Low Income Dynamics and Its Characteristics in Canadian Society:

Some New Evidence

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Abstract

There are many ways by which we can characterize the Canadian society. The economic well-being is one critical aspect that all Canadians care about. In a fair and caring society, we are concerned about the well-being of Canadians who are economically deprived. In Canada, three unique key low income thresholds have been adopted by various scholars to identify low income individuals prior to 1999. However, we do not know much about the short-run and chronic low income cases in the Canadian society after 1999. In this study, we present new findings about short-run and chronic low income in Canada from 1999 to 2007 under the three low income thresholds. We find that about 94% low income Canadians are in short-run low income but only about 6% of them are in chronic low income. Short-run low income in Canada is generally associated with those who are going through life-cycle transitions (such as young individuals, attached individuals, and lone parents), while chronic low income in Canada is generally associated with those high risk groups (such as lone mothers, individuals with less than high school education, those with disabilities, visible minorities, and recent immigrants).

JEL Codes: I3, J1, C1

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Section 1.   Introduction

There are many ways by which we can characterize the Canadian society. This study examines the well-being of Canadians, in particular those who are economically deprived from 1999 to 2007.

In order to characterize those who are economically deprived, we often focus on poverty or low income. These social phenomena draw the attention from the general public, policy makers, international organizations, statistical agencies, and scholars across various disciplines such as economics, sociology, anthropology, health professionals, public administration, and social work.

Historically, there are two well-known enquiries about poverty or low income. One enquiry is on inequality. The influential figures include Karl Marx (1818-1883), who focused on the inequality of economic resources and therefore their outcome distribution, Max Weber (1864-1920), who viewed the inequality outcomes as the result of social class and economic structure, David Emile Durkheim (1858-1917), who used the functionalist view to social phenomena and problems including inequality, and Amartya Sen (1933-), who studied poverty and identified the social and economic factors causing poverty beyond the aggregate food supplies such as declining wages, unemployment, rising food prices, and poor food-distribution systems.

The other enquiry is on social exclusion and capacities approach to economic development. Social exclusion refers to the multi-dimensional process in which various forms of exclusion are presented. These include but not limited to participation in decision making and political process, access to employment and material resources, and

integration into common cultural processes (Madanipour, Cars, and Allen (1998)). Sen (1989) traces back the idea on capacities to Adam Smith (1723-1790) and Karl Marx (1818-1883) and relates the assessment of the quality of life to the assessment of capabilities to function in a multi-dimensional world. These inquiries give inequality and poverty a broader interpretation beyond the mere economic dimension.

The key issues we face in this discussion are the context and definition of necessities of life. The first issue is about the context. In the context of international experience and international development goals, identifying and eradicating poverty in the developing world is often the focus (United Nations, 1995). However, in the developed world, modern societies also face the similar challenge from within. For example, Canada is a nation in the developed world and has a high Gross National Product per capita. Majority of Canadians enjoy a high standard of living in the context of the global comparison. However, there are Canadians who are economically deprived. Therefore, we shall consider poverty in this different context.

Once we have determined the context, we can discuss the second issue about the definition of necessities of life. Conceptually, there are absolute and relative approaches to identify the poor in a given context. The absolute approach believes the necessities of life should include basic food, clothing, and shelter. One view is that this definition should be used for the developed countries such as Canada (see Sarlo, 2000). Another, and more accepted, view is that even the necessities of life can change over time across different contexts (Townsend, 1993).

According to the actual experience of one of the authors in a United Nations conference/workshop, even developing country officials find it hard to obtain a unique way to define necessities of life across countries. For example, some countries would include instant noodles (or cigarettes) as necessities of life, while others would not do so due to their local norms. Some countries in colder areas would count warm clothes as necessities of life, while others in tropical areas would not do so. Because of the differences among countries in identify necessities of life, it seems reasonable that when we study poverty or low income in a country, we use locally identified poverty lines or low income thresholds.

Although Statistics Canada never officially defines any poverty lines for Canada, it does use the low income cut offs (LICOs) together with other two low income thresholds. The identification of low income individuals in Canada primarily relies on where these individuals are placed in the income distribution. For a given low income threshold (LICOs or another threshold) for a particular year, if one's income in that year is below that threshold, this individual is considered a low income individual in that year. In addition to the identification of those who are in low income in one year, we can also identify who are in low income for a short period of time (1-3 years) and who are in low income for an extended period of time (4-6 years). We call the former short-run low income and the latter chronic low income. The existence of different low income durations reflects the low income dynamics in a society.

The empirical studies on the low income dynamics in Canada after 1999 are very limited. In the literature on Canadian low income dynamics, Morissette and Zhang (2001) provide insights to short-run and chronic low income incidences in Canada prior to 1998. Finnie

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and Sweetman (2003) also offer the Canadian findings on exit from or entry into low income prior to 1996. These two studies use different low income thresholds and focus on different aspects of low income dynamics based on the data prior to 1996 and 1998, respectively. We are particularly interested in finding out what had happened to the low income dynamics in Canada since 1999.

In the literature on low income dynamics in Canada, the existing studies (such as Morissette and Zhang (2001) and Finnie and Sweetman (2003)) often use a single low income threshold in their studies. Hence, each study typically provides evidence for short-run and chronic low income under one specific low income threshold. Rarely, multiple low income thresholds are used jointly to evaluate Canadian low income dynamics in the past. We are particularly interested in finding out if the new empirical findings of the low income dynamics in Canada after 1999 would differ under different low income thresholds.

In the broader literature on poverty or low income, there are studies adopting the relative approach to low income (e.g., Myles and Picot (2000), Morissette and Zhang (2001), Finnie and Sweetman (2003), Giles (2004), World Bank Institute (2005), and Ravallion (2010)). This relative approach emphasizes that the essential costs of living relative to a relevant community at a relevant time period are used to construct a low income threshold. Hence the low income thresholds established as such may change across communities over time. There are also studies adopting the absolute approach to low income (e.g., Sarlo (1996) and Pendakur (2001)). This absolute approach emphasizes that the essential costs of living (such as basic food, clothing, and shelter that are absolute essentials) are used to construct a low income threshold.

Ravallion et al. (1991) propose another interpretation of an absolute low income threshold. That is, among all countries, each country will have its relative low income threshold but there should be a bare minimum for all countries considered. This argument indicates that absolute low income could be benchmarked in a country or in the global context. However, Sen (1992, p. 115) argues that "[r]elative deprivation in the space of incomes can yield absolute deprivation in the space of capabilities." Hence, various low income thresholds are not completely compatible to each other and it is valuable to find out if our findings about low income dynamics is robust under different low income thresholds.

Therefore, in view of the existing knowledge gaps in the literature, we attempt to answer the following questions: What had happened to the well-being of the economically deprived Canadians since 1999? How short-run and chronic low income cases prevailed in the Canadian population after 1999? Would our empirical findings be robust under the different key low income thresholds? What are the major characteristics of those in short-run and chronic low income, respectively? Clearly, the answers to these questions are of interests to Canadian policy makers and the general public. This will add fresh evidence to the related Canadian literature.

