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ECONOMIC INSECURITY

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Tony Eardley
Editor

Abstract

'Economic insecurity' is rarely discussed in the professional economics literature and has received little emphasis in recent economic policy making in OECD nations. This paper argues that economic insecurity should receive more attention, because it affects individual well-being, personal identity and labour market behaviour - and because the welfare state was largely motivated by a desire to decrease insecurity. The paper then examines trends in the economic implications of four sources of economic insecurity - illness, unemployment, 'widowhood' and old age - and discusses the differences between 'economic insecurity' and 'risk', before turning to a discussion of how best to measure economic insecurity.

1 Introduction

If one reads the popular press,¹ or examines public opinion polls, or talks to one's neighbours, it is hard to escape a concern with rising levels of economic insecurity in the 1990s in many Western economies. Referring to the US, *Fortune* has argued that: 'Today, a queasy sense of insecurity haunts many working people. Wave after wave of corporate restructuring has knocked away the underpinnings of career-long employment that sustained workers' confidence in their future' (Richman, 1995: 107). The business press has repeatedly suggested that a change in workplace culture in the 1990s has produced increased insecurity. As Trinca (1998) puts it:

At the core is a change in the philosophy of the deal between an employer and the employee ... The message to employees is that employers see them as dispensable resources, that they are assets to be used for the duration of the employer's needs, and 'if a new model comes out you could find yourself obsolete' ... It is the moving goal posts that bother people: the notion of justifying yourself constantly to your boss simply didn't exist for most people 20 years ago. (Trinca, 1998, E2)

These journalistic accounts of workplace change² are consistent with polling data on the prevalence of subjective feelings of economic insecurity. In repeated polls throughout the 1990s, only a minority of Canadians have been willing to disagree with the statement: 'I feel that I have lost *all* control over

1 Dominitz and Manski begin their article summarising polling data on insecurity with the statement: 'During the first few months of 1996, economic insecurity became a focus of media attention in the United States' (1997: 262).

2 Case studies of a cross section of Canadian firms reveal the same pattern (see Osberg, Wien and Grude, 1995).

my economic future' (emphasis added; see EKOS, 1996³). As well, industrial relations specialists have noted that job security provisions have been at the centre of collective bargaining in many countries, as workers have sought protection from the personal implications of labour market 'flexibility'. Since no one has a stronger vested interest in reading the public mood than an opposition politician, some election slogans now promise an end to insecurity (e.g. 'Security and Opportunity', adopted by the Australian Labor Party in 1998).

However, these concerns about rising economic insecurity seem curiously disconnected from the thrust of much current economic policy. In its 1995 Jobs Study, the OECD asked: 'Does the present situation call for any change in the medium-term strategy of sound public finances, low inflation and structural reform which was agreed by OECD member countries in the first half of the 1980s?' (OECD, 1995: 59). The answer provided (i.e., No - the high unemployment of the last 15 years is just coincidental) may not be entirely convincing, but the thrust of policy has been clear. For well over a decade, OECD countries have been committed to a cluster of policies aimed at encouraging macroeconomic stabilisation, structural adjustment and the globalisation of production and distribution.

Unfortunately, the practical meaning of 'structural adjustment', and of policy measures to increase 'labour market flexibility', has often been to increase the probability that some workers will lose their jobs and to decrease the social transfers that they receive when not working. The acceleration of computer based technological change in the 1990s would, in any event, have

3 EKOS Research Associates has repeatedly asked a sample of Canadians to agree or disagree with the statement 'I feel I have lost all control over my economic future.' Although this must be considered a toughly worded statement, the percentage agreeing was 52 per cent in October 1993, 43 per cent in February 1994, 47 per cent in November 1994 and 48 per cent in August 1995. In April 1996, 42 per cent agreed. (A further 16 per cent neither agreed nor disagreed in April of 1996 - leaving only 42 per cent of Canadians who were willing to say that they felt they had control at all over their economic future). The percentage agreeing with the statement, 'I think there's a good chance I could lose my job in the next couple of years' was, at the last four dates, 41, 42, 44 and 44 per cent. (EKOS Research Associates, 1996: 82, 84).

