Presenting joint distributions of income and wealth

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Outline

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Introduction

- Examine the joint distribution of income and wealth in selected countries.

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- Use common definitions (limits number of countries) and comparative units.

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- Wealth and income clearly related, but possibly in quite different ways.
- May reveal interesting differences that could be related to institutional and sectoral differences across countries.

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LWS datasets analysed

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

Income and wealth variables

Variable	Symbol	LWS definition
Disposable income	dispincome $=$ grossincome $-$ taxes	lis_dpi
Gross income	grossincome	giw
Taxes	taxes	inctax $+$ contrib
Net worth	networth $=$ wealth $-$ debt	nw2
Wealth	wealth	tfa1 $+$ tnf2
Debt	debt	td

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- Express all money values in terms of international US dollars in 2002 prices – use domestic deflator and PPP for actual individual consumption.

Sample sizes and outliers

	Canada	Germany	Italy	Sweden	United States
Pre-shaving	15930	12692	7975	17953	4442
Post-shaving	14810	12108	7709	16846	3577
Difference	1120	584	266	1107	865

Pre-shave percentiles

			Percentiles		
Country	1	10	50	90	99
Income					
Canada	1826	9351	21307	41104	74271
Germany	2355	8915	18792	35664	68845
Italy	256	7143	16065	32476	65528
Sweden	3642	10540	18935	31455	52634
United States	345	7310	22029	53674	203430
Wealth					
Canada	−19446	−2921	27486	174641	832144
Germany	−31332	0	25187	235754	768699
Italy	−4611	543	84478	318035	1123966
Sweden	−51148	−11152	18447	145189	439580
United States	−27435	−3351	29267	325396	2777112

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1. Introduction

2. Data

3. **Descriptive results**

4. The multivariate distribution of wealth

5. Regression results

6. Concluding comments

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  - Bands of income related to median ($< 50\%$, $50\% - 100\%$, $100\% - 150\%$, $> 150\%$ of median).
  - Bivariate density estimates.

Density estimates: disposable income
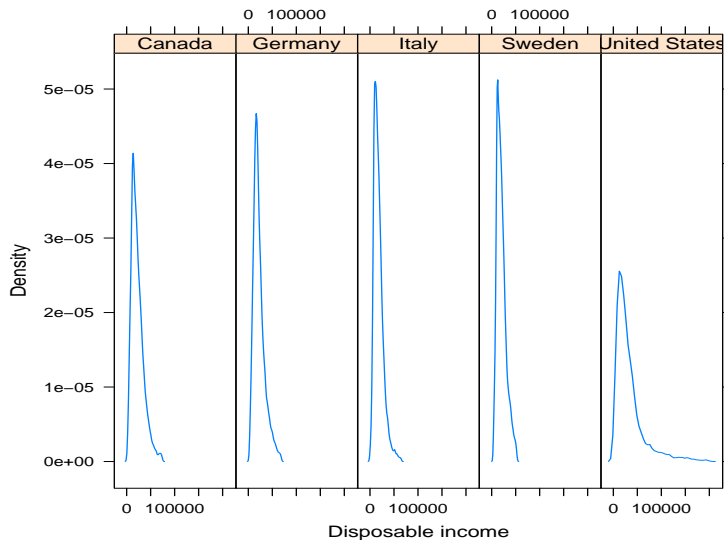
Density estimates: net worth
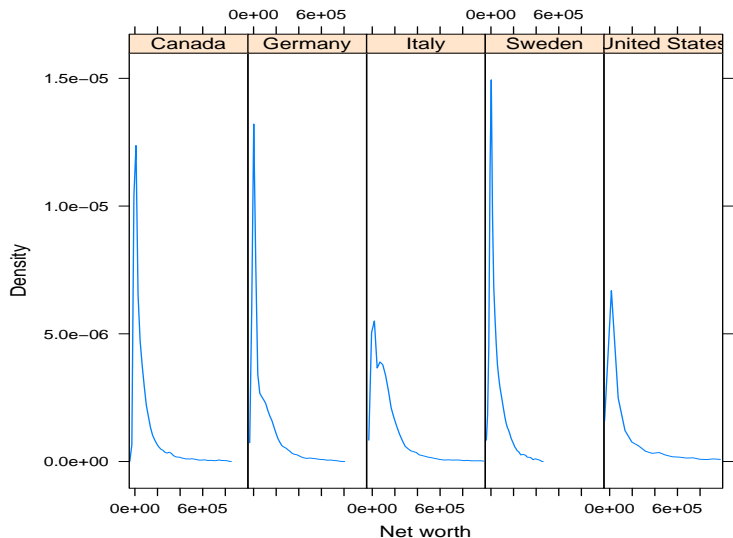
Outline

