

Economic Policy Variables and Population Health

Lars Osberg
Department of Economics
Dalhousie University

Draft #3

June 24, 1996

1. Introduction

Increasingly, medical specialists and society at large have begun to recognize that “health”, “illness”, and “recovery” are not just simple issues of the medical treatment of disease or accidents. Both the objective prevalence of physical ailments and their subjective interpretation and impacts on life are influenced, in complex ways, by the social and psychological well being of individuals. Since making a living is an inescapable preoccupation of most adults and since the rewards from and the ways in which people make their living affects many aspects of the rest of their lives, economics has a major influence on psychological and social well being. It therefore makes sense to ask what role economic policy variables might play in influencing the health of the population.

Section 2 of this essay starts with an examination of some of the economic determinants of health status. Unemployment, economic insecurity/anxiety, a sense of personal control over one's economic future and economic inequality are all interrelated aspects of the economic environment of individuals which can be expected to influence their health status. Section 3 discusses the special problems of vulnerable groups within Canadian society. Section 4 looks at directions for economic policy which could reasonably be expected to affect the health outcomes of Canadians, and which also have some degree of feasibility in the actual environment of Canada in the 1990s. Section 5 is a conclusion.

2.1 Unemployment

As a large number of studies in Canada and elsewhere have concluded, unemployment is bad for the health. Controlling for age, education, occupation, level of physical activity, and a host of other possible determinants of health status, the unemployed tend systematically to have poorer

health outcomes than the employed.¹ In order to understand why the experience of unemployment tends to produce ill health, it is useful to analyze why employment is important. As Jahoda (1979:494) put it:

“There are latent consequences of employment as a social institution which meet human needs of an enduring kind. First among them is the fact that employment imposes a time structure on the waking day. Secondly, employment implies regularly shared experiences and contacts with people outside the family. Thirdly, employment links an individual to goals and purposes which transcend his own. Fourthly, employment defines aspects of status and identity. Finally, employment forces activity.

It is these “objective” consequences of work in complex industrialized societies which help us to understand the motivation to work beyond earning a living; to understand why work is psychologically supportive, even when conditions are bad; and, by the same token, to understand why unemployment is psychologically destructive.”

As well as performing these important latent functions, employment also has the direct practical implication that the employed are able to earn an income. And if a household is without employment, dependence on social transfers is unavoidable, with the stress of lower income, the loss of social respect and the anxiety about the future which that entails.

A major theme of this essay will be the central importance of the level of unemployment as a determinant of health outcomes. However, in order to understand the relationship between unemployment and health and the policy measures that might mitigate adverse health implications, it is also useful to distinguish between the types of unemployment experience which are likely to

¹Schofield (1996:3) provides a listing of some of the “large number of studies, both in Australia and overseas, which have established a relationship between unemployment and a range of measures of poor health.” D'Arcy and Siddique (1987); D'Arcy (1986); Béland (1993), Ketso (1988) and Grayson (1993) represent some of the Canadian literature. Brenner(1971,1979) and Brenner and Mooney(1983) are classic early articles on the subject.

have (or not have) adverse implications for health. As many (e.g. Kelvin and Jarrett (1985)) have noted, the psychological impacts of an unemployment spell can be expected to vary with its duration, since despondency and depression usually only begin to set in after a prolonged period of unemployment -- the first few weeks of unemployment are often a period of relative optimism, activity and the productive use of time. There is also abundant evidence in labour economics that the reason for unemployment matters -- individuals who are laid off or who are dismissed have different patterns of labour market search and re-employment than those who quit their job voluntarily (see Devine and Kiefer, 1991). It is therefore reasonable to expect that the health impacts of unemployment may also differ somewhat with the initial cause of unemployment.

To analyze the health impacts of unemployment, and the policy measures that could be of assistance, one must therefore begin by asking “Why are people unemployed?” It is also necessary to recognize that being unemployed is not the same thing as being without a job. In the official labour force statistics, individuals without jobs can either be classified as unemployed (if they looked actively for work²) or “not in the labour force” (if they did not engage in job search). Within labour economics, the meaning and the ambiguities of the not in labour force/unemployment distinction have been often debated, since observed behaviour (i.e. job search) may not be a reasonable guide to the reality of unemployment, when individuals who want employment withdraw from active job search, because they believe that no jobs are available.

²In addition, a fairly small number of the jobless are classed as unemployed without the requirement for active job search -i.e. if they were on layoff, were available for work and were not looking because they expected to return to their previous job OR if they had not actively looked for work but had a new job to start in four weeks or less.

This ambiguity in the statistical measurement of unemployment is a pointer to the importance of the subjective interpretation of labour market events. Whether or not a spell of joblessness is interpreted as “unemployment” depends on both the labour market context within which an individual functions and whether or not a socially sanctioned alternative definition of their joblessness (e.g. as “retired” or “housewife”) is available. Similarly, the implications for individual health of a spell of unemployment are likely to vary with both the social context and the social interpretation of joblessness - which varies over time, as social norms change³. Unemployment that is a “normal” part of an otherwise satisfying occupation (e.g. film crew, construction worker) or joblessness which can be easily relabelled as socially sanctioned labour force withdrawal (e.g. “retirement”) is unlikely to have the same health implications as the involuntary, long duration unemployment of experienced workers which is the main focus of the literature on the psychological and health impacts of unemployment.

However, if all unemployment is assumed to be equivalent to leisure and if the amount of unemployment is seen as determined by the utility-maximizing choices of rational individuals, it is difficult to see why unemployment should have any adverse health impacts at all. Neoclassical labour economics starts from the perspective that individuals choose the number of hours they wish to supply to the labour market in order to maximize their utility. In the labour/leisure choice model, individuals can sell whatever number of hours they wish to employers, at a wage that is determined by their personal characteristics. Work is seen as a disutility, but individuals are seen as deriving utility from the income produced by employment and from “leisure”. In the work/leisure dichotomy,

³Changing social norms, and the changing stresses of joblessness, can be illustrated by the very different social reactions which married women can expect to receive in the 1990s to the statement “I am a housewife” compared to the reaction which could be expected in the 1970s.

all non-work hours are defined to be “leisure”, and the distinction between leisure and unemployment, or between types of unemployment, is ignored. Variations over time, or across individuals, in total employment hours are explained by the labour/leisure model as arising in response to changing incentives. Variations among individuals in real wages and in the income available through social transfers such as unemployment insurance are seen as the determining factors in unemployment.

Although the labour/leisure choice model has a long history in economics, the search perspective is more recent, dating from the early 1970's. This perspective starts from the truism that the probability that an unemployed individual will get a job is equal to the probability that the individual will receive a job offer times the probability that they will accept that offer. However, although in practice the job offer arrival rate is the most important determinant of unemployment duration, (see Devine and Kiefer, 1991:140, 304), the search literature has tended to focus on whether or not an individual will accept or reject available job offers -- i.e. the focus is on the unemployed individual's choice of “reservation wage”, or the lowest paid job offer that they will consider accepting.

But if the unemployed are just choosing the weeks of leisure they prefer, or the reservation wage that makes them best off in the long run, why do they tend to be sicker than the employed? ⁴

⁴In addition, one can seriously question whether either the labour/leisure choice model or the voluntary job search choice model can reasonably explain the variation in aggregate unemployment over time, across countries or between individuals. In Canada, for example, the “choice” perspective on unemployment has often been used to assert that the incentives of the unemployment insurance system are responsible for much of Canada's unemployment -- but the empirical evidence is highly ambiguous (see Osberg (1996) or Myatt (1996)) and there is a good deal of evidence that the incentives of unemployment insurance are relatively unimportant, compared to the constraints imposed by the unavailability of employment. (See Phipps (1990, 1991), Osberg and Phipps (1993)).