increased the risks of job loss, but there has also been an international trend to reducing the social protections of the welfare state. In addition, globalisation has increased the exposure of firms and workers to the shifting currents of international trade, but national governments are increasingly constraining themselves by new treaty obligations which preclude macroeconomic or trade policy interventions to protect domestic employment. The combination of an increased rate of labour market change and decreased protections from the adverse consequences of change has inevitably produced greater economic insecurity.

Why has economic policy paid so little attention to economic insecurity? Is it: because economic insecurity is unimportant, or because popular perceptions of increased economic insecurity are wrong, or because economists do not know how to think about economic insecurity?

Although the operation of any economy will always produce some level of economic insecurity, and although people clearly view economic insecurity as important, if one reads the academic economics literature, one will almost never find mention of this term.⁴ It is clear that economists have often been concerned with ‘risk’.⁵ However, ‘risk’ is not the same as ‘insecurity’,⁶ and it is important to be clear about the differences.

4 To be precise, in the ECONLIT database from 1969 to December 1997, there are nine matches to the term ‘economic insecurity’. A search of the Social Sciences Index from 1983, and the PAIS International and PAIS Periodicals/Publisher Index from 1972, yielded eleven matches. The Social Sciences Citation Index for the years 1987 to 1997 was similarly unproductive.

5 In the ECONLIT CD-ROM database, entering the keyword ‘risk’ produces 12 936 matches in the professional economics literature published between 1969 and December 1997.

6 Anxiety is a key part of insecurity – see Section 4 – but those who can avoid risk, or who can purchase insurance against risk, have no reason to feel anxious about the future. In modern economies, a wide range of insurance and risk avoidance strategies are potentially available to individuals. Whether or not these strategies actually succeed in avoiding unwanted risk, and at what cost, will determine whether people feel ‘insecure’. It may be a telling comment on the perspective of economists that in the ECONLIT database, there is no match at all to a pairing of the keywords ‘risk’ and ‘anxiety’.

The plan of this paper is to begin in Section 2 by asking: ‘Why might economic insecurity matter?’ In order to establish a *prima facie* case on trends in economic insecurity, Section 3 presents some Canadian statistical evidence on the economic risks associated with sickness, old age, unemployment and ‘widowhood’. Section 4 then asks what exactly is meant by the term ‘economic insecurity’, as distinct from risk. Section 5 considers how the economic insecurity of individuals can sensibly be aggregated so that trends in the overall level of economic insecurity in society can be measured. Section 6 presents a conclusion.

2 Why Might ‘Economic Insecurity’ Matter?

One reason to think that economic insecurity might ‘matter’ is the fact that governments have spent a lot of money, over many years, to reduce it. Increasing the economic security of the populace has been a major goal of the welfare state, which has produced substantial levels of public expenditure in all developed economies. Indeed, Article 25 of the United Nations’ Universal Declaration of Human Rights (1948) declared economic security to be a basic human right:

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other loss of livelihood in circumstances beyond his control. (United Nations, 1948, Article 25)

From the origins of the welfare state in Bismark’s Germany to the present day, in most of the industrialised countries, the expenditures of ‘social insurance’ programs have considerably exceeded expenditures under

means-tested programs.⁷ Most of the expenditures of the welfare state have not redistributed resources from the rich to the poor, considered in an *ex ante* lifetime sense. Rather, social insurance programs have redistributed between contingencies, by providing benefits, in cash or in services, to all eligible beneficiaries who experience a specific loss, or who meet specified criteria.