Income-wealth quartile groups
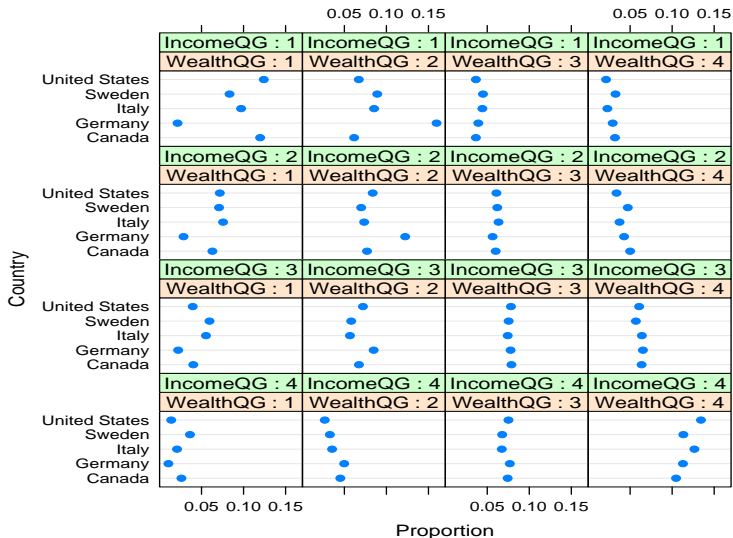
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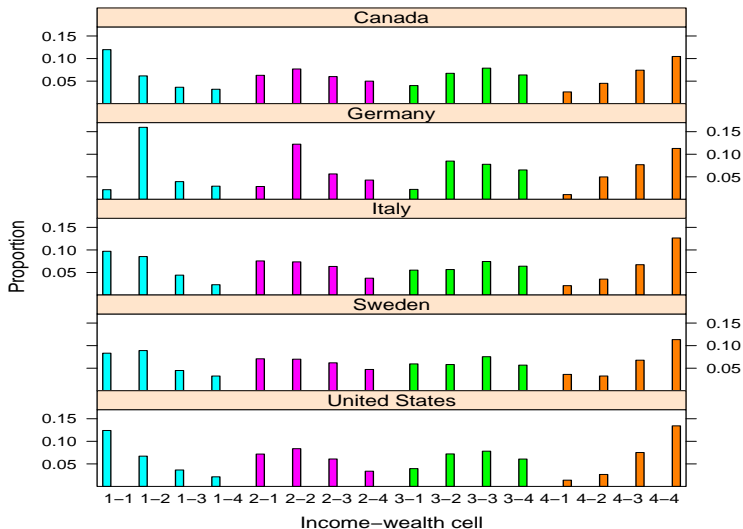
Income-wealth median-based groups
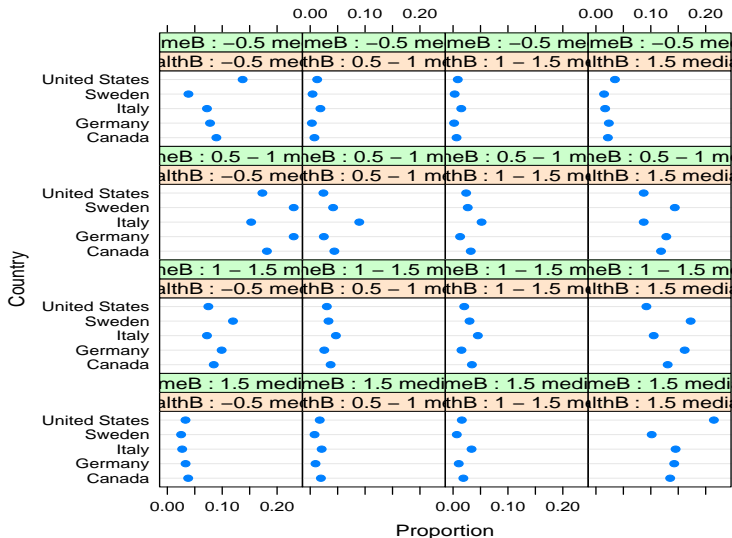
Joint distribution of income and net worth