“Supply side” interpretations of unemployment are, in general, hard to reconcile with the evidence on the adverse health implications of unemployment. The labour/leisure choice model of unemployment and the job search model of unemployment both appeal directly to the utility maximizing choices of individuals as an explanation of unemployment, but one must also recognize that the idea that higher payroll taxes are a possible explanation of the higher unemployment of the 1990's (see Poloz, 1993) is also, ultimately, dependent on voluntary supply side choices of workers. As Allié (1994) makes clear, in a neoclassical model, higher payroll taxes are predicted to decrease employment but only because workers want to supply less hours of work when their wages fall, and because employers can be expected to cut wages to compensate for the impacts of higher rates of payroll taxation on total labour costs. Only in the short term, before wage levels can adjust to an increase in indirect labour costs, will there be an increase in total labour costs and a “demand side” based decrease in employment.

Although explanations of unemployment that view unemployment time as the result of voluntary, utility maximizing individual choices cannot credibly be reconciled with the perspective that unemployment causes ill health, explanations of unemployment that emphasize the disappearance of jobs can be. There are two main candidates -- the structural change argument and the deficient aggregate demand hypothesis.

Since structural change has always been a conspicuous feature of capitalism, from the displacement of hand loom weavers by power loom technology in the 18th century to the replacement of bank tellers by ATMs in the 1990's, it has always been the case that workers have lost their jobs to technological and market changes. For more than two centuries, the jobs lost in declining sectors have been replaced by new jobs in expanding sectors. Although the popular press

is, in 1996, replete with assertions that the technological and market changes of the 1990's are unprecedented, the popular press of previous decades was similarly impressed with the then “unprecedented” speed of change. And since qualitatively different types of structural change are inherently hard to compare (e.g. the rural/urban shift of the 1950's, compared to the computer revolution of the 1990's) it is not particularly easy to assess when “change” is “greater” or not.⁵

Because the shedding of excess labour by declining firms is an inherent part of a dynamic capitalist system, one must also distinguish between demand deficient and structural unemployment. Strictly speaking, “structural unemployment” refers to the unemployment of those whose skills, location or other personal characteristics mean that they cannot fill available vacancies. Those unemployed workers who have the wrong skills, or are in the wrong location, to fill existing jobs can be said to be “structurally” unemployed -- but if there are not enough jobs of any type, the cause of unemployment is more accurately assigned to deficiency of aggregate demand.

Structural change in a macroeconomic environment of strong aggregate demand does generate some unemployment -- but it is the frictional unemployment of job search which occurs when it takes time for the excess labour of declining sectors to locate jobs in expanding sectors. The Canadian labour market is normally characterized by a rather high level of geographic and inter-industry mobility -- for example, some 19 percent of Canadian workers changed their broad industry of employment between 1986 and 1987. (See Osberg, Gordon and Lin, 1994:59).

⁵Samson (1985) does provide data on the coefficient of variation of change in employment levels by industry which indicates that, by this measure, the structural change of employment in Canada in the 1950's (a low unemployment decade) was greater than in the 1970's and 1980's.

From the point of view of the unemployed person whose job has disappeared and who cannot get a new one, the distinction between structural and demand deficient unemployment may seem to be of a somewhat secondary order of importance. If there are known to be jobs elsewhere or for other skills, the unemployed may have the hope that if they move, or retrain, they can take control of their own lives and become employed. Conversely, if it is clear that there is a generalized surplus of labour, the widespread realization that “there aren't jobs out there, so it's not my fault” may attenuate the stress of unemployment. But either way, there is no job. The psychological importance of the social isolation, boredom, lack of structure and identity implied by a lack of employment, and the financial impact of a lack of earnings, remains.

The distinction between demand deficient and structural unemployment is chiefly important for macroeconomic policy makers, who have to decide whether unemployment can be reduced by stimulus to macroeconomic demand through lower interest rates, or whether an increase in aggregate demand would encounter the constraint of supply capacity, and thereby generate inflation. Indeed, macroeconomic decision makers may be highly uncertain as to the potential output capacity of the economy.⁶ However, objective uncertainty about the rate of unemployment at which inflationary pressures might emerge may interact with the Central Bank's bureaucratic imperative to be seen to accomplish stated goals. If the sole priority of policy is to avoid inflation, this is not actually a difficult objective for a central bank to attain. It is always possible to maintain enough slack (i.e. excess unemployment) in the economic system to prevent any possibility of a resurgence of inflation

⁶As Setterfield, Gordon and Osberg (1992) demonstrated, statistically reasonable estimates of the non-accelerating inflation rate of unemployment can be found which would place the NAIRU anywhere between 4.42 percent and 9.25 percent for adult male unemployment -- a range which spans virtually the entire post-war historical experience of unemployment in Canada.

-- but only at the cost of perpetually high unemployment. As Fortin (1994) has argued convincingly, the Bank of Canada's estimates of the potential output capacity of the Canadian economy are systematically lower than those of other researchers, implying a systematic policy bias to excessive aggregate demand restraint, and the achievement of inflation control targets.

From the point of view of population health, a further implication of high unemployment is that when labour markets are persistently characterized by excess supply and a queue of available workers for any job opening, it makes sense for employers to alter their personnel policies. When employers can be sure that workers will be available, on an on-call basis, to meet any future surges in demand, they have less incentive to retain permanent employees in slack periods. In a depressed labour market, firms will often find it more profitable to shift to a strategy of employing a small group of permanent "core" workers, and to hire in casual employees on a "just in time" basis, to cope with any surges in output. As more firms shift from a permanent worker strategy to a core/casual strategy, the declining number of full time jobs then produces an increase in aggregate unemployment and greater economic insecurity for the swelling pool of casual employees.⁷

When firms shift to a "just-in-time" labour strategy and call workers in only when they are needed, the financial risk of short-run fluctuation in sales is transferred to workers. Workers also have to cope, in their day to day lives, with unpredictability in their working time and scheduling. Given that individuals usually live in households and have to coordinate their schedules with others -- e.g. to provide childcare -- the result is an increase in the stresses of daily life.

High unemployment therefore has both direct and indirect impacts on the determinants of health. The direct impact of high unemployment is to deprive more unemployed people of their

⁷For a fuller model of this process, see Osberg (1995).

work environment- which means that they have to do without the social contacts and social relationships of the workplace and the psychological supports emphasized earlier (Jahoda (1979)). An indirect impact of high unemployment on health determinants arises from its impacts on the job structure as the easy availability of potential workers causes firms to adjust their employment strategies in ways which increase the stress levels of workers.

As well, high unemployment influences family structure. The literature on the determinants of health outcomes often emphasizes the importance for health of the social contacts and social support network available to individuals. In general, the trend in Canada is for individuals to live in smaller households and thereby to have fewer people available for social support. The extended family has been replaced, in most instances, by the nuclear family for some decades now, but the nuclear family is also shrinking in size. The long run decline in fertility rates means that adults today not only live with fewer children than their parents did, they also have fewer siblings available should they need help or social interaction. Increased numbers of never married and divorced adults have also swollen the proportion of single person households.

