Material Deprivation in Household Panel Surveys: International Evidence and Lessons for Canada

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Material Deprivation Index

- Policy researchers have traditionally based their analysis of poverty on developments in low income

    - Poverty is a multidimensional concept encompassing a range of needs beyond basic income (Scott and Haggart, 2008)

    - Poverty measures using monetary metrics are also subject to measurement problems associated with incomplete measurement of income and taxes, and a strong transitory component in income (Corak, 2007)

Material Deprivation Index

- Several jurisdictions have been supplementing measures of low income with a "material deprivation index" which is intended to provide direct measurement of the experience of poverty

  - derived from 6 to 10 questions on whether respondents lack specific items deemed to be necessities, and whether this is due to a lack of resources (Department of Work and Pensions, 2003; Combat Poverty Agency, 2006, Whelan, 2007)

  - Can be combined with low-income measures to yield a more nuanced picture of poverty

Objectives of this study

1. Examine a Material Deprivation index using Canadian pilot survey data, shedding some light on the possible use of a material deprivation index in the Canadian context

2. Contribute to the literature on material deprivation (MD) measurement, which uses mostly cross sectional data, by adding empirical evidence on the relationship between MD and "permanent" family income using panel data from Britain, Germany and Australia

3. Discuss international differences in the indices which present a challenge for comparative international work

Data

- 6-questions from the 2008 Canadian Household Panel Survey Pilot (CHPS) were combined to create a Canadian MD index.

- For discussion of relationship between MD and permanent income we used British Household Panel Survey (BHPS), the Household, Labour and Income Dynamics in Australia Survey (HILDA) and the German Socio-Economic Panel Survey (GSOEP)

- Unweighted sample sizes (in its most recent wave) were 20,050 persons in the BHPS, 14,731 in HILDA, 18,321 in GSOEP and 3,498 in the CHPS.

Data: CHPS-questions

- **Do you and your family have fresh fruits and vegetables every day?** Is this because you cannot afford it or for some other reason?

- **Do you and your family have meat, fish or vegetarian equivalent every other day?** Is this because you cannot afford it or for some other reason?

- **Do you and your family have appropriate clothes for job interviews?** Is this because you cannot afford it or for some other reason?

- **Are you and your family able to get around either by having a car or by using a monthly bus, subway, or commuter train pass (or equivalent)?** Is this because you cannot afford it or for some other reason?

- **Are you and your family able to have friends or family over for a meal at least once per month?** Is this because you cannot afford it or for some other reason?

- **Are you and your family able to buy modest presents for family or friends at least once per year?** Is this because you cannot afford it or for some other reason?

- Families identifying 2 or more deprivations are deemed to be materially deprived

Data: Other countries

- The question sets posed in each country have some overlap with the Canadian question set, but...

  - there are no standard approaches for item selection;

  - question wording;

  - or even whether the items are asked in two-part or one-part formats.

- Materially deprived are defined as missing

  - 3 items from 10 using the BHPS,

  - 2 items from 7 using the HILDA,

  - 4 items from 10 using GSOEP.

  - The number of responses used to signal deprivation is not very important for the analysis presented in this paper.

Results 1: MD in Canada

Table 2 : Proportion of Persons, whose primary household respondent reported that they "*could not* afford" item, by item and age group, Canadian Household Panel Survey- Pilot (2008)

	percent
have fresh fruits or vegetables daily	5.7
meat, fish or vegetarian equivalent, every other day	2.4
appropriate clothes for job interviews	5.5
transportation	1.3
friends of family over for a meal, at least once a month	4.1
ability to buy presents for family at least once a year	4.5
2 or more items reported (on 6 item base)	5.9

Note: Proportions calculated from unweighted counts of persons from CHPS-Pilot Files

Table 3: Incidence of missing 2 or more items out of 6, by group

		percent
decile of AEA family income	lowest	15.6
	2	10.8
	3	6.9
	4	8.7
	5	5.8
	6	5.0
	7	2.9
	8	0.8
	9	0.8
	highest	1.6

Note: Proportions calculated from unweighted counts of persons from the 2008 CHPS-Pilot

Table 3: Incidence of missing 2 or more items out of 6, by group

		percent
age	less than 18	6.8
	18-64	6.2
	65 or more	3.3
family type	couple	4.3
	single	10.9
	lone parent	9.8
housing tenure	outright owner	1.2
	owner with mortgage	4.2
	renter or other	13.2
education	less than high school	8.1
	high school	7.3
	post-secondary below university	4.2
	university or higher	2.4
aboriginal person		10.2
immigrated between 1998 and 2008		11.9
in good health		3.4

Note: Proportions calculated from unweighted counts of persons from the 2008 CHPS-Pilot

Results 2: MD and "permanent income"

- A common prior of material deprivation literature is that material deprivation has less transitory variability that low income and might be more associated with deep or persistent low income.
  - Atkinson et al (2005) suggest that material deprivation indices might be a useful substitute for persistent low-income measures when longitudinal data is unavailable.