In answering the above questions, we expect to shed light on the origins and implication of low income dynamics in Canada. Hence this research is of interest in a broader context. It is known that low income is a phenomenon caused by many factors. Grabb (2007) has succinctly summarized the broad categories of factors that causing inequality, which also affect the status of poverty or low income. According to Grabb (2007), means of power can be embedded in the control of material resources (production), human

resources (people), and ideas (knowledge) on class-related bases (ownership, wealth, income, education, and occupation) and non-class bases (gender, race, ethnicity, language, spatial location, age, religion, and party affiliation).

For any given state of inequality and hence low income in a society, the society will inevitably make social choices via social policy and infrastructure through political processes to mediate the role of the factors summarized by Grabb (2007). Rawls (1971) advocates that a progressive society should pay attention to those most deprived. Sawhill and Morton (2007) think that the social policy and infrastructure should create equal opportunities for intragenerational (within a generation) and intergenerational (across generations) economic mobility. Rawls (1971) and Isaacs (2007) emphasizes that the society should also create equal opportunities for those less privileged, who normally have no access to enough necessities in life. These less privileged people are often identified among the young, sick, disabled, less educated, unemployed, and/or older people in large proportions. In this essay, we are able to differentiate short-run low income from chronic low income and relate them to those identifiable factors that would affect inequality and low income.

While these factors summarized by Grabb (2007) are important, we need to find out the interaction between these factors and social policy in the dynamic sense. More specifically, we wish to know how these factors together with social policy affect low income dynamics in Canada.

In order to answer our research questions, we analyze the more recent Canadian Survey of Labour and Income Dynamics (SLID) data from 1999 to 2007 under the three key low

income thresholds, including the low income cut off (LICO), the low income measure (LIM) and the market basket measure (MBM). From the methodological point of view, MBM is established under the absolute approach to low income while LICO and LIM are established under the relative approach. In the following part of this essay, we will explain LICO, LIM, and MBM in detail. With more recent data and these key low income thresholds, we are able to provide robust empirical evidence on short-run and chronic low income in Canada after 1999.

Using both the more recent data and all key low income thresholds, we find that during the period of 1999-2007, among all Canadians who are ever in low income, about 94% are in short-run low income. These short-run low income situations are associated with individuals who are going through life cycle transitions: young people, students, unattached individuals, and lone parents are more likely in low income for a short period of time. In addition, a very small percentage (about 6%) of low income Canadians are in chronic low income during 1999-2007. These chronic low income cases are predominantly in the high risk groups: people with low educational attainment, people with disability, members of visible minorities, and recent immigrants. These findings are robust under all the three key low income thresholds and across Panels 3 (1999-2004) and 4 (2002-2007) of the SLID data. This study provides the new empirical evidence on the low income dynamics in Canada and the socio-demographic factors affecting the dynamics.

In the following section, we discuss our target population, calculations of individual incomes based on household surveys, and determination of low income given low income thresholds.

2. Basic Statistics of the Target Population

Because Canadians' economic well-being is changing with the boom and bust of the economy, there is a need for a better understanding of what had happened in Canada since 1999. In this study, we focus on the SLID Panel 3 for 1999-2004 and the SLID Panel 4 for 2002-2007. Each panel traces the survey respondents for six years.[1] This wonderful feature allows us to see how low income situations for Canadians persist over time in each panel. It also enables us to observe the changes of low income dynamics over a more extended period of time.

The target population refers to Canadians who are 16 and older over the 6-year period in each SLID panel. We study this adult population primarily because we wish to focus on those (potential) income earners. The income earners who have children will be considered for their family composition. We also recognize that family incomes may be shared among family members including their children. But we do not include children as the members of our target population when studying low income dynamics.

In this study, we are interested in the low income dynamics of Canadians. For example, we wish to find out how low income situations are related to the characteristics of individuals (age, gender, education, family composition, and so on). In the SLID data, incomes and low income thresholds are reported at the level of families but individual characteristics are reported at the level of individuals.[2] Therefore, we need to identify the low income status for individuals and then relate the low income incidence and persistence of these individuals to their individual characteristics. In this essay, the unit of analysis is therefore at the level of individuals but not families.

When we evaluate incomes across families, we will encounter a problem to compare families with different sizes and with different age compositions. In order to make sure that the evaluation is fair, we must adjust family income to reflect the true purchasing power that each member in the family has. Generally, the more (less) people there are in a family, the less (more) per capita income is available for and is required by each member of that family to maintain a comparable standard of living. This is because of more sharing and greater scale of economy in larger families. In other words, in a larger (smaller) family, the same income per capita may produce more (less) goods and service on greater (smaller) scale of economy. Hence, we need to convert family incomes into individual incomes that are truly comparable in terms of purchasing power. We need an equivalent scale for our study.

There are various plausible equivalent scales, all of which reflect the fact that members in larger families and younger members within a family need less per capita income to maintain a similar standard of living than an individual adult who lives alone would need.

One potential equivalent scale is the square root scale. For example, when we distribute the family income of four people among them, the family income is divided by an adjusted family size, which is two ($\sqrt{4} = 2$), instead of four. That is, we give each family member the half of the total family income to reach the individual adult equivalent income for this family of four. Because of the family has four people, their family income has a purchasing power equivalent to four times of the individual adult equivalent income. We call this family purchasing power the adjusted family income. This scale only counts family size.

Another equivalent scale is the scale considering both family size and family members'

age. The scale used in LIM allocates 1.0 to the oldest person in the family, 0.4 to the

second oldest person, 0.4 for each additional adult, and 0.3 for each additional child. The

first example based on this scale is a family of two adults and two children. This family is

assigned an age-adjusted family size equivalent to twice $(1.0 + 0.4 + 0.3 + 0.3 = 2.0)$ the

size of a family consisting of a single adult. The second example based on this scale is a

family of four adults. This family is assigned an age-adjusted family size equivalent to

2.2 times $(1.0 + 0.4 + 0.4 + 0.4 = 2.2)$ the size of a family consisting of a single adult.

The individual adult equivalent income can be calculated by dividing the family income

by the age-adjusted family size. In the first example, the total income of the family with

two adults and two children has a purchasing power equivalent to four times of the

individual adult equivalent income. We call this family purchasing power the adjusted

family income. This scale counts both family size and family members' ages.

There are two equivalent ways of identifying low income. Either we compare individual

adult equivalent incomes with corresponding low income thresholds for individuals or we

compare adjusted family incomes with corresponding low income thresholds for families.

In this research, the individual adult equivalent income is calculated by dividing the

family[3] income by the age-adjusted family size. The adjusted family income is calculated

by multiplying the individual adult equivalent income by the family size. When the

adjusted family incomes are compared across families or individual adult equivalent

incomes are compared across individuals, the scale of economy has already been taken

into consideration.

Now we turn to the basic statistics of our SLID data. For Panel 3 (1999-2004), the Canadian population aged 16 and older are about 18 million at the beginning of 1999. Among them, 51.4% are women and 48.6% are men. Immigrants account for about 18% of this population and over 9% belong to members of visible minorities. In the beginning year of 1999 for Panel 3, around one quarter of the population fall under the age group of 35-44 years old, more than 10% are 65 and above, three quarters receive at least high school diplomas, about 15% are students, and 18% have some form of disability. In terms of family composition, families headed by lone parents represent 5% of the population. The proportion of unattached individuals remains stable at 16% over time. The proportion of the attached individuals with child(ren) decreases from almost 42% in 1999 to about 34% in 2004. The attached individuals without child(ren) steadily increase their share from about 23% to more than 27% during the 6-year period.