Non-parametric density estimates: Canada
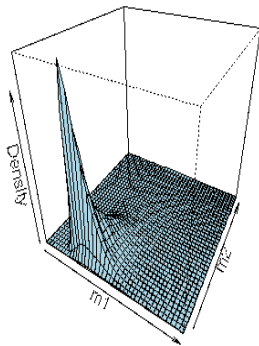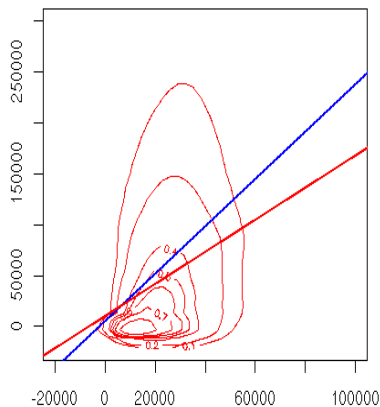
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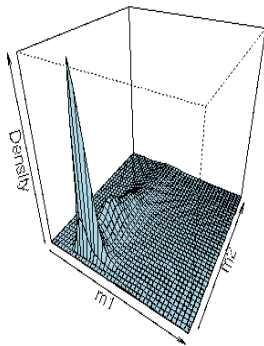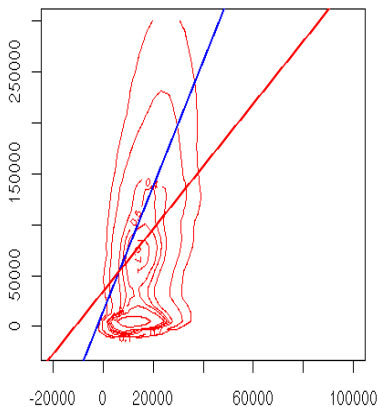
Non-parametric density estimates: Germany
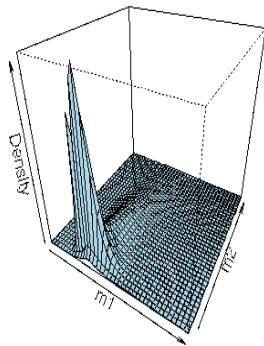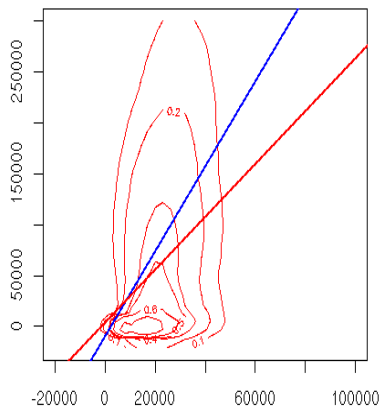
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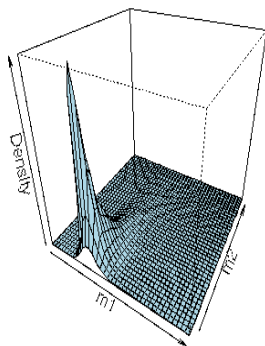
Non-parametric density estimates: Italy
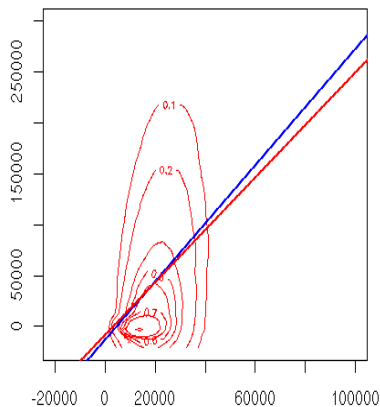
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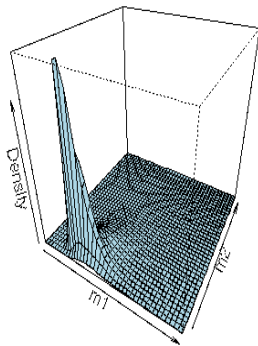
Non-parametric density estimates: Sweden
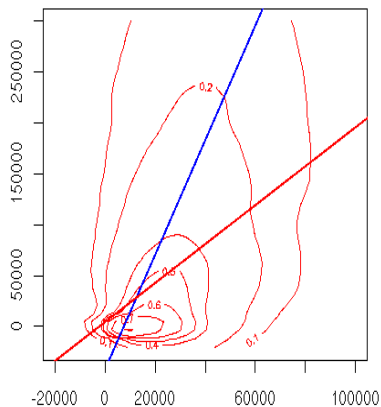
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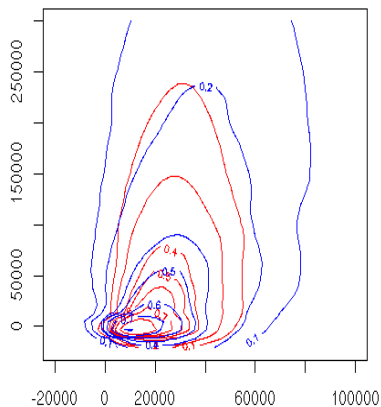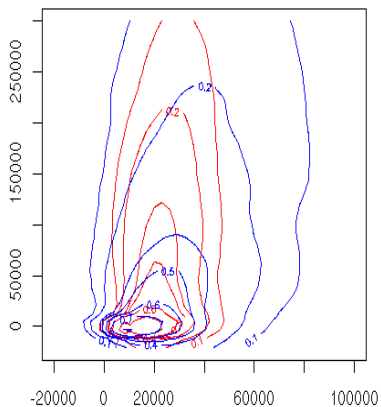
Non-parametric density estimates: United States