For example, public health insurance provides benefits, to those who become ill, in the form of health care services, irrespective of the income levels of patients. Cash transfer programs, such as old age pension, workers compensation and unemployment insurance,⁸ pay benefits to those who become elderly, have workplace accidents or become unemployed. In most countries,⁹ the benefits obtainable under such programs are calculated as a fraction of prior earnings and are not means tested, which ensures that these programs yield significant benefits to the previously affluent. Because social insurance programs have been much larger than programs that are targeted exclusively on the poor, most of the cash transfers of the welfare state have redistributed income between different years of the same individual's life, or between the different contingencies which may befall similar individuals.

The broad term 'social insurance', and the specific events enumerated in the UN Universal Declaration of Human Rights, include some very different types of 'risk', with different rationales for public involvement. Sickness, disability and widowhood may be reasonably supposed to be exogenous

7 In Canada, total expenditure under social assistance was \$15.898 billion in 1994/95, compared to \$51.9 billion paid out as under public health insurance, \$19.761 billion in CPP/QPP pensions and \$15.041 billion in Unemployment Insurance benefits. Although these latter programs are not means tested, they do redistribute income and they do prevent poverty, because of differential probability of claim (e.g. the higher probability of unemployment among lower wage workers), some features of program benefit schedules and the fact that their benefits are a larger fraction of lower incomes. Social insurance programs provide greater relative benefits to the poor than to the rich – but that is not the main *purpose*.

8 In the UK and Australia, unemployment benefits are flat rate, adjusted for family size.

9 Australia is a notable exception, because of its means-tested unemployment benefits and seniors' pensions.

hazards to which individuals are involuntarily exposed, and the moral rationale for state involvement is that these events correspond to ‘loss of livelihood in circumstances beyond one’s control’. However, it is also clear that these are insurable risks, for which private sector markets exist,¹⁰ even if the cost and availability of such insurance may be less than actuarially fair.

On the other hand, unemployment insurance is not generally available at all in the private sector. Unemployment is a risk that, owing to the possibility of self-selection of insurance purchasers and the correlation of claims in recessions, cannot feasibly be privately insured. The practical rationale for public provision is, therefore, that individuals would otherwise have no insurance at all against loss of earnings. However, economists have also long debated the extent to which individuals can control their own experiences of unemployment (see Atkinson and Micklewright, 1991; and Osberg, 1996); to the extent that unemployment is in fact ‘voluntary’, the case for public provision of unemployment insurance may be weakened.

Finally, although old age security is a major area of public expenditure, it is clear that ‘old age’ is not a ‘risk’ at all. Lower living standards in old age (because of inadequate savings or a lack of pension rights from prior employment) are a compound risk, influenced by a myriad of individual decisions and events, but old age itself is entirely predictable.

Nevertheless, although these are very different sorts of risks, the objective of greater economic security has often been identified as the common element underlying the social insurance programs of the welfare state. Moss (1996), for example, argues that from the first years of labour legislation in the United States, reform organisations such as the American Association for Labour Legislation ‘were motivated primarily by the problem of worker insecurity’ (Moss, 1996: 2). As the US shifted with dramatic rapidity from

10 Life insurance could provide some protection against the risks of ‘widowhood’, defined literally. However, Section 3 will argue that the objective of Article 25 was to provide women and children with some protection against loss of access to male earnings, in a social context (1948) when single earner households were the norm and widowhood was the main route to single parent status. In 1998, marital breakup is the main risk, but this is uninsurable in private markets.

rural agriculture to urban industry in the late nineteenth century, workers lost access to established networks of social support in rural communities, as well as leaving behind the possibility of return to subsistence agriculture as a worst case option. With its frequent workplace accidents, bankruptcies and severe recessions, the factory system of the late nineteenth century continually exposed the ‘respectable working class’ to the risk of destitution.

Moss notes that the early proponents of social insurance included many prominent economists of the day,¹¹ who were able to gather support across a wide spectrum of opinion, at a time when political discourse on labour issues was highly polarised. This broad range of support produced significant legislative success, and was undoubtedly assisted by the ambiguous nature of social insurance proposals in combining radical and conservative objectives.¹² Moss characterises the economist-reformers as ‘socially minded defenders of capitalism’ (1996: 14), who did not propose (as the Marxists did) to socialise capital, but instead proposed the socialisation of risk.