However, these trends are not entirely exogenous. As Orcutt et al (1976), and others, have noted, the probability of divorce is significantly higher in households affected by unemployment. As a result, one implication of a long period of high unemployment is an increasing proportion of older single person households. The stress of the event of divorce can itself be expected to have health implications and since middle aged and older singles tend to have poorer health, an increase in divorces also tends to produce a shift in population demographics towards a demographic structure with higher probability of morbidity. (Although it is also true that high unemployment may mean the delayed departure or return to the parental household of adult children and, therefore,

a decline in the number of young single person households, the net impact of high unemployment on health, via demographics, will be negative, if the impact of single status is greater for older cohorts.) The bottom line is that although the social support of family ties can be an important buffer for individuals from the stresses of economic life, the family itself may disintegrate if the stresses of economic life become excessively high.

2.2 Economic Insecurity/Anxiety

Economic variables affect population health in part because of the stresses of economic life, one of the most important of which is economic insecurity. But what exactly is “economic insecurity”? Why does it arise?

The easiest way to define economic insecurity is to contrast it with economic security, which can be defined as an individual's expectation that at least one of the options that will be available to them in the future will generate a level of economic well being which is comparable to, or greater than, their present level of economic well being. Greater economic insecurity corresponds to a decrease in an individual's estimate of the likelihood that at least one future option will be comparable to the present, and an increase in the individual's perception that their best available option may be substantially worse than the present.⁸

In my own opinion, economic insecurity is a pervasive aspect of Canadian labour markets, and Canadian society, in the 1990's. In my estimation, feelings of economic insecurity have

⁸Clearly, feelings of insecurity are closely related to a sense of personal efficacy (which can be defined as the perception that an individual's actions can influence favourably their own future available options) and to feelings of pessimism or optimism about the future (which can be defined as an average expectation of the value of future options).

increased quite dramatically in Canadian society over the last 20 years, and I believe this to have major ramifications. However, it must be recognized that “economic insecurity” is a term that is relatively rarely heard in the discourse of economists, and there is no generally accepted definition or empirical measurement of the concept. Occasionally, data from polling firms (e.g. EKOS, 1993) can be used to illustrate some dimensions of the issue, but there is no time series data available.

Why is that economic insecurity in general, and job security in particular, can be a major preoccupation of unions in their collective bargaining and individuals in their daily lives, and yet receive so little attention from economists? In part, the answer lies in a trained incapacity to perceive. The training of most economists starts from a “perfect competition” vision of the economy, in which individuals are assumed to maximize their lifetime utility, subject only to the constraints of their resource endowment, the prices individuals face in competitive markets and the interest rate available in the capital market. In this vision of reality, individuals are presumed always to have market options available. And if the loss of a job creates only the need to move to an available new job, and if it is presumed that individuals can borrow or lend in perfect capital markets to tide themselves over any fluctuations in income (due, perhaps, to the search unemployment time required to locate new employment), then there is little cost to job loss, and little reason to feel “insecure” about such a prospect.

As well, it is convenient in much economic theorizing to assume “rational expectations”. In its technical sense, this simply means that individuals are assumed, on average, to form an expectation of the future that is an accurate predictor -- i.e. systematic excesses of optimism and pessimism are ruled out. More generally, individuals are presumed to be “rational” in the sense of weighing dispassionately the relative probabilities of different states of nature and the outcomes to

be expected in each. In computing the expected value and possible dispersion of probability of outcomes, individuals are presumed to behave in a rather bloodless fashion -- in economic models no one loses sleep, or becomes depressed, or lashes out in anger, as they contemplate their future.

Although the perfect competition perspective can offer useful insights into some aggregate market behaviour, most individuals actually live in a micro reality where the issues ignored by the perfect competition framework (“thin” markets, transactions costs and social institutions) have great practical importance. Labour market institutions determine the terms and conditions of employment of people and the degree of “tenure” that an individual has in their current job, as well as the severance benefits available if they should lose it. Over time, the initial training and subsequent job experience of most workers effectively specializes their labour to the point that they can only realistically compete for a small subset of all possible employment. And when individuals worry about job loss, and its possible implications - such as being unable to make the mortgage payments - their concerns reflect concrete social realities such as the possible loss of social ties to the neighbourhood, and the disruption of their children's schooling, as well as the financial losses of a forced sale.

Economic insecurity is, then, partly about an environment in which increasing numbers of people are unsure whether their present options will be available to them in the future and find themselves unable to form a concrete picture of an acceptable alternative. The questions “Where will I live? What will I do?” are key dimensions of a concrete vision of the future -- yet an increasing number of Canadians no longer can be sure they know the answers.

In thinking about the connection between economic policy, insecurity and health, it is important to emphasize that the issue underlying economic insecurity is not economic change, but the context of change. As has already been noted, structural change has long been a prominent feature of capitalist economies, but whether the shedding of labour by declining firms and sectors generates significant economic insecurity or not depends on the institutional, social and economic context in which labour shedding occurs.

If labour markets are characterized by strong aggregate demand for labour, such that replacement jobs are easily found, the availability of market options is, in itself, a source of security to both the employed and the unemployed. However, in labour markets where jobs are hard to find, the prospect of being “on the market” produces insecurity. When public policies provide “social protection” to workers, either in the form of legal restrictions on layoffs, requirements for severance pay or generous transfer payments in the event of unemployment, the personal consequences to workers of labour shedding by their employers are less costly. If workers are protected by powerful unions or if private employers offer credible guarantees of continued employment (as in the Japanese *Zaibatsu*) then workers are assured that although their job duties may change, the essential aspects of their economic future are secure.

A variety of policies can, therefore, provide security for workers - either public sector or private sector institutions which protect employment rights or a macroeconomic context in which jobs are available to the unemployed. In designing policies that provide economic security to employees, governments have to be aware that in a dynamic, market driven economy, employers need to be able to adapt to technological and market changes - but as Blank (1993) has pointed out, when one looks in detail at the labour market institutions of advanced industrial nations, there is

no simple “trade-off” between economic security for workers and labour market flexibility. In Canada, for example, the existence of publicly funded universal health insurance means that workers need not worry about inadequate health insurance coverage and the chance of catastrophic illness. Universal Medicare also means that Canadians do not experience the problem of the “job lock” that can occur in a private health insurance system when individuals may lose their coverage for existing ailments if they move to a new employer paid health plan. Medicare in Canada, therefore, is an example of a programme that provides increased economic security and increased labour market flexibility.

Other types of programmes may have their main impact in pushing employers to particular types of adaptation to change. As Blank points out, in many European countries, the cost of mandatory severance pay for laid-off workers creates an incentive for employers to react to a downturn in demand by decreasing the hours of work of all employees. On the other hand, the US style system of employer paid benefits creates a fixed cost of employment per worker, which establishes an incentive to react to downturns in demand by laying off some workers entirely, and concentrating remaining available hours of employment intensively on the remaining employees.

In general, in a dynamic capitalist system one cannot expect anything other than continual pressure on firms to change and to adapt to change. For population health, the issue is whether the context of change - both in the institutional constraints on types of adaptation to change and the availability of alternative jobs - can leave workers with the economic security they need, and still enable firms to find a viable type of adaptation.

2.3 Control/Efficacy

In October, 1993, EKOS Research Associates asked a representative sample of Canadians whether they agreed or disagreed with the statement “I feel I have lost all control over my economic future” -- 52 percent said that they agreed. This sort of global sense that life is out of control and that one does not know, and is unable to influence, what the future may bring is likely to have significant health consequences. As Frank and Mustard (1994:9) have noted “an individual's sense of achievement, self esteem and control over his or her work and life appears to affect health and well being. ...How competence and coping skills relate to vulnerability to disease may be explained by improved understanding of the links between the brain and the endocrine pathways and the immune system.”