For Panel 4 (2002-2007), the Canadian population aged 16 and over are about 19 million at the beginning of 2002 for Panel 4. Among them, 51.1% are women and 48.9% are men. Immigrants account for almost 20% of this population in Panel 4, up from 18% from Panel 3. More than 12% belong to members of visible minorities in Panel 4 whereas about 9% belong to members of this group in Panel 3. In the beginning year of 2002, more than one fifth of the population fall under the age group of 35-44, more than 12% are aged 65 and above. In the previous Panel 3, the age group of 35-44 accounts for about a quarter of the population and the group aged 65 and above accounts for around 10%. This indicates that Canadian society is aging. In Panel 4, around 80% receive at least high school diplomas, higher than that in Panel 3. In Panel 4, about 15% are students, and 23% have some form of disability. More people in Panel 4 have some form

of disability. In terms of family composition, families headed by lone parents represent 5% of the population in Panel 4 and there is no change from that in Panel 3. The unattached individuals and the attached individuals without child(ren) steadily increase their shares from about 14% to almost 17%, and from about 24% to almost 28%, respectively. The proportion of the attached individuals with child(ren) decreases from almost 41% in 2002 to almost 33% in 2007 during the 6-year period.

Although the target populations in these two panels overlap in time by three years, we examine them to see both low income dynamics in one panel as well as across panels.

In the following section, we detail the three key low income thresholds used in Canada and our key findings about low income dynamics.

3. Low Income Thresholds and Key Characteristics of Low Income Dynamics

3.1 Low Income Thresholds

As it is indicated in the introduction, we attempt to draw robust inferences on how low income persists in Canadian society under the three key low income thresholds. It is essential to explain these low income thresholds including their origin and construction.

The first key low income threshold is the after-tax low income cut off (LICO). This threshold is established, by Statistics Canada, as the after-tax income of a family that spends 20 percentage points more of its after-tax income on necessities (e.g. food, shelter, and clothing) than the average family of a similar size. Separate LICOs are defined for seven family sizes - from unattached individuals to families of seven or more persons -

and for five specific sizes of community – ranging from rural areas to urban areas with population more than 500,000.

The second key low income threshold is the after-tax low income measure (LIM). This threshold is defined as a fixed percentage (50%) of the median adjusted after-tax family income.[4] The adjusted after-tax family income refers to the after-tax family income adjusted for size using the equivalent scale. By design, LIM is not adjusted for differences in size of community but it is automatically adjusted each year for any change in the median adjusted family income.[5]

The third key low income threshold is the after-tax market basket measure (MBM). This threshold is established, by Statistics Canada on behalf of Human Resources and Skills Development Canada (HRSDC), as the total cost of a basket of necessary goods and services including food, shelter, clothing and transportation, and a multiplier to cover other essentials for a family.[6] MBMs are established for families in different communities in different provinces. The after-tax family incomes related to MBM cut-offs are narrower than the after-tax family incomes related to the after-tax LICO and/or LIM. This is because the former further excludes from total family income other non-discretionary expenses such as support payments, work-related childcare costs, transportation costs, and employee contributions to pension plans and to the Employment Insurance.[7]

If an individual adult equivalent income is less than his/her corresponding low income threshold (individual adult equivalent LICOs, LIMs, or MBMs, respectively), s/he is considered to be in low income. Because different low income thresholds may lead to different identification of low income individuals, there is a need for using multiple low

income thresholds to examine low income dynamics, so more robust inferences can be made. We use multiple low income thresholds in this study. This study is unique in the existing Canadian literature.

3.2 Key Characteristics of Low Income Dynamics

When we identify low income Canadians using panel data, we are able to identify how long a person suffers from low income over the six year period.

While the distinction between short-run low income and chronic low income is probably well understood, there can be many interpretations at the operational level. Borrooah and Creedy (2002) consider one year in poverty as temporary poverty and two years in poverty as permanent poverty. Hulme et al. (2001, 2003) use more refined grades of poverty duration such as (1) a "chronically poor" person refers to an individual whose income is lower than the low income threshold in all five years or in four out of five years and (2) a "transitorily poor" person refers to an individual whose income fluctuates around the low income threshold over time or whose income falls below the low income threshold in any one of five years.

In empirical research, the period of an individual's life span covered by the survey data often dictates how chronic low income can be best measured. If one follows a cohort for only six years in a household survey panel as we do in this essay, then the maximal duration in low income would be limited to only six years.

Censoring and truncation, the natural limitations resulting from such data collection, will inevitably occur. When low income starts before the first survey year but we can only observe the low income duration as if it starts from the first survey year in our data, we call this left censoring. When low income persists beyond the last survey year in our data but we cannot observe when this low income spell will actually end, we call this right censoring. The truncation at the annual data level will occur if an annual income is higher than a suitably chosen annual low income threshold but some monthly incomes are

actually below the monthly low income threshold that corresponds proportionally the annual low income threshold.

To minimize challenges from censoring, we shall use the longest longitudinal data possible. Even if we do so, there is no guarantee that we can avoid data censoring and truncation completely. Annual surveys are inherently incapable of capturing brief low income spells within a year.

In our work, we name the 1-3 years of low income out of 6 years as short-run low income and the 4-6 years of low income out of 6 years as chronic low income. This is of course a judgement call but it is quite reasonable for our purpose and the data.

In the following, we examine the key non-class based characteristics of low income dynamics (such as gender, age, family composition, education, disability, visible minorities, and immigrants) under the three low income thresholds (LICO, LIM, and MBM) in Canada during the period of 1999-2007.

- Gender

As shown in Figure 1, more women than men are in low income for various durations during the periods of 1999-2004 and 2002-2007 (Panels 3 and 4), regardless which low income threshold is used. More specifically, in Panels 3 and 4, about 12-14% of men are in short-run low income but about 15-17% of women are in short-run low income. About 4-5% of men are in chronic low income but about 6% or more of women are in chronic low income. Among three thresholds, MBM appears to be more inclusive than LICO and LIM. As shown in Figure 1, generally more women than men are in both short-run and chronic low income during the two periods regardless which low income threshold is adopted.

Figure 1 about here

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- Age

In 1999-2004 and 2002-2007 (Panels 3 and 4), we note the remarkable patterns of life cycle transitions in low income dynamics. While the majority of the total target population are never in low income, young people, students, unattached individuals and lone parents are more likely in low income for a short period of time. This reflects their life cycle transitions.