Joint distribution of income and wealth

Canada and Germany relative to the US

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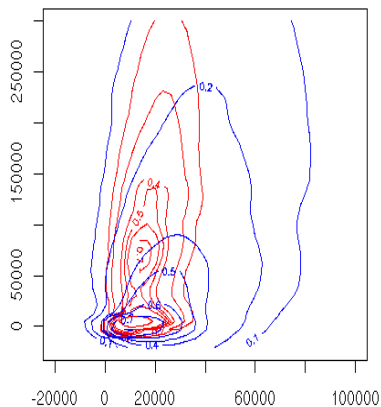
Italy and Sweden relative to the US

Outline

Bivariate regressions of income and wealth

- Simple bivariate regressions relate disposable income and net worth to selected covariates:

$$\text{dispincome} = f_{dpi}(\text{age, education, fam. struct}) + \epsilon_{dpi}$$
$$\text{networth} = f_{nw}(\text{age, education, fam. struct}) + \epsilon_{nw}$$
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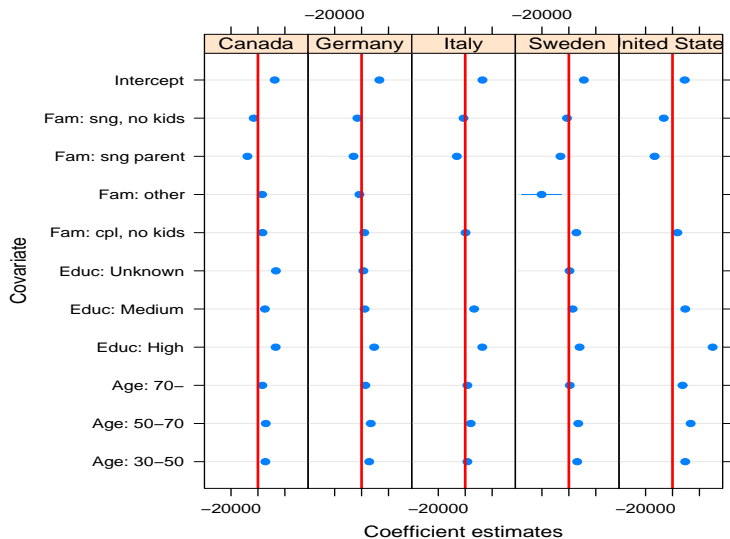 - Standard deviations $\sigma_{dpi}, \sigma_{nw}$
  - Correlation ρ
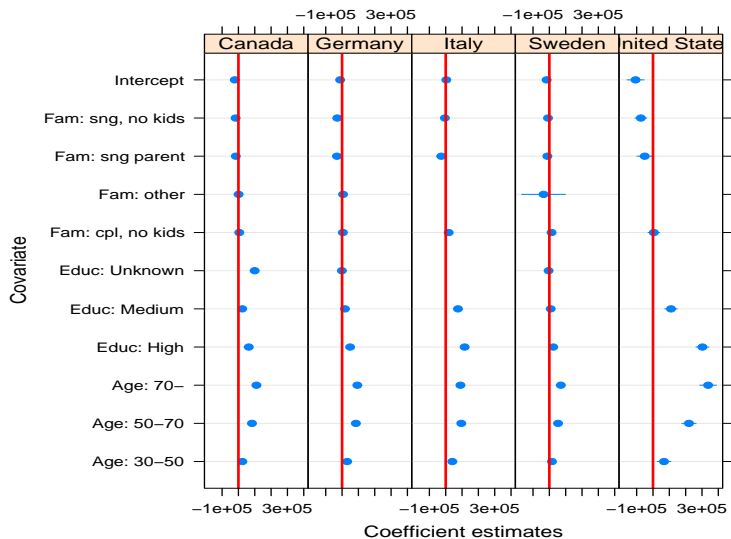
Regression results: share of variance explained
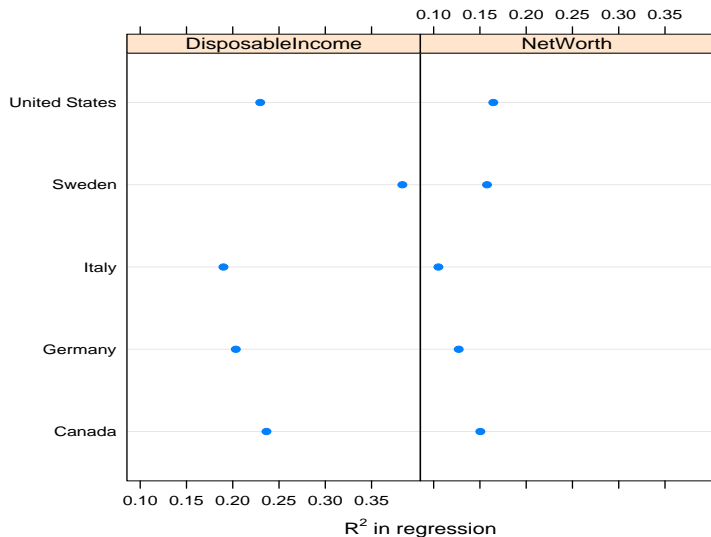
Regressions results: disposable income
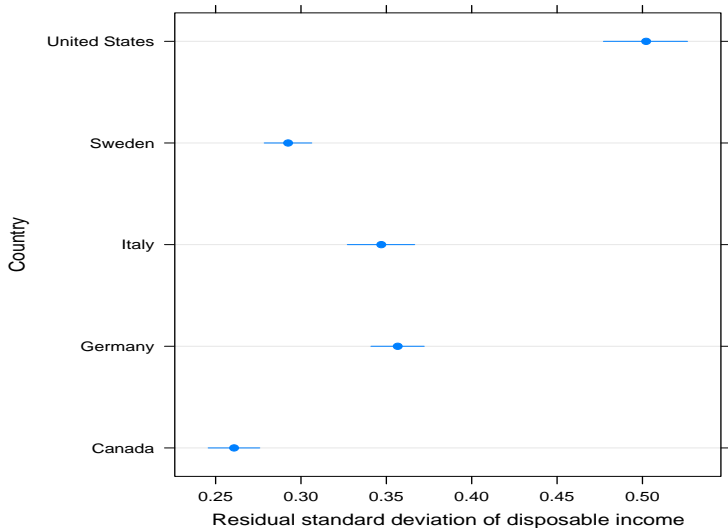
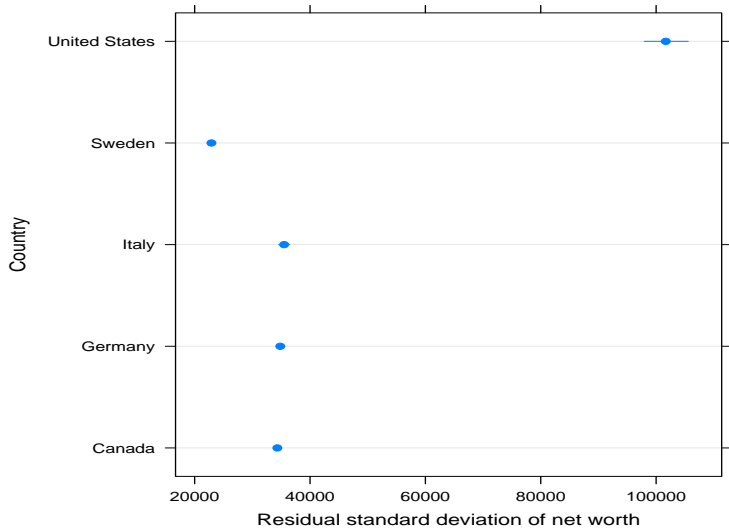Coefficient estimates and confidence intervals