In trying to understand the pathways by which social and economic events influence health, a sense of personal efficacy or control is a very crucial intervening variable. Just as the decision to go skydiving occasionally has very different implications for stress levels and health than being thrown out of an airplane involuntarily, the stress created by the same social and economic events can be expected to have very different impacts, depending on the sense of control which an individual has over the consequences of such events.

Indeed, it can be argued that efficacy is a common denominator underlying several significant socioeconomic determinants of health. As Béland (1993:19) notes, income, education and employment status are a triptych which tend to predict health outcomes -- as he puts it: “income, education and unemployment are the very issues out which health policy is made of. It is thus legitimate for health policy measures to be preoccupied with schooling, income distribution and unemployment. Policies directed towards these sectors will not only influence health status and health risks, they will also affect needs for medical care.” By increasing an individual's sense of

comprehending their environment, education provides an essential first step in managing one's life, and thereby affects each individual's sense of efficacy. Affluent people have choices to make, and a degree of control over their economic life, which is denied to the poor, whose resources are almost entirely consumed by non-discretionary expenditure. The unemployed have less money and more time available, but since they do not control whether a firm will offer them a job, they thereby lose control over their future.

If personal efficacy is an important intervening variable in population health, one must also consider the locus within which a sense of personal control operates. At the workplace level, the structure of the job hierarchy and the degree of devolution of workplace authority will influence the percentage of the population who feel some degree of control over day to day work outcomes. Conversely, the constraints which past company practice, collective bargaining or the law place on the arbitrary exercise of power by superiors will also influence the prevalence of a sense of personal control. Within many companies today, there is a new emphasis on “delaying” and the “empowerment” of production workers. However, there is also a certain amount of shop floor cynicism that these buzz words of modern management, if not accompanied by some form of protection for the job security of employees, may simply mean an increase in responsibility, workload and workplace stress for the “empowered” workers who remain, after “delaying”.

At the broader social level, a sense of personal control over one's own life is imperiled when the basic assumptions of personal planning are called into question. Although it may be modern day political wisdom to suppose that it is necessary to invoke a sense of imminent crisis to effect reforms, the drum beat of dire (and misleading) predictions -- e.g. that Canada is about to hit a “debt

wall” or that the Canada Pension Plan will go bankrupt or that Medicare is not sustainable -- tends to create a societal anxiety level that cannot be healthy.

2.4 Inequality and Health

In recent years, a number of authors have argued that income inequality is the key determinant of variations in average life expectancy at birth among developed countries.⁹ Wilkinson (1994) argues that during earlier historic epochs in developed countries, and in much of the less developed world today, a large proportion of the population has suffered from chronic hunger and the lessened resistance to infectious disease which that implies. In these conditions, improvements in the average level of income are highly correlated with improvements in life expectancy -- indeed the historical record in developed countries is quite clear that the major declines in mortality due to specific diseases (e.g. tuberculosis) occurred well before the development of medical science or improvements in public health. However, once the vast majority of the population gain reliable access to the basic material necessities of life, there appears to be an epidemiological transition as the main causes of death shift from infectious diseases to degenerative cardiovascular diseases and cancers (Wilkinson, 1994:65).

In affluent countries, poor people have a greater prevalence of many of the risk factors, such as obesity or smoking, which tend to be rich people's problems in poor countries -- and even

⁹Judge (1995) takes aim at Wilkinson's conclusions in a critical review. Wilkinson's reply (1995) emphasizes the robustness of his results to data choices and the corroborating work of others (e.g. Waldmann (1992), Duleep (1995), McIsaac and Wilkinson (1995)).

controlling for the prevalence of such risk factors, there is an important influence of income on the prevalence of health problems. Waldmann's (1992) study of infant mortality indicates that the issue is not the absolute level of resources available to the poor in each country, since controlling for the absolute level of income of the poor, infant mortality was higher in countries where the share of the rich was greater. As Wilkinson (1993) argues, even though the rich in every country tend to live longer than the poor, the gradient in life expectancy is smaller in more equal countries -- implying that not only the relatively poor, but also the relatively affluent, tend to live longer in countries with greater equality of incomes.

The argument that variations in economic inequality are now the main determinant of variations in the health status of developed countries has now gained wide currency¹⁰. However, economic inequality is a very complex idea, with a host of alternative plausible measures¹¹ and the measurement of "health status" can be similarly problematic. In fact, of course, the "inequality" or "health status" of a population is the result of the large number of complex processes, whose impacts are aggregated over a number of diverse sub-populations.¹² What is it about "inequality" that adversely affects "health"? Do we expect that it is the fact of inequality that has impacts on

¹⁰Judge (1995) provides an extensive listing of the citations to Wilkinson's work.

¹¹The alternative statistical measures of inequality (e.g. the Gini ratio, the Theil index or the coefficient of variation) differ in their sensitivity to different parts of the income distribution (see Jenkins (1991)). As Smeeding et. al. (1996) point out, the different household equivalence scales in use in developed countries differ substantially in their implications for the perceived prevalence of poverty among younger and older cohorts. It also can be argued that wealth inequality is a better indicator of economic inequality than inequality in annual incomes, but a number of alternative definitions of "wealth" exist -- see Wolff (1991). And so on.

¹²For example, in Canada in the 1980's the distribution of male earnings became increasingly unequal, but the distribution of female earnings became somewhat more equal. (MacPhail, 1996).

population health or is it something about the processes which differentiate incomes that produces adverse health outcomes?¹³

Why does economic inequality affect health? Most studies to date have been highly aggregative. Using data on inequality, the industrial composition of output and the death rate of men aged 50 to 54, Duleep (1995), for example, argues that the relationship between inequality and mortality arises because the relationship between individual income and individual health is non linear. If the health/income relationship is non-linear, then a society with a more polarized income distribution, (i.e. a society which has more people at the extremes of the income distribution) will have higher average mortality because the mortality gains of the more affluent are outnumbered by the mortality losses of the poor. In looking at overall mortality and emphasizing the link between individual mortality and individual incomes, this perspective differs somewhat from Marmot (1994) or Frank and Mustard (1994), who emphasize relative income, and the position of individuals in the social hierarchy, as predictive of stress, despair and feelings of helplessness - all of which are themselves associated with adverse health outcomes. Such a perspective would tend to emphasize health gradients throughout the population, but McIsaac and Wilkinson (1995) focus just on the bottom end of the income distribution - i.e. the share of total income received by the bottom 30% of households - and estimate the correlation of that income share with mortality from infectious diseases, neoplasms, ischaemic heart disease, other circulatory, respiratory, liver and cirrhosis, traffic accidents and other causes.

¹³It might be protested that one cannot have the fact of economic inequality without some process of income and wealth generation, but it is conceivable that decisions made in the past (e.g. land reform, or inheritance taxation in general) can have important impacts on the distribution of endowments which now condition the distribution of income, whatever the nature of current processes of income generation.

Different authors have, therefore emphasized different aspects of economic inequality, and different possible causes for the inequality/mortality relationship. Furthermore, in looking at different causes of death (e.g. traffic accidents or cancer) it is clear that there must be quite different pathways of influence -- which likely impinge differently on specific segments of the population.