We find that the low income status of an individual is often associated with the stages of his/her life cycle transitions. Now we discuss our findings of these transitions:

First, as shown in Figure 2, young people aged 16-24 have the highest percentage (more than 25%) of being in short-run low income (for 1-3 years) under all three low income thresholds for both Panels 3 and 4. Seniors (aged 65 and over) have the lowest percentage (less than 10%) of being in short-run low income. The short-run low income incidence reduces remarkably for individuals aged from 25 to 54 (for cohorts aged 25-34, 35-44, and 45-54). Our interpretation is that young people aged 16-24 in general either have low paid part-time jobs and/or go to school and hence they tend to have low incomes. The low income incidence reduces as these young individuals graduate from school and get better paid jobs. The senior citizens aged 65 and over in Canada are much better off than members of other age groups due to a combination of life time savings, pensions, and the relevant social policies (such as Old Age Security (OAS) and Guaranteed Income Supplement (GIS)).

Figure 2 about here

Second, among all age groups, those aged 25-34 and 55-64 ranked high in short-run low income incidence, after those aged 16-24. But the 55-64 age group also has the highest chronic low income incidence (for 4-6 years). This evidence indicates that the 55-64 age group can be vulnerable in the labour market as well as in health conditions and marriage situations. This finding is unexpected. This raises an interesting question about the anxiety that may exist for those who approach retirement.

Third, senior Canadians are much better off than other age groups due to relevant social policies, such as Old Age Security (OAS) and Guaranteed Income Supplement (GIS). As shown in Figure 2, seniors (aged 65 or older) have both the lowest short-run and chronic low income incidences. The short-run low income incidence for this age group is lower than 10% and the chronic low income incidence is lower than 5%.[8]

- Family composition

In addition to age, experiencing changes in family composition is probably another key factor for life transitions. Family structures can be changed from singletons to attached and/or other forms of families (e.g., lone parents and extended families) or the other way around. Families can have a couple with or without children. Some families may only have a lone parent and a child or a number of children. Lone parent families can be headed by a lone father or mother. Some senior citizens may also in a one-person family because of loss of their spouses or because of separation.

First, as shown in Figure 3 – A, unattached individuals have both higher short-run and chronic low income incidences (higher than 15%) regardless which low income threshold is used. As we may recall, unattached individuals will need more incomes per capita to

maintain a similar standard of living among those who share and enjoy greater scale of economy. If unattached individuals do not have enough incomes, they are more likely to be in low income over time as they cannot pool incomes with others.

Figure 3 – A about here

Second, lone parents have children who do not bring in incomes. Lone parents are sole breadwinners for their families and must share their incomes with other family members. When these lone parents have insufficient incomes, they are more likely to be in low income over time. Hence they tend to have a much higher short-run low income incidence (higher than 25%) as well as a chronic low income incidence (higher than 15%).

Third, as shown in Figure 3 – B, families headed by lone mothers have an even higher chronic low income incidence (more than 15-20%) compared to families headed by lone fathers (about 5%) while their short-run low income incidence is at least as high as that for families headed by lone fathers. This finding is not surprising. It is known that women in general have less incomes than their male counterparts in the labour market. Lone mothers may have to give up work for childcare. Even with limited incomes, they must spread out these incomes among themselves and their children. They are more likely to be in low income over time.

Figure 3 – B about here

- Education, Disability, Visible Minorities, and Immigrants

In addition to low incomes related to the life cycle phenomena (age structure and family composition), we are also interested in learning more about chronic low income and the

socio-demographic factors associated with chronic low income situations. In addition to women and lone mothers who are more likely to be in chronic low income, we also find other identifiable characteristics of individuals that are associated with chronic low income. We find that chronic low income situations are more pronounced in some groups such as those with less than high school education, individuals with disability, members of visible minorities, and recent immigrants regardless of their age, gender, and family structures.[9] We examine the characteristics for the high-risk groups as follows.

First, we look at those with less than high school education. As shown in Figure 4 – A, during the period of 1999-2004, there are more than 8% of the individuals with less than high school education in chronic low income (4-6 years in low income) under all three low income thresholds. In the same period, there are only 3-4% of those with university education in chronic low income under all three low income thresholds. During the period of 2002-2007, there are more than 8% of those with less than high school education in chronic low income under both LICO and LIM, while this percentage is just below 8% under MBM during the same period.[10] In the same period, there are only 2-3% of those with university education in chronic low income under all three low income thresholds. Clearly, education plays a significant role in increasing human capital and in ensuring employment. In a more competitive global market, education will not only alleviate low income for individuals but also increase the competitiveness for Canada.

Figure 4 – A about here

Second, we examine the group of individuals with disability. During the period of 1999-2004, there are more than 16% of those with disability in chronic low income under all

three low income thresholds while only less than 4% of those without any disability in chronic low income under all three low income thresholds. During the period of 2002-2007, there are about 14% of those with disability in chronic low income under all low income thresholds while only about 3% for those without disability in chronic low income (see Figure 4 – B).[11] Relative to the case where individuals have less than high school education, disability appears to be a very significant factor for the high incidence of chronic low income. This is because long-term disability may prevent people from participating actively in the labour market. These individuals tend to have low income for extended periods of time.

Figure 4 – B about here

Third, we focus on visible minorities. During the period of 1999-2004, there are more than 10% of the members of visible minorities in chronic low income under all three low income thresholds while less than 6% of the people who do not belong to these minority groups in chronic low income. During the period of 2002-2007, there are 8-11% of the members of visible minorities in chronic low income under all three low income thresholds while only about 5% of the people who do not belong to these minority groups in chronic low income (see Figure 4 – C).[12] It seems that members of visible minorities are more exposed to chronic low income.

Figure 4 – C about here

Finally, we examine chronic low income among recent immigrants. During the period of 1999-2004, there are more than 11% of the recent immigrants (who moved to Canada after 1986) in chronic low income under all three low income thresholds while only less

than 6% of the native-born Canadians in chronic low income. During the period of 2002-2007, there are more than 9% of the recent immigrants (who moved to Canada after 1989) in chronic low income under all three low income thresholds while around 5% of the native-born Canadians in chronic low income (see Figure 4 – D).[13] Those recent immigrants need to take more time in adapting to their new home country in terms of language, social network, and local job skills. Before they are fully integrated into the main stream society, they may have low incomes for extended periods of time and more likely to suffer from chronic low income.

Figure 4 – D about here

Among the above high risk groups, people with disabilities have the highest chronic low income incidence. This is followed by recent immigrants, members of visible minorities, and individuals with less than high school education.

As shown in this study, the key characteristics of low income dynamics (such as age, gender, family composition, education, disability, visible minorities, and immigrants) are important markers of short-run and chronic low income. The younger age groups are more likely in short-run low income. Lone mother, people with disability, those with less than high school education, recent immigrants and members of visible minorities are more likely to be in chronic low income.

4. Concluding Remarks

In this essay, we study the low income dynamics in Canada under different low income thresholds to provide new evidence based on more recent data. The data we use in this study are Panels 3 and 4 of the Canadian SLID data from 1999 to 2007.