- Is the relationship seen between MD and family income is stronger when we examine proxies for permanent income?

- Because income has a strong transitory component, one might expect to see a higher concentration of materially deprived individuals at the lower deciles of long-term income, where long-term income is income averaged over 4 years.

Table 5: Proportion of persons, whose primary household respondent reported that they "could not afford" item, by household AEA-income decile in one year, and averaged over four years.

AEA household income decile	BHPS		HILDA		GSOEP	
	AEA income measured in 2005	AEA income averaged over 2002-2005	AEA income measured in 2006	AEA income averaged over years 2003-2006	AEA income measured in 2005	AEA income averaged over years 2002-2005
	3 or more items in 2005		2 or more items in 2006		4 or more items in 2005	
lowest income decile	13.2	15.9	21.0	21.1	48.8	47.2
2	10.9	13.5	15.4	16.1	20.4	20.2
3	9.5	5.6	11.4	12.6	10.4	10.4
4	6.2	7.1	12.6	16.4	5.0	7.2
5	4.0	3.4	10.9	9.2	5.4	7.3
6	4.0	4.4	10.4	7.3	4.8	4.2
7	3.3	1.7	5.0	3.9	4.1	3.0
8	0.8	0.8	2.5	4.1	1.5	1.3
9	1.3	0.1	3.3	2.7	1.5	1.6
highest income decile	0.3	0.9	1.5	0.7	0.1	0.3
all respondents						

Note: Proportions calculated from weighted counts of persons from British Household Panel Survey, Household, Income and Labour Income Dynamics in Australia and German Socioeconomic Panel files. Income is monthly income in GSOEP and annual income in HILDA and BHPS. Numbers of observations per decile equal approximately 1,700 for the BHPS, 1000 for HILDA and 1,400 for GSOEP.

Table 6: Proportion of persons, whose primary household respondent reported that they "could not afford" item, by household AEA-income decile in 2006, and net worth measured in 2006, HILDA

AEA monthly household income decile	AEA income measured in 2006	AEA net worth measured in 2006
	2 or more items reported	2 or more items reported
Lowest Income Decile	24.3	36.8
2	19.2	22.2
3	15.9	18.7
4	17.3	12.6
5	11.4	11.1
6	12.2	5.1
7	6.5	2.7
8	3.0	2.5
9	3.3	1.9
Highest Income Decile	2.8	2.1

Note: Calculated using weighted counts of persons from Household, Income and Labour Dynamics in Australia files for Year F, based on approx 1400 observations per decile

Results 3: Factors that inhibit international comparisons

1. no standardization in the questions used

2. large differences in incidence which would be hard to attribute to inter-country differences in hardship

   - Marked at the fifth decile of income, being unable to replace worn out furniture was 7% in the UK, but 24% in Germany and 26% in Canada

Results 3: Factors that inhibit international comparisons

3. selecting items for a MD index raises the question of what balance to strike between measuring social inclusion and deprivation of necessities

- European conceptual framework has centered on the concept of social inclusion rather than deprivation of necessities. This reflects broad political and social trends in Europe which recognize the importance of social inclusion as a goal (Atkinson *et al,* 2002).

- Questions in BHPS for example more reflect inclusion, or "not missing out"
    - e.g. questions on "Pay for a week's annual holiday away from home" or "Have friends or family for a drink"

- Questions used in HILDA relate more closely to "hardship" and "cash flow" issues (Bray, 2001).
    - e.g. questions on "Pawned or sold something". And "Asked for financial help from friends or family"

Conclusions

- As in other countries, MD questions used in the Canadian CHPS pilot are correlated with low-income, and other "at-risk" characteristics
  - May aid in the development of multidimensional poverty measures, or aid in the identification of groups at risk of deep or persistent poverty.

- Evidence on its association with "permanent" income was mixed
  - Was more highly associated with low permanent income than low point in time income in some, but not all cases examined.

- International comparisons are made difficult by differences in conceptual definition of material deprivation, whether related to (using Bray's (2001) typology):
  - "Missing out" on things most in society have or are seen to be necessities
  - "Cash flow problems"
  - "Hardship"