The issue of unemployment also illustrates the difficulties which surround any attempt to disentangle the relative importance of economic processes and economic outcomes on population health. As Section 2.1 has argued, unemployment has direct impacts on several crucial dimensions of individual psycho-social well-being, including the fact that the experience of unemployment deprives individuals of a major part of their social support network. The prevalence of unemployment also increases feelings of insecurity and anxiety for both the employed and the unemployed. Those who do not know whether their current job will continue, or know of any available alternatives, lose their sense of control over their own future. And since the probability of unemployment is significantly higher among the poorer paid, an increase in unemployment produces an increase in income inequality.¹⁴ Although there is good reason to think that insecurity/anxiety, efficacy/control and the level of inequality are all factors which independently play a role in the determination of health outcomes, each is also highly correlated with trends in unemployment.

3. Vulnerable groups

¹⁴See S. Erksøy (1994), S. Johnson (1995) or C. Beach and G. Slotsve (1996).

Although such macro-economic trends as changes in the rate of unemployment or the level of inequality have impacts throughout society, three groups are likely to be particularly affected - youth, the poorly educated and displaced older workers.

When the unemployment rate rises and falls, the majority of people are not directly affected. The direct experience of unemployment is highly concentrated in the labour force, since many senior workers are protected from layoff by the seniority provisions of collective agreements or by their established value to the firm - due to the firm-specific knowledge that they have been able to acquire over their working career. As well, short term contracts or "on-call" working arrangements can be much more easily imposed on new employees, than on continuing employees. As a consequence, the impact of slack labour markets is felt much more acutely by new entrants to the labour force than by established workers.

In the depressed labour markets of the 1990s, youth unemployment has remained above 15%. The trend to falling youth wages that was detected in the 1980s has accelerated and workers under 30 have been particularly strongly affected by involuntary part-time employment. The trend to part-time work has meant that young workers may in some cases have to piece together two (or more) part-time jobs to generate an income. Without the benefit of years of prior earnings in which to acquire savings, young workers are more dependent on social transfers to tide themselves over any spell of unemployment and are therefore particularly exposed to the impact of reductions in UI and Social Assistance generosity.

The objective reality of the youth labour market in Canada in the 1990s has therefore been pretty depressing, but from the point of view of both physical and mental health, the subjective impact of economic events is also important. Since average individual earnings after inflation have

been essentially flat since the late 1970s and since the national unemployment rate has been relatively high since 1981, Canadians under 30 have never really seen a period of extended prosperity such as earlier generations experienced from 1946 to 1977¹⁵ - but they have seen two extremely severe recessions, a great deal of downsizing and continual cutbacks to the welfare state. The repeated message of much media commentary, and of life events, is the necessity of reducing aspirations and living within (lessened) means. As a consequence, the life experience of Canadians under 30 just does not produce the same level of hope for better days in the future that came naturally to earlier generations - and although the pathways between the psychological state of individuals and their physical ailments are not well mapped out, it does seem clear that despair is not good for the health.

All this adds up to substantially increased levels of economic stress for Canadians under 30. And since most of the parents of very young children are in this age range, those children are indirectly vulnerable to the stresses in time, money, insecurity and despair that their parents are under. Although young children do not themselves participate in the labour market, they are clearly an important part of the victims of the family violence and family breakup that is produced by the high stress labour market their parents inhabit.

In addition to the long standing connection between health and education, the poorly educated have been particularly vulnerable to the economic trends of the 1990s. Employment creation since the 1980s has been concentrated in jobs which require post-secondary education, to the detriment of the relative wages and employment prospects of the poorly educated. Although

¹⁵The brief exception being the Toronto/Southern Ontario labour market in 1988/89 - with a counterbalancing severe contraction in 1990/92.

Canada has not seen the same degree of widening of the earnings differential between high school and university graduates as has been observed in the US (due to the greater increase in supply of university graduates in Canada), it is now increasingly difficult for the poorly educated to find a place in the Canadian workforce. The health deficit of the poorly educated is therefore being reinforced by increasing impacts of unemployment and poverty.

In thinking about the health impacts of economic events, it is also important to recognize that the stress of unemployment can be particularly acute for displaced older workers, who may have decades of habituation to an accustomed work role, neighbourhood, life style and occupational identity. Plant closings or corporate downsizing in small towns or rural areas may leave individuals with very few realistic options in the local area, but even in major metropolitan labour markets, the duration of unemployment is particularly long for displaced older workers, and the probability of experiencing a large wage drop in subsequent employment is relatively high. Psychologically, the impact of having to “start all over again”, and the feeling that a lifetime of contribution to society has no recognized value, can also be extremely stressful. The stress of adjustment is particularly great for those who dropped out of school before graduation 30 to 40 years ago (when such a decision was very common) and who therefore have to start back into school, at a level that may be below that of their children. And since older workers have lived much of their lives during times when there was much less emphasis on the health implications of risk factors such as smoking or lack of exercise, the health deficit of such behaviours may well magnify the impacts of the stress of job displacement.

4. Policy Directions

4.1 A Macroeconomy of Jobs and Hope

Any discussion of economic policy has to start from a perception of what is possible and then proceed to an assessment of priorities. In my view, it is possible to use macroeconomic policy to stimulate aggregate demand in the Canadian economy, so that total output will grow faster and the labour market will generate more jobs, less unemployment, less economic insecurity and less inequality. Faster economic growth would create a macroeconomic environment in which individuals have real labour market options available to them and can begin to feel some sense of control over their own lives and have some hope for the future. A healthy demand for labour in the Canadian economy is, I would argue, both a direct contributor to population health and an essential precondition for the success of other framework policies.

In thinking about how to create jobs in Canada, there is no avoiding the crucial role of the level of aggregate demand for goods and services. In a market economy, jobs in the private sector exist because employers perceive, when they hire labour, that they will be able to sell the goods and services which their workers will produce, at a profit. The demand for labour is a derived demand, which depends ultimately on the demand for goods and services.

The two main avenues available to government to stimulate aggregate demand for goods and services in the economy are fiscal and monetary policy. Stimulating the Canadian economy by fiscal policy would involve either reducing taxation or increasing programme expenditures (or both). By increasing the net spending of the public sector, governments could stimulate aggregate demand for goods and services, and thereby stimulate employment creation, but unfortunately this would be at the cost of increasing the deficit and swelling the net debt of the public sector.

At current levels of the national debt, further additions to the debt would run the risk of creating such a high debt to GDP ratio that the debt/GDP ratio might become unstable, and debt servicing costs might escalate dramatically. In my view, the debt and deficit problems of Canadian governments are, in 1996, very real and very pressing and essentially foreclose the option of stimulative fiscal policy on any appreciable scale.¹⁶

However, in a small open economy with a flexible exchange rate, monetary policy remains a very powerful policy lever with which to influence the macroeconomy. And it is worth emphasizing that there is, in fact, no disagreement about the power of the Bank of Canada to influence aggregate demand in the Canadian economy from day to day. As the present governor of the Bank has argued: (Thiessen, 1995:2, 8, 9)

“When central banks take monetary policy actions, they set in motion a series of consequences that starts with an influence on financial markets, works through changes in spending, production and employment, and ends with an effect on the price level or, more specifically, the rate of inflation in the price level. Economists call this chain of developments the “transmission mechanism”.

Changes in interest rates affect aggregate demand through a number of channels -- the cost of capital, the incentive to save rather than to spend, and the effects on wealth and cash flow. The main components of demand that are affected are housing, consumer spending on durables, business investment in fixed capital and inventory investment. The extent of the response of spending will depend in part on how long the changed level of interest rates is expected to persist. This will be an important factor for those entities that borrow at the shorter end of the market.