There are four defining features in this study. First, the existing literature only examines the data up to 1999. This study is designed to provide the new empirical evidence on low income dynamics in Canada from 1999 and onwards. Second, the previous studies typically use one low income threshold or another, which may lead to somewhat different identification of low income individuals for Canada. This study uses all the three key low income thresholds - LICO, LIM and MBM - to obtain robust empirical evidence to update the Canadian literature on low income. Third, in order to ensure comparability of individual incomes across different households under different low income thresholds, we adopt the individual adult equivalent scale to translate regular family incomes into individual equivalent incomes and adjusted family incomes. Fourth, this study uses the Canadian panel data rather than annual cross-sectional data to identify short-run and chronic low income and relate this low income dynamics to socio-economic and demographic characteristics of individual Canadians. This connection is of particular interest as we wish to identify the prominent social-economic and demographic characteristics of individuals that often associate with various forms of low income.

With these defining features, this study shows the following new findings about the Canadian society:

First, for many Canadians, short-run low income is often associated with life cycle transitions (from 1 to 3 years), while chronic low income (from 4 to 6 years) is often associated with those in the high risk groups. Second, in short-run low income situations, remarkable patterns of life cycle transitions appear among young people, students, unattached individuals, and lone parents are more likely in low income for a short period of time. Third, a very small percentage of the total population suffer from chronic low income. They are lone mothers, individuals with disability, individuals with less than high school education, members of visible minorities, and recent immigrants. These findings are prevalent under all the three low income thresholds and are robust across Panels 3 and 4 of the SLID data.

One can only get the snapshot view of the low income profile if annual cross-sectional data is used. With the new panel data, we are able to identify how persistent low income situations are and how different low income cases are associated with socio-economic and demographic factors of individuals. We are able to differentiate life cycle transitions (related to short-run low income) from high risk groups (related to chronic low income). Clearly, if short-run low income were not dealt with by a good policy, it might result in chronic low income although chronic low income may require more targeted policy measures. This study provides new and essential information for the policy makers and Canadians.

Notes:

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[1] Hulme et al. (2001) and (2003) focus on the five-year span because this is a sufficiently long period. Duncan et al. (1993) use the Longitudinal Administrative Database (LAD)

panel for the period of 1982-1986 (five years). Finnie and Sweetman (2003) use the LAD panel for the period of 1992-1996 (five years). Morissette and Zhang (2001) use the SLID panel for the period of 1993-1998 (six years).

[2] But some family characteristics are also individual characteristics. For example, a lone mother is a personal characteristic of the mother and it is also a family characteristic of a lone mother family.

[3] There are two definitions on the concept of family in the SLID, namely economic families and census families. An economic family is defined as a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law, or adoption. The term "census family" corresponds to what is commonly referred to as a "nuclear family" or "immediate family". In general, it consists of a married couple or common-law couple with or without children, or a lone-parent with a child or children. The corresponding definitions on different types of families can be found in the website of Statistics Canada:

http://www.statcan.gc.ca/concepts/definitions/fam-eng.htm, retrieved on May 18, 2010.

[4] We can also discuss the matter on the basis of equivalent individual incomes. The adjusted family income is the sum of equivalent individual incomes of the family members.

[5] For different LIMs, see Murphy et al. (2010).

[6] The cost of the goods and services used in MBM is calculated for a reference family of two adults aged 25-49 with two children, a boy aged 13 and a girl aged 9. The costs for all other household configurations are then calculated using the LIM equivalence scale.

[7] MBM is more sensitive than LICO or LIM to the significant geographical variations (both among and within provinces) in the cost (especially for shelter and transportation) of many typical items of expenditure. It should be noted that the conceptual framework of MBM was developed and adopted by HRSDC and Statistics Canada in 2000. Therefore MBM is not directly available for 1999 or earlier. To enable our analysis on low income dynamics across different choices of low income thresholds, we impute MBM for 1999 by converting the MBM in 2000 (using MBM 2007 Basket) with the Consumer Price Index (CPI). Therefore, we shall use caution when interpreting the results under MBM in 1999.

[8] This shows a successful story of the social policy on senior citizens such as the Old Age Security (OAS) and Guaranteed Income Supplement (GIS) in Canada.

[9] In Panel 3, recent immigrants refer to those who landed in Canada after 1986; whereas in Panel 4, recent immigrants refer to those who landed in Canada after 1989. Our findings in this paper are consistent with the literature. See, for example, Morissette and Zhang (2001), HRSDC research paper (2009), and Valletta (2005).

[10] The theory of human capital can be traced back to Becker (1964) and Schultz (1971).

[11] The above findings are consistent with the earlier findings in the literature. See, for example, HRSDC (2006).

[12] The above findings are consistent with the earlier findings in the literature. See, for example, Statistics Canada (2001) and Samuel and Basavarajappa (2006).

[13] The data again echo with the recent empirical findings on the Canadian immigrant population. See, for example, Picot and Hou (2003, 2007).

