelling the rich

- A semi-parametric approach to analysing wealth distribution
- Several motives for doing this
 - patchy data
 - under-reporting?
 - inequality sensitive to outliers?
- Assume that upper tail has “Pareto” shape
 - standard in the wealth literature
 - plot proportion with wealth of at least x against x
 - will be a straight line if done on a double-log graph
- Just a case of fitting a straight line?
 - standard regression may be sensitive to outliers
 - robust methods are available

Pareto estimates

	Top 10%	Top 5%	Top 1%
	<hr/>		
	<i>OLS</i>		
UK	2.37	2.71	3.52
Sweden	1.78	1.70	1.43
Canada	1.48	1.74	3.29
US	0.85	1.11	1.95
	<i>Robust</i>		
UK	1.71	2.08	3.07
Sweden	2.10	2.18	1.61
Canada	1.89	2.15	2.58
US	1.75	2.06	2.27

a/b ratio of the rich

	Top 10%	Top 5%	Top 1%
	<i>OLS</i>		
UK	1.73	1.58	1.40
Sweden	2.29	2.42	3.30
Canada	3.08	2.35	1.44
US	_____	9.97	2.05
	<i>Robust</i>		
UK	2.41	1.93	1.48
Sweden	1.91	1.85	2.64
Canada	2.12	1.87	1.63
US	2.33	1.94	1.79

Gini* of the rich

	Top 10%	Top 5%	Top 1%
		<i>OLS</i>	
UK	0.268	0.226	0.166
Sweden	0.392	0.416	0.535
Canada	0.509	0.402	0.179
US	—	0.818	0.344
		<i>Robust</i>	
UK	0.413	0.316	0.195
Sweden	0.313	0.298	0.450
Canada	0.360	0.303	0.240
US	0.400	0.321	0.282

Gini and Gini* of the rich (OLS)

	Top 10%	Top 5%	Top 1%
		<i>Gini*</i>	
UK	0.268	0.226	0.166
Sweden	0.392	0.416	0.535
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		<i>Gini</i>	
UK	0.260	0.223	0.157
Sweden	0.314	0.316	0.326
Canada	0.293	0.261	0.132
US	0.349	0.318	0.198

Gini and Gini* of the rich (Robust)

	Top 10%	Top 5%	Top 1%
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Modelling and inequality

- Two effects:
 1. the within-rich-group Gini
 2. the share of the rich group
- Econometric method will affect inequality estimates
 - simple Ordinary Least Squares
 - robust estimation (downweights outliers)
- But the effect depends on the nature of the data
 - which way does the tail “bend”?
 - does the estimated Pareto model produce a sensible answer?
- We’re remodelling the “top corner” of Lorenz curves
 - combines both effects 1 and 2

Gini breakdown, top 10% modelled OLS

	<i>Gini*</i>	<i>Share*</i>	<i>Gini*</i>	<i>Gini</i>	<i>Gini*</i>
	<i>overall</i>	<i>rich</i>	<i>rich</i>	<i>non-rich</i>	<i>between</i>
UK	0.664	0.453	0.268	0.607	0.353
Sweden	0.902	0.621	0.392	1.045	0.521
Canada	0.797	0.629	0.509	0.710	0.529

	<i>Gini</i>	<i>Share</i>	<i>Gini</i>	<i>Gini</i>	<i>Gini</i>
	<i>overall</i>	<i>rich</i>	<i>rich</i>	<i>non-rich</i>	<i>between</i>
UK	0.665	0.456	0.260	0.607	0.356
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Gini breakdown, top 10% modelled Rob

	<i>Gini*</i>	<i>Share*</i>	<i>Gini*</i>	<i>Gini</i>	<i>Gini*</i>
	<i>overall</i>	<i>rich</i>	<i>rich</i>	<i>non-rich</i>	<i>between</i>
UK	0.711	0.535	0.413	0.607	0.435
Sweden	0.893	0.577	0.313	1.045	0.477
Canada	0.752	0.539	0.360	0.710	0.439
US	0.792	0.614	0.400	0.779	0.514

	<i>Gini</i>	<i>Share</i>	<i>Gini</i>	<i>Gini</i>	<i>Gini</i>
	<i>overall</i>	<i>rich</i>	<i>rich</i>	<i>non-rich</i>	<i>between</i>
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Gini breakdown, top 5% modelled OLS

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	<i>overall</i>	<i>rich</i>	<i>rich</i>	<i>non-rich</i>	<i>between</i>
UK	0.663	0.298	0.226	0.618	0.248
Sweden	0.903	0.464	0.416	0.941	0.414
Canada	0.768	0.428	0.402	0.703	0.378
US	0.922	0.800	0.818	0.748	0.750

	<i>Gini</i>	<i>Share</i>	<i>Gini</i>	<i>Gini</i>	<i>Gini</i>
	<i>overall</i>	<i>rich</i>	<i>rich</i>	<i>non-rich</i>	<i>between</i>
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Gini breakdown, top 5% modelled Rob

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UK	0.683	0.341	0.316	0.618	0.291
Sweden	0.892	0.398	0.298	0.941	0.348
Canada	0.747	0.374	0.303	0.703	0.324
US	0.787	0.438	0.321	0.748	0.388

	<i>Gini</i>	<i>Share</i>	<i>Gini</i>	<i>Gini</i>	<i>Gini</i>
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Conclusions

- Three comparator countries
 - do they fit our preconceptions?
 - variety of wealth composition
- UK Net worth not as unequal as we might think?
- Conclusion fairly robust to choice of wealth variable
 - also true for total assets
 - but not for total financial assets
- Conclusion also robust to modelling the rich
 - Pareto model for top 10%, 5% 1%
 - OLS or robust methods