¹⁶As the contributors to Osberg and Fortin (1996) note, the main reason for the current deficit and debt problems of Canadian governments is the very restrictive monetary policy pursued by the Bank of Canada in the period since 1988. By the latter part of the 1980's, all Canadian governments had, by a mixture of taxation increases and expenditure reductions, begun to run surpluses of taxation over programme expenditure and were beginning to reduce their debt to GDP ratios, but these debt reduction plans were derailed by the surge in real interest rates engineered by the Bank of Canada as it attempted to bring “price stability” to Canada. -- See Fortin (1996) or Kneebone (1996).

The way in which the exchange rate affects demand is also relatively straightforward. A change in the value of the Canadian dollar will initially change the prices of those goods and services produced in Canada that are traded internationally and whose prices are set in world markets, vis-à-vis those whose prices are not, or at least not entirely, determined in world markets. These changes in relative prices will set in train a series of demand and supply responses that will affect the output of Canadian-produced goods, largely through their impact on exports and imports.

The final link in the long chain is from movements in aggregate demand to the rate of inflation. In our view, underlying inflation is affected primarily by the level of slack in the economy and by the expected rate of inflation. The driving force behind inflation over time is, thus, the cumulative effect of the pressure of aggregate demand on capacity.”

There is no real disagreement that monetary policy is a very powerful tool to regulate the level of aggregate demand in Canada, but there is a disagreement over how that power should be used. In the view of the Bank of Canada, the sole objective of monetary policy should be the maintenance of “price stability”.¹⁷ The Bank of Canada has a very pessimistic appraisal of the potential output capacity of the Canadian economy¹⁸ and a desire to err on the side of “caution” in preventing any chance of resurgence of inflation. As a consequence, the Bank steps in to restrain aggregate demand whenever the economy approaches its (pessimistic) estimate of potential output -- thereby guaranteeing perpetually high unemployment.

¹⁷In practical terms price stability is now interpreted as keeping the core rate of inflation in the consumer price index -- i.e. excluding fuel, indirect taxes and food -- between 1% and 3% per annum.

¹⁸This pessimism is guaranteed by methodological assumption, since the Bank uses the “Hodrick-Prescott” filter to construct its measure of potential output. Since this is essentially a weighted moving average of past output, poor macroeconomic performance in the recent past influences heavily the estimate of maximum productive potential in the present.

Since high unemployment has so many channels of influence to health outcomes, it is crucially important for the Bank of Canada to begin to balance its concern for inflation with a concern for full employment -- as its legal mandate in fact requires.¹⁹

4.2 Social Transfers

In the 1980s in Canada, unemployment was higher than in the 1970s and there was a trend to greater inequality in the distribution of earned income - but transfer payments often compensated. The distribution of total income (including transfer payments) among Canadian households therefore remained relatively stable. Although in comparison to other OECD nations (except the USA), Canada does not spend a high percentage of GDP on transfer payments, unemployment insurance has been a much more important component of transfers in Canada than in many other countries.

Partly because unemployment insurance payments go immediately to those who are affected by unemployment, and such people tend to be relatively poor, unemployment insurance payments in the 1980s filled part of the hole created by higher unemployment and increased inequality in the distribution of working hours. (See Osberg and Phipps (1995); Osberg, Erksoy and Phipps (1996))

When most of the unemployed receive unemployment insurance benefits and the potential duration of benefits is long enough that relatively few exhaust their UI before locating employment, fewer have to rely on social assistance. However, by 1995, a series of reforms to unemployment insurance in Canada had reduced UI generosity to a level comparable to that of 1957, or 1970. In

¹⁹The legal mandate of the Bank of Canada is to “mitigate by its influence fluctuations in the general level of production, trade, prices and unemployment, so far as may be possible in the scope of monetary action and generally to promote the economic and financial welfare of Canada”. But, since 1988, the Bank has redefined its objectives to a focus on “price stability” alone.

fact, by 1995 Canadian UI had become somewhat less than generous than the UI system in place in New York state (See Sargent, 1995).

In 1996, the system has been revised again, to cut another \$1.2 billion from its expenditures.²⁰ However, even before the latest revisions, a steadily falling percentage of the unemployed had been able to claim UI benefits -- due to the disqualification from UI entitlement of voluntary quits and fires, increased entrance requirements and decreased benefit duration, by 1996 UI claimants were only about 52% of the unemployed. And although all these revisions might be expected to place greater stress on the social assistance program, there have been simultaneous cuts to social assistance benefit levels and tightened eligibility requirements in many provinces (most notably Ontario).

If cuts to unemployment insurance and social assistance were occurring in a context where employment opportunities were easily available, they would have relatively little impact on economic inequality, or economic insecurity, or on individuals sense of control over their own lives, because the alternative of a job would be available -- hence one could expect any health implications to be substantially mitigated. However, this is not the case. In the actual situation of 1990s, social transfers are being substantially reduced at a time when the measured unemployment rate still exceeds 9.3%. Furthermore, one must stress that the unemployment rate would be substantially higher, were it not for the fact that the labour force participation rate remains substantially depressed (by about 3 percentage points) because so many Canadians have withdrawn from active job search. In short, current trends in the weakening of Canada's social safety net seem

²⁰ Aggregate UI benefits are anticipated to fall by \$2.0 Billion, but since expenditure on employment assistance measures is to rise by \$800 Million, the net cut is \$1.2 Billion.

certain to exacerbate the insecurity, inequality and stress of economic life which also tends to produce adverse health outcomes. If there is a change in monetary policy to encourage economic growth and job creation, these cuts to the social safety net will be of less importance, but in the current context they are likely to be of substantial importance.

Indeed, since the stated cause of the cuts to social programmes in Canada in recent years has been the concern of Canadian governments to reduce their deficits, and since the cause of the deficit problems of Canadian governments in the 1990s was the high interest rates of the 1988-92 period and the collapse in output which that produced²¹, social programmes are, in a very real sense, hostage to monetary policy.

4.3 Social Protection Legislation

Capitalism is an economic system in which jobs are continually being lost at some firms and created at others. As Davis, Haltiwanger and Schuh (1996) note, developed market economies are all characterized by fairly high rates of job reallocation -- with a range from approximately 16 percent to 30 percent per annum.²² If such change occurs in the context of reasonably rapid growth,

²¹As Osberg and Fortin(1996) note, when the debt/GDP ratio is at the level it was in the mid 1980s, it is the difference between interest rates and the growth rate which is crucial to debt stability. In fact, Canadian governments had begun to run surpluses of taxation over programme expenditure by 1988, but their deficit reduction plans were derailed by the escalation of interest rates engineered by the Bank of Canada.

²²At 20.7% per annum in manufacturing, the rate of job reallocation in Canada was similar to that in the U.S.A. (19.4%) and in Italy (19.9 %). The fact that there is no necessary trade-off between labour market flexibility and a highly developed welfare state is indicated by the fact that the rate of job reallocation in Sweden (23.5%) and in France (23.3%) is somewhat higher. Germany had relatively low job reallocation (16.0%) while Australia and Denmark were

the potentially adverse impacts of job reallocation in insecurity and unemployment are greatly mitigated. When structural change occurs in the context of slack labour markets, however, there is often “no place to go” for job losers - long term unemployment for job losers and continual anxiety for job keepers is the result. Furthermore, as the unemployment rate increases, and new jobs become hard to find, the type of entrant into the pool of unemployed also changes, since voluntary quits fall and involuntary dismissals rise, when labour markets turn soft. The labour market context is, therefore, crucial both for individual behaviour and for the practical impacts of social protection legislation.