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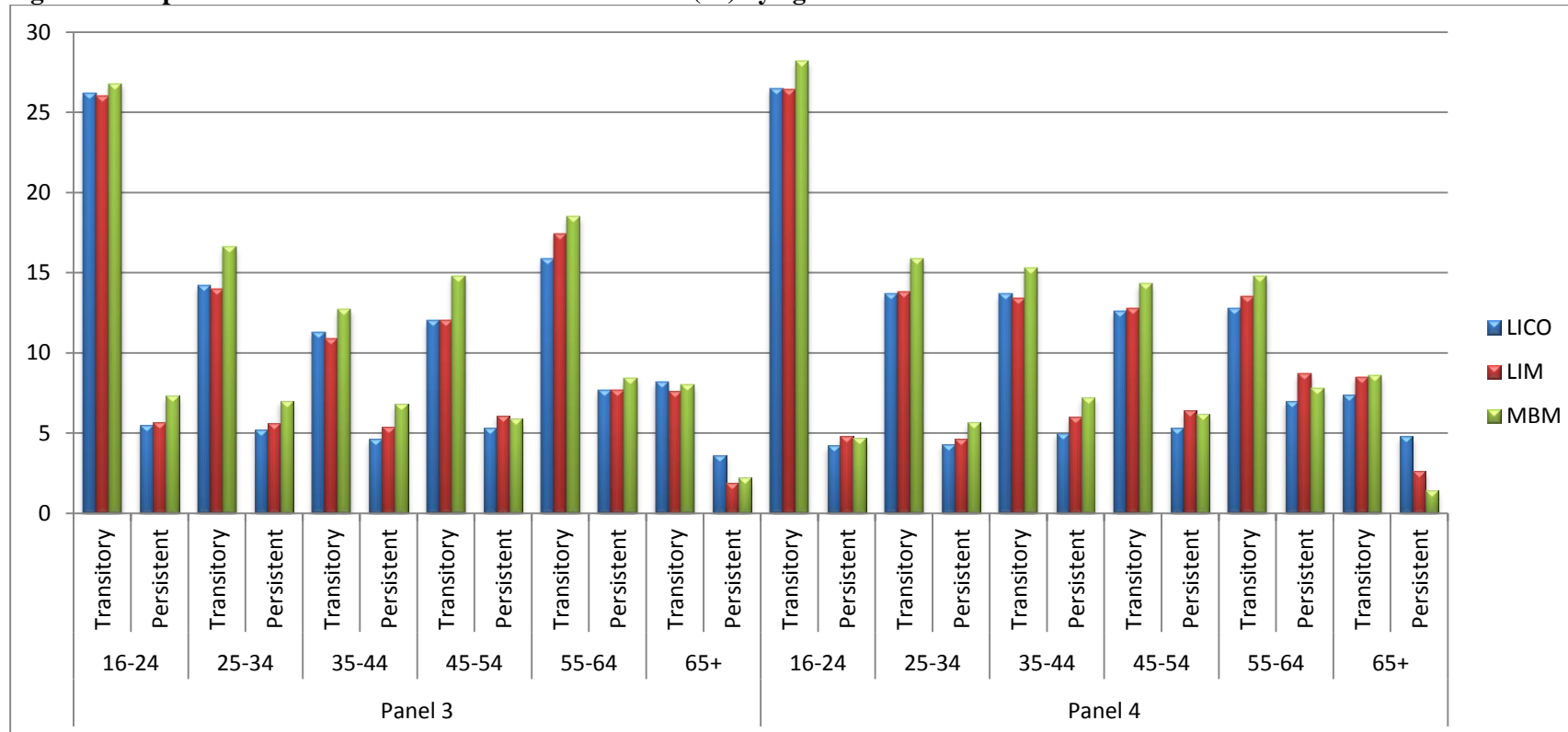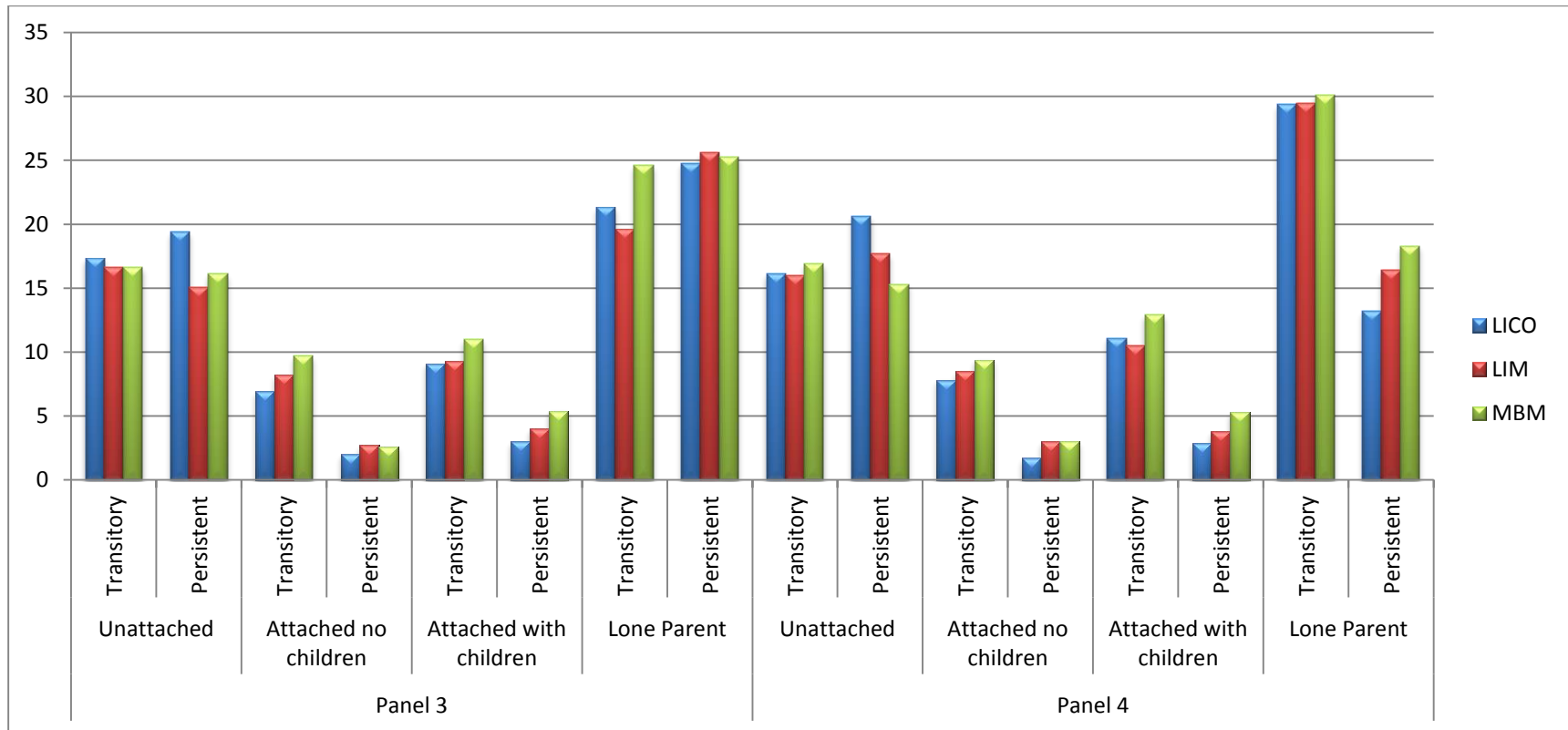
Figures

Figure 1: Proportions of short-run and chronic low income for men and women (%) under the three low income thresholds: 1999-2004 and 2002-2007
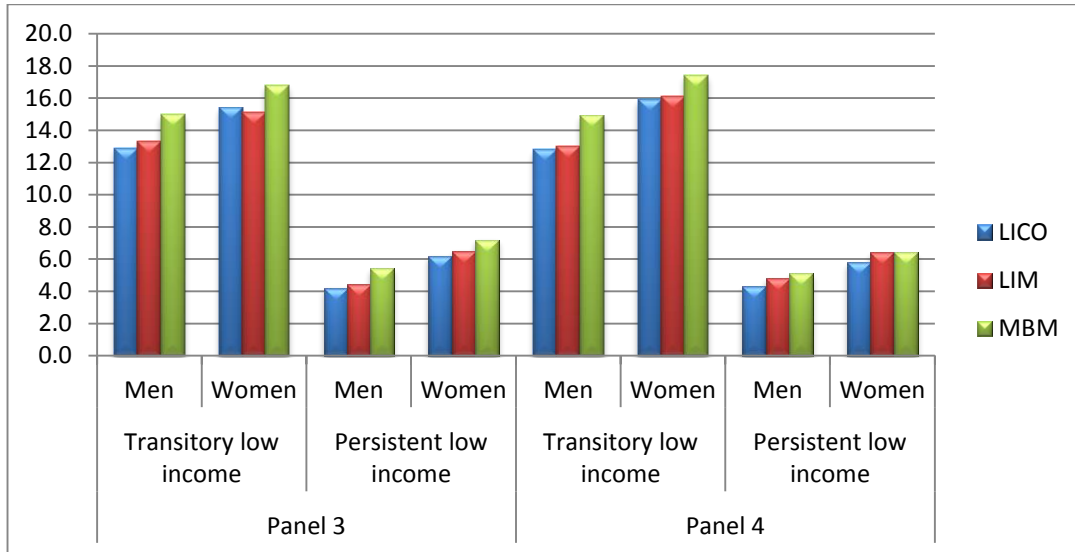
Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 1 demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) for men and women under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.