As Commons later put it in his autobiography: ‘I was trying to save Capitalism by making it good’ (quoted in Moss, 1996: 66). The case for social insurance was made on several levels. The Progressives argued on moral, political and economic grounds against ‘wasting labour’. Under the slogan of ‘the conservation of human resources’, they decried the immorality, and the ‘social parasitism’, with which corporations used workers, only to discard them when ill, injured or unprofitable to employ. The Progressive economists believed in the capacity of capitalism to increase wealth, but they argued that capitalism was politically vulnerable because: ‘The principal underlying cause of social unrest is the uncertainty of income of wage earners and small producers’ (Commons, quoted in Moss, 1996: 23). On purely economic grounds, they pointed to the efficiency costs of a system

11 R.T. Ely and J. R. Commons are probably the best known today, but other prominent supporters were Farnam, Seager, and Willoughby, Professors of Economics at Yale, Columbia and Princeton, respectively, (see Moss, 1996: 5)

12 Moss (1996: 19) notes that Commons, Ely and Adams all experienced significant problems with keeping their academic jobs after conservative Board members objected to radical statements, and all moderated their subsequent utterances considerably.

in which employers could generate (through workplace accidents, occupational illnesses or involuntary unemployment) negative externalities for families and for the broader society, while bearing no costs themselves. With the self-confidence of a new breed of ‘social scientists’, they argued that social insurance programs with experience rating would force firms to internalise these costs in their decision making.

In shifting the focus of American social policy from the relief of pauperism to the prevention of worker insecurity, the movement for social insurance built on two themes which ‘since colonial times have pervaded the American discourse on poverty – the preference for prevention over relief and the distinction between the so-called worthy and the unworthy poor’ (Moss, 1996: 39). Social insurance would prevent poverty by automatically paying benefits in the event of circumstances beyond a family’s control that would otherwise deprive it of its livelihood. In addition, the emphasis on prevention encouraged mechanisms (such as the experience rating of Unemployment Insurance premiums) designed to reduce the risk of such events. The distinction between worthy and unworthy recipients of social support was maintained by separating the programs intended for the employable from programs meant for the non-employable, and by emphasising the contributory financing of social insurance programs. As Moss puts it, the distinction between insurance and relief has, ever since, ‘cast a shadow of suspicion over all non-contributory forms of welfare and helped to narrow the scope of politically acceptable social policy in the United States’ (Moss, 1996: 57). One of the social costs of a set of programs designed to safeguard the standard of living of the ‘honest worker’ was its omission of benefits for socially marginalised groups.¹³

The history of social insurance in the US is a useful case study, which illustrates the combination of motives that, in varying proportions, have impelled governments of widely differing political persuasions to create programs to reduce economic insecurity. Major social insurance initiatives

13 In the first years of Social Security in the US, for example, African-Americans drew relatively little in benefits, since agricultural labourers and domestic workers were initially excluded from coverage.

have been put in place by the Germany of Bismark and the Spain of Franco, as well as by the Sweden of the Social Democrats and the Canada of 1960s Liberals. For conservatives, the objective has been the maintenance of social stability, on the presumption that a society in which much of the populace is insecure is also a society in which the position of the ruling classes will be insecure. For reformers, the motivation has been improvement in the well-being of a population that dislikes insecurity. Both have accepted capitalism as a system, and attempted to make it function more effectively.

In addition to the fact that governments spend a lot of money to reduce economic insecurity, a second major reason why it is important is the direct impact of greater security on individual well-being. For example, a recent survey of Australian attitudes found that:

Job security has a substantial impact on satisfaction. In fact, job security and occupational status - the chief 'usual suspects' - are tied for first place as the most important source of job satisfaction: secure jobs and jobs that demand thinking, planning, and responsibility are much more satisfying than others. (Evans and Kelly, 1995)

However, job security is becoming less common - between 1989/90 and 1994 the percentage of Australians who reported themselves to be either probably or somewhat secure in their jobs fell by 16 percentage points (from 73 per cent to 57 per cent) (Evans and Kelly, 1995).