When voluntary quits are high (because attractive new jobs are opening up elsewhere) the cost to firms of social protections for existing workers is relatively low because voluntary attrition can fairly quickly achieve any desired reduction in the labour force. When there is a high rate of voluntary turnover, constraints on arbitrary layoffs by firms or the requirement that they provide adequate severance payments provide some peace of mind to workers, but the impact on firms is limited because they do not have to be as frequently invoked. In this context, the marginal value to workers of job security protections may be small, but so also is the cost to employers of providing them.

It is in times when jobs are scarce (as now), that job security is both felt to be needed by workers and most likely to be costly to firms -- voluntary quits have a strong cyclical pattern, and when few people are leaving voluntarily (because new jobs are hard to find) employers have to resort more often to layoffs to achieve any desired degree of downsizing. Unfortunately, it is also

on the high side (at 29.3% and 29.8% respectively). -- See Davis, Haltiwanger and Schuh (1996:21).

at times like the present that employers seem to have the political power to prevent any expansions of social protection legislation. In the current context, it therefore seems to be somewhat unrealistic to urge new legislation to protect workers from arbitrary dismissal, to entrench job security after a probationary period or to increase severance pay requirements. More limited objectives, such as improved procedures for the advanced notification of layoffs, seem like the most that can be hoped for on the regulatory front.

Although in general social protection legislation is, like the transfer system, hostage to the health of the macro economy and the conduct of monetary policy there are also some structural reforms which may be possible. There are a number of price-type incentives in the structure of tax and social welfare legislation that may be inappropriate from the perspective of a population health concern with worker security. Reference has already been made to the impact of employer paid health insurance, which has a “lump-sum” cost per worker to employers, and therefore creates an incentive to minimize the number of employees and react to downturns in demand by reducing the number of employees (but working them for as long, or longer hours) rather than by spreading the same decline in labour demand over the workforce as a whole, by instituting short-hours work weeks. To the extent that coverage under Medicare in Canada is eroded and private (employer paid) health insurance fills the gap, this incentive to layoffs, rather than work sharing, will increase. Similarly, caps on UI coverage of earnings, or CPP employer paid premiums, also establish fixed, “per-employee” costs, and provide an incentive to emphasize layoffs rather than work sharing. However, since payroll taxes in Canada are relatively low, compared to their level in other

developed countries²³, the actual impact on employment structure of these cost features is not likely to be as important as elsewhere.

This essay has discussed the role of insecurity, inequality and a lack of a sense of personal efficacy as factors increasing the probability of ill health - so it is worthwhile mentioning that collective bargaining influences all three. As the industrial relations literature argues, providing workplace security is a major objective of unions. Individual security is enhanced by seniority rights, disciplinary grievance and appeal rights, layoff restrictions and the fact that terms and conditions of employment cannot be unilaterally altered - unlike the "employment at will" situation. By providing an avenue by which individuals can, if they become active in the union, influence their terms and conditions of employment, it can be argued that unionization increases the sense of personal control and efficacy that individuals feel, on average. And since the lower paid have the greatest wage gains from unionization and since unions tend to equalize wages within workplaces, unionization tends to reduce inequality - both within firms and in society as a whole (see Lemieux, 1993). Hence, since there is good reason to think that collective bargaining affects positively some of the dimensions of economic life which have positive impacts on health, legislation which affects the ease or difficulty of union organizing can be seen as an economic policy variable affecting health.

5 Conclusion

²³See Z. Lin et al (1996)

By a number of routes, this essay has kept returning to the importance of full employment for population health and the desirability of a shift in monetary policy to enable economic growth and job creation. In part, this emphasis on the importance of reducing unemployment arises from the close connection between unemployment and the other economic determinants of ill health (insecurity, lack of efficacy and inequality) that have been identified in the literature. As well, persistently high unemployment can be expected to produce changes in the institutional structure of labour markets and the demographic structure of the population which increase the stress levels individuals are subject to and which erode the social institutions which help to buffer them from stress. High unemployment and excessively tight monetary policy are also important because the financial constraints of an under performing macro economy and excessively high interest charges on the national debt are forcing cuts in the social safety net. In the 1980s, social transfers were extremely important in mitigating in Canada the rise in inequality and insecurity that was observed in the US and the UK - but the 1990s have seen major cuts.

In short, because high unemployment has a strong impact on population health, both directly and indirectly, and because the other economic and social policies that might assist health policy are hostage to a resumption of economic growth and job creation, the main economic policy variable that can positively affect the health of Canadians is a monetary policy that emphasizes jobs and growth.

Bibliography

- Allié, E. (1994) "Impacts of Changes in UI Contributions and Maximum Insurable Earnings: A General Equilibrium Model," paper presented at the Canadian Employment Research Forum Conference on the Evaluation of Unemployment Insurance, October 15, 1994, mimeo, Strategic Research, Human Resources Development Canada.
- Beach, C.M. and G.A. Slotsve (1996) Are We Becoming Two Societies? Income Polarization and the Myth of the Declining Middle Class in Canada, C.D. Howe Institute, Toronto, 1996.
- Béland, F. (1993) "Expenditure on Ambulatory Medical Care Over the Long Term in the Quebec Medicare System," Discussion Paper prepared for the Ninth Meeting of Consultative Committee on Social Policy, Health Canada, Montreuil, Quebec, December 12-14, 1993.
- Blank, R. (1994) Social Protection Versus Economic Flexibility: Is there a Trade-off?, National Bureau of Economic Research, University of Chicago Press, Chicago and London, 1994.
- Brenner, M.H. (1971) "Economic Changes and Heart Disease Mortality," American Journal of Public Health, Vol. 61, 1971, pp. 606-611.
- Brenner, M.H. (1973) Mental Illness and the Economy, Cambridge, Massachusetts, Harvard University Press (1973).
- Brenner, M.H. and A. Mooney (1983) "Unemployment and Health in the Context of Economic Change," Social Science and Medicine, Vol. 17, 1983, pp. 1125-1138.
- D'Arcy, C. (1986) "Unemployment and Health: Data and Implications," Canadian Journal of Public Health, Vol. 77, Supplement 1, May/June, 1986, pp. 125-131.

- D'Arcy, C. and C.M. Siddique (1987) "Health and Unemployment: Findings from a National Survey," pp. 239-261 in David Coburn et. al. (editors) Health and Canadian Society: Sociological Perspectives, 2nd Edition, Toronto, Fittshenry and Whiteside, 1987.
- Davis, S.J., J.C. Haltiwanger and S. Schuh (1996) Job Creation and Destruction, MIT Press, Cambridge, Massachusetts.
- Duleep, H.O. (1995) "Mortality and Income Inequality Among Economically Developed Countries," Social Security Bulletin, Social Security Administration, Office of Research and Statistics, Vol. 58, No. 2, Summer 1995, pp. 34-50.
- Devine, T.J. and N.M. Kiefer (1991) Empirical Labour Economics: The Search Approach, Oxford University Press, Oxford, 1991.
- EKOS Research Associates (1993) "A Mid-campaign Report: The EKOS Election 1993 Analysis," October 1, 1993, EKOS Research Associates, Ottawa, Ontario.
- Erksoy, S. (1994) "The Effects of Higher Unemployment on the Distribution of Income in Canada: 1981-1987," Canadian Public Policy, Vol. 20, No. 3, September 1994, pp. 318-328.
- Fortin, P. (1994) "A Diversified Strategy for Deficit Control: Combining Faster Growth with Fiscal Discipline," Department of Economics, mimeo, University of Quebec at Montreal.
- Fortin, P. (1996) "The Canadian Fiscal Problem: The Macroeconomic Connection," pp. 26-38 in L. Osberg and P. Fortin Unnecessary Debts, James Lorimer & Company, Toronto, 1996.
- Frank, J.W. and J. F. Mustard (1994) "The Determinants of Health from a Historical Perspective," Daedalus: Journal of the American Academy of Arts and Sciences, Health and Wealth, Proceedings of the American Academy of Arts and Sciences, Vol. 123, No. 4, Fall 1994, pp. 1-19.