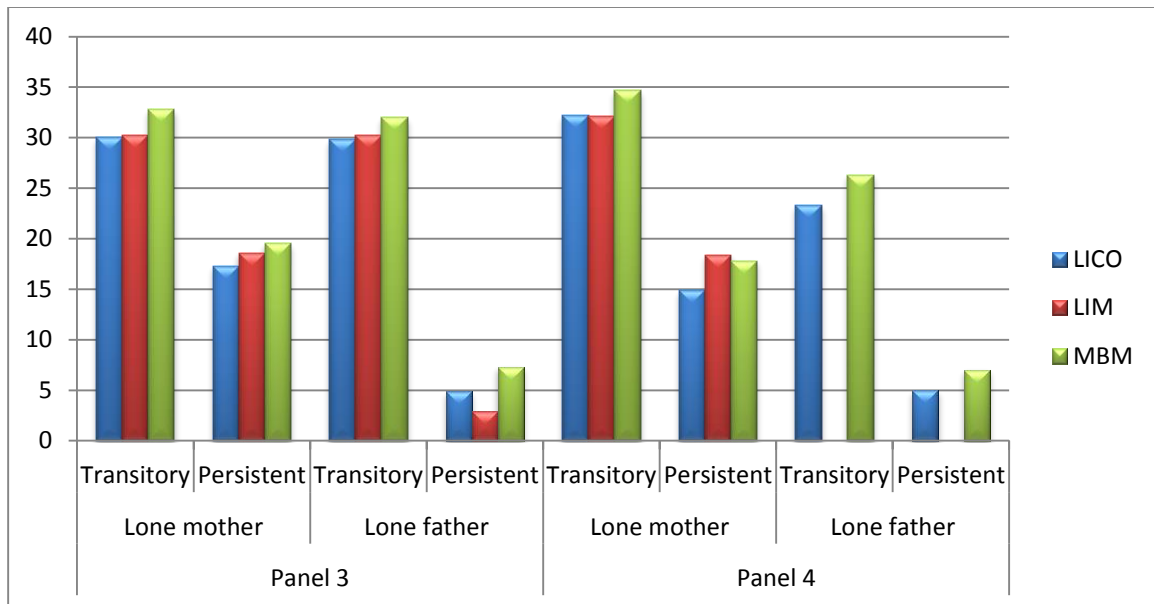**Figure 2: Proportions of short-run and chronic low income (%) by age under the three low income thresholds: 1999-2004 and 2002-2007**

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 2 demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) by age (in the beginning year of the panel period, respectively) under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.

Figure 3 - A: Proportions of short-run and chronic low income (%) by family composition under the three low income thresholds: 1999-2004 and 2002-2007

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 3 - A demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) by family composition (throughout the panel period, respectively) under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.

Figure 3 - B: Proportions of short-run and chronic low income (%) for family headed by lone parent (lone mother/father) under the three low income thresholds: Panel 3 (1999-2004) and Panel 4 (2002-2007)
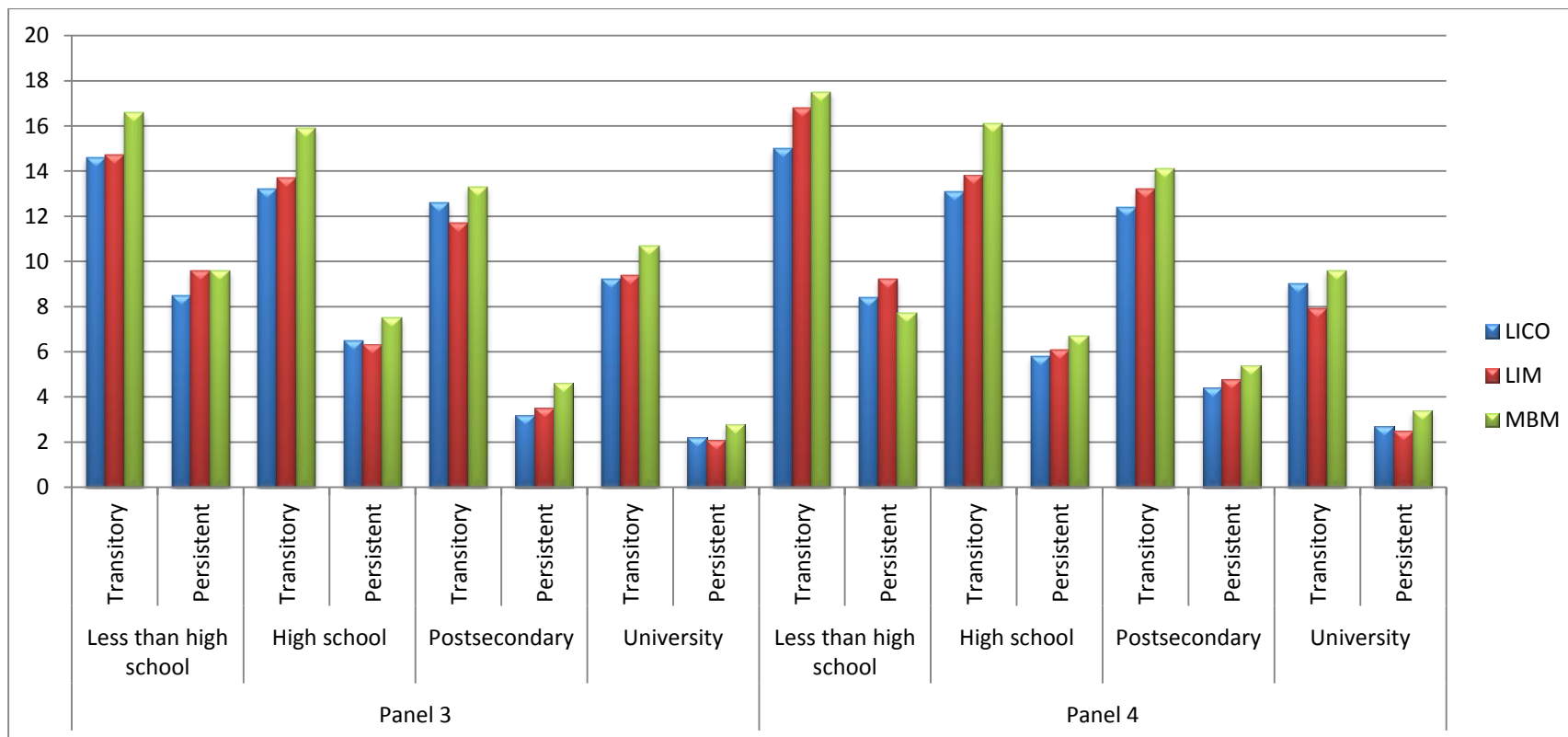

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Note: Data for the proportions of lone fathers who had low income under LIM during the period of Panel 4 are not shown due to the data release restriction of Statistics Canada.