Recently, Akerlof and Kranton (1998) have explored the implications for economic behaviour of the idea that individuals may care about a sense of identity, as well as deriving utility from the consumption of commodities. They argue that the concept of identity - 'who people think they are, what type of person they conceive of themselves as being' - implies a set of *prescriptions* about 'what behaviour is and is not appropriate and what different actions mean to an individual and others in society' (Akerlof and Kranton, 1998: 1,6). In a society with clearly defined gender roles, for example, some behaviours (e.g. a 'breadwinner' or 'homemaker' role) may

be seen as integral parts of male and female identity. Akerlof and Kranton note that people often care deeply about such behaviours, whether performed by themselves or by others, over and above any impact these behaviours may have on their personal consumption of goods and services. They argue that behaviour inconsistent with societal prescriptions can be perceived as a threat to personal identity, and the reaction is typically emotionally cued and reflexive.

In practice, many prescriptions about appropriate role behaviour are closely linked to economic outcomes. Behaviour often costs money. The maintenance of a social identity depends partially on whether or not individuals have the discretionary income to purchase particular clothing or participate in their habitual leisure and community activities, as well as on such things as the type of automobile they drive (or whether or not they have one), and on whether or not they can 'support their family', etc. For many individuals, the sense of identity they have in society is hard to separate from observable manifestations of identity through consumption. As well, economic outcomes (such as the type of job a person has or the neighbourhood they live in) determine much of an individual's patterns of socialisation and status. Economic insecurity about these outcomes can, therefore, be highly threatening to personal identity. Of course, rapid cultural, as well as economic, change means that insecurity about economic outcomes interacts with other sources of insecurity about personal identity, but it is probably safe to say that economic insecurity magnifies their impact.

Economic instability may also interfere with people's ability to form lasting, meaningful relationships. Each job change means the loss of one set of co-workers and the necessity to form new ties with one's new colleagues. Each residential move depletes the 'social capital' that individuals have built up in reciprocal relationships with their neighbours. It is worth noting that such moves may have long term costs. Corak and Heisz (1998) examine the intergenerational transmission of earnings in a sample of Canadian men and their children and find that the frequency of residential mobility in childhood has a large and statistically significant negative impact on children's eventual adult earnings, controlling for all other influences.

In addition, rising levels of economic insecurity can be expected to change individual behaviour. These changes in behaviour may affect the reliability of economic forecasting, when individuals alter their labour market or asset decisions in response to greater perceived insecurity. Variations in economic insecurity (especially employment insecurity) have a major influence on 'consumer confidence', which in turn influences expenditure plans on a wide range of consumer durables. In particular, Haurin (1991) has examined the role played by income variability in influencing the home ownership decision. His conclusion - that a 10 per cent increase in income variability reduces home ownership by the same amount as a five per cent decrease in average income - implies that the accuracy of macroeconomic forecasting may be affected by greater economic insecurity.

More importantly, when individuals seek to minimise their personal level of economic insecurity, the micro-strategies available to them may be personally and socially inefficient. Rising unemployment may, for example, convince workers that there is an increased risk of future layoff if they should change jobs, because changing jobs implies they will lose the protection that their seniority in their current job now provides.¹⁴ A decision to avoid the risks of mobility will have personal costs and benefits, in the form of lower long-term wages and stronger workplace ties, and this decision will also impose costs and benefits on others. As Akerlof, Ross and Yellen (1988) have noted, labour mobility is a bit like the children's game of musical chairs, since each voluntary departure from a job opens up a vacancy that is potentially available to some one else. The productivity gain to labour mobility in