- Grayson, J.P. (1993) "Health, Physical Activity Level, and Employment Status in Canada," International Journal of Health Services, Vol. 23, No. 4, pp. 743-761.
- Jahoda, M. (1979) "The Psychological Meanings of Unemployment," New Society, pp. 422-425, September 6, 1979.
- Jenkins, S. (1991) "The Measurement of Income Inequality," pp. 3-38 in L. Osberg Economic Inequality and Poverty: International Perspectives, M.E. Sharpe, Armonk, New York, 1991.
- Johnson, S. (1995) "More Evidence on the Effect of Higher Unemployment on the Canadian Size Distribution of Income," Canadian Public Policy, Vol. 21, No. 4, December 1995, pp. 423-428.
- Kelvin, P. and J.Jarrett (1985) Unemployment: Its Social Psychological Effects, Cambridge University Press, Cambridge.
- Ketso, V. (1988) "Work and the Welfare Costs of Unemployment," Ph.D. thesis, Economics Department, Dalhousie University, Halifax, 1988.
- Kneebone, R.D. (1996) "Four Decades of Deficits and Debt," pp. 39-70 in L. Osberg and P. Fortin (1996) Unnecessary Debts, James Lorimer & Company, Toronto, 1996.
- Lemieux,T.(1993) "Unions and Wage Inequality in Canada and the United States" pp 69-108 in D. Card and R. Freeman Small Differences that Matter: Labour Markets and Income Maintenance in Canada and the United States NBER University of Chicago Press, Chicago 1993
- Lin, Z., C. Beach and G. Picot (1996) "Payroll Taxes in Canada," Analytical Studies, Statistics Canada, Ottawa, 1996.

- MacLean, B. and L. Osberg (1996) (editors) The Unemployment Crisis: All For Naught? McGill-Queens University Press, Montreal and Kingston, forthcoming, 1996.
- MacPhail, F. (1996) "Three Essays on Trends in Poverty and Inequality in Canada," PhD thesis, Dalhousie University, Department of Economics, Halifax, 1996.
- Marmot, M.G. (1994) "Social Differentials in Health Within and Between Populations," pp. 197-216 in Daedalus: Journal of the American Academy of Arts and Sciences Health and Wealth, Fall 1994, Vol. 123, No. 4.
- McIsaac, S.J. and R.G. Wilkinson (1995) "Cause of Death, Income Distribution and Problems Response Rates," Working Paper No. 136, Luxembourg Income Study, December, 1995, Maxwell School of Citizenship and Public Affairs, Syracuse University, Syracuse, New York.
- Myatt, T. (1996) "Why We Know so Little about Unemployment Determination and the Effects of Unemployment Insurance?" pp. 107-128 in The Unemployment Crisis: All For Naught? B.K. MacLean and L. Osberg eds. (1996).
- Orcutt, C., S. Caldwell and R. Wertheimer (1976) Policy Exploration Through Micro-Analytic Simulation, Washington, DC, The Urban Institute.
- Osberg, L. (1995) "Concepts of Unemployment and the Structure of Employment," Economie Appliquée, Vol. XLVIII, 1995, No. 1, pp. 157-181.
- Osberg, L. (1996) "Unemployment Insurance and Unemployment - Revisited," pp. 75-106 in B.K. MacLean and L. Osberg, The Unemployment Crisis: All For Naught? (1996).
- Osberg, L., S. Erksoy and S. Phipps (1996) "Unemployment, Unemployment Insurance and the Distribution of Income in Canada in the 1980s," forthcoming in The Distribution of the

- Economic Well-Being in the 1980s-An International Perspective P. Gottschalk, B. Gustafsson and E. Palmer (editors), Cambridge University Press.
- Osberg, L. and P. Fortin (1996) Unnecessary Debts, James Lorimer & Company, Toronto, 1996.
- Osberg, L., D.Gordon and Z. Lin (1994) "Inter-regional Migration and Inter-industry Labour Mobility in Canada: A Simultaneous Approach," Canadian Journal of Economics, Vol. XXVII, No. 1, February 1994, pp. 58-79.
- Osberg, L. and S. Phipps (1993) "Labour Supply with Quantity Constraints: Estimates from a Large Sample of Canadian Workers," Oxford Economic Papers, Vol. 5, No. 2, pp. 269-291.
- Osberg, L. And S. Phipps (1994) "The Distributional Implications of Unemployment Insurance - A Micro simulation Analysis," Department of Economics, Dalhousie University, February 1994, mimeo.
- Phipps, S. (1990) "Quantity Constrained Household Responses to UI Reform," Economic Journal, Vol. 100, pp. 124-140.
- Phipps, S. (1991) "Behavioural Response to UI Reform in Constrained and Unconstrained Models of Labour Supply," Canadian Journal of Economics, Vol. 14, No. 1, pp. 34-54.
- Poloz, S.S. (1994) "The Causes of Unemployment in Canada: A Review of the Evidence," Working Paper No. 94-11, Research Department, Bank of Canada, Ottawa, November 1994.
- Samson, L. (1985) "A Study of the Impact of Sectoral Shifts on Aggregate Unemployment in Canada," Canadian Journal of Economics, Vol. 18, No. 3, pp. 518-530.
- Sargent, T.C. (1995) "An Index of Unemployment Insurance Disincentives," Economics Studies and Policy Analysis Division, Department of Finance, Ottawa, Working Paper No. 95-10.

- Schofield, D. (1996) "The Impact of Employment and Hours of Work on Health Status and Health Service Use," Discussion Paper No. 11, National Centre for Social and Economic Modelling, University of Canberra, March 1996.
- Setterfield, M.A., D.V. Gordon and L. Osberg (1992) "Searching for a Will O' of the Wisp: An Empirical Study of the NAIRU in Canada," European Economic Review, Vol. 36, 1992, pp. 119-136.
- Thiessen, G. (1995) "Uncertainty in the Transmission of Monetary Policy in Canada," the Hermes-Glendon Lecture, York University, Toronto, March 30, 1995, Bank of Canada, mimeo, Ottawa, 1995.
- Waldmann, R.J. (1992) "Income Distribution and Infant Mortality," Quarterly Journal of Economics, pp. 1283-1302, November 1992.
- Wilkinson, R.G. (1994) "The Epidemiological Transition: From Material Scarcity to Socially Disadvantaged?" pp. 61-77 in Health and Wealth, Vol. 133, No. 4, Fall 1994, Daedalus, Journal of the American Academy of Arts and Sciences.
- Wilkinson, R.G. (1995) "Health, Redistribution and Growth," in Paying for Inequality: The Economic Cost of Social Injustice, edited by Andrew Glyn and David Miliband, IPPAR/Rivers Oram Press, London (1993).
- Wolff, E.N. (1991) "The Inequality of Wealth," pp. 92-133 in L. Osberg (editor) Economic Inequality and Poverty: International Perspectives, M.E. Sharpe Publishers, Armonk, New York, 1991.