Figure 3 - B demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) for family headed by lone mother and lone father (throughout the panel period, respectively) under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.
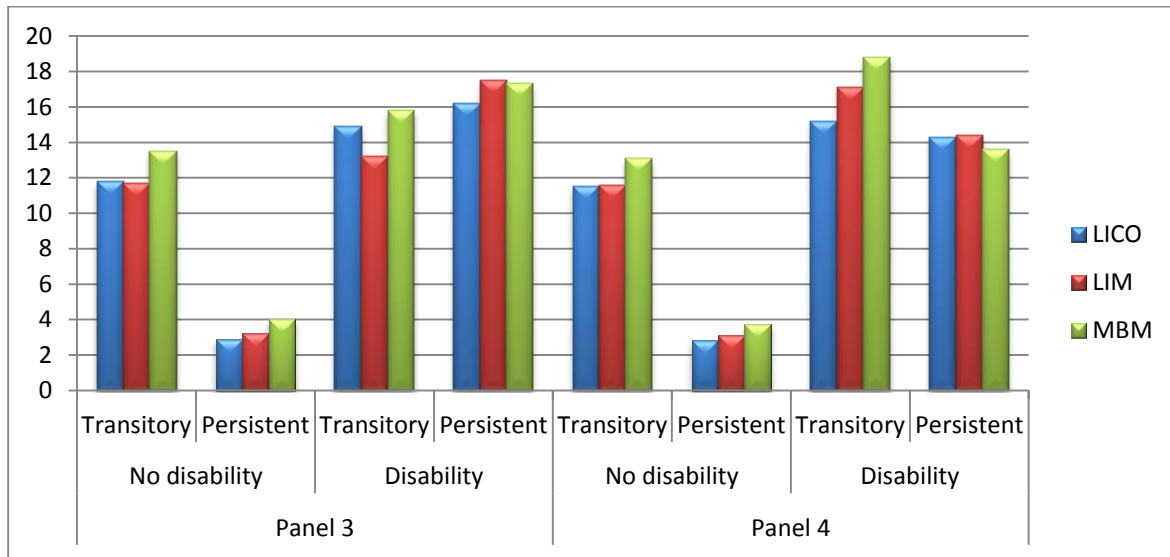
Figure 4 - A: Proportions of short-run and chronic low income (%) by educational attainment under the three low income thresholds: 1999-2004 and 2002-2007

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 4 - A demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) by educational attainment (throughout the panel period, respectively) under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.
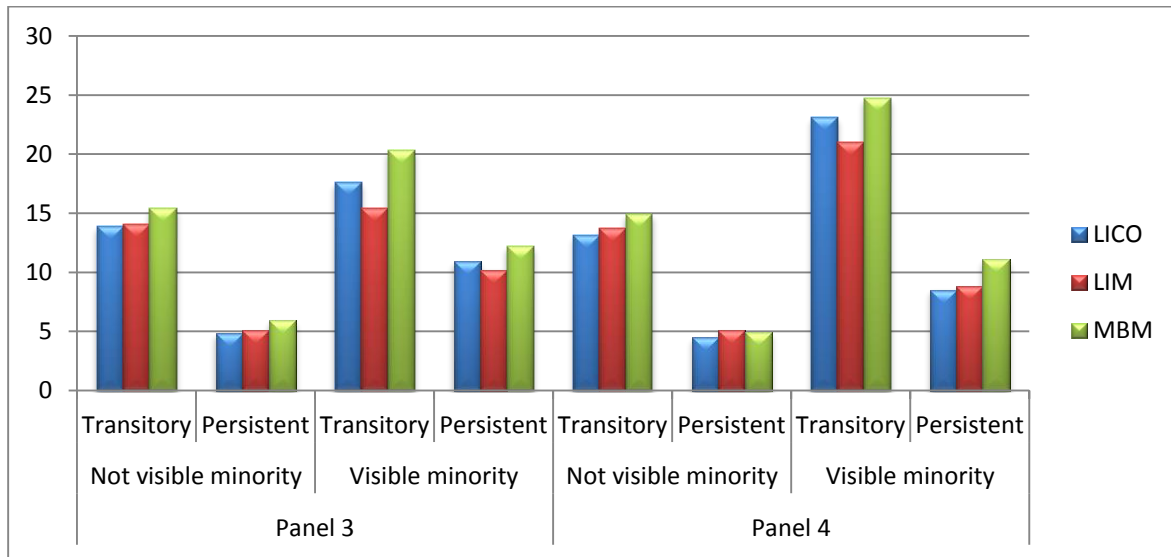
Figure 4 - B: Proportions of short-run and chronic low income (%) by disability condition under the three low income thresholds: 1999-2004 and 2002-2007

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 4 - B demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) by disability condition (throughout the panel period, respectively) under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.
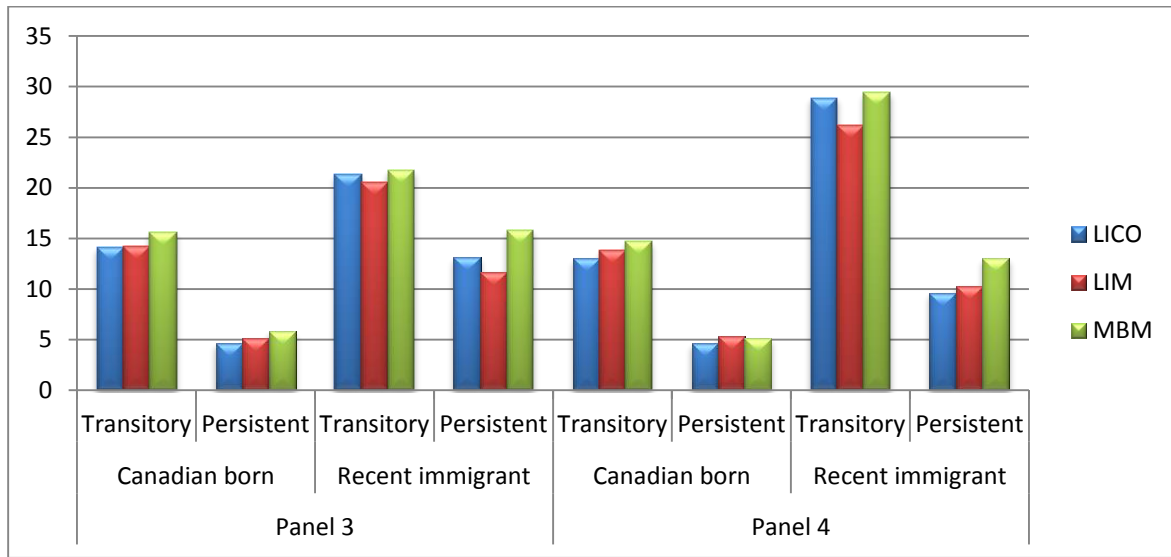
Figure 4 - C: Proportions of short-run and chronic low income (%) for visible minority under the three low income thresholds: 1999-2004 and 2002-2007

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 4 - C demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) for visible minority under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.

Figure 4 - D: Proportions of short-run and chronic low income (%) for recent immigrant under the three low income thresholds: 1999-2004 and 2002-2007

Source: The authors' calculations based on Survey of Labour and Income Dynamics, Panels 3 and 4.

Figure 4 - D demonstrates the proportions of short-run low income (1-3 years in low income) and chronic low income (4-6 years in low income) for recent immigrant (landed in Canada after 1986/1989 for panel 3/4, respectively) under the three low income thresholds (LICO, LIM, and MBM) for SLID panel 3 (1999-2004) and panel 4 (2002-2007), respectively.