Regressions results: net worth

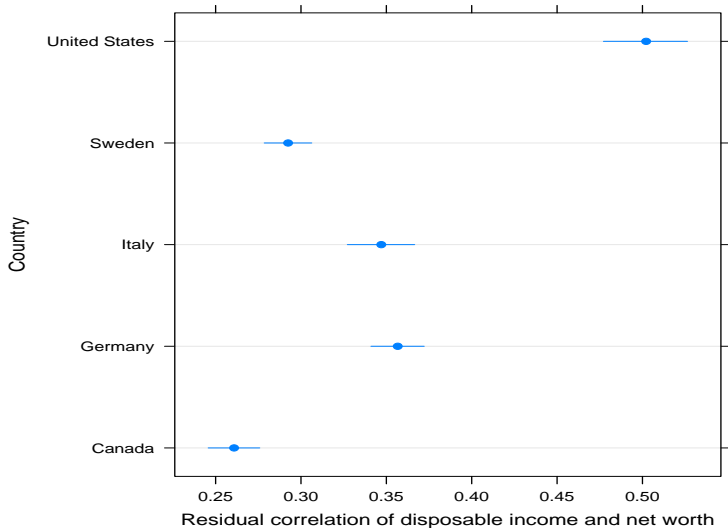# Residual standard deviation of disposable income

Regression residuals

Residual standard deviation of net worth

Regression residuals

Residual correlation of disposable income and net worth

Regression residuals

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- The association between income and wealth also greatest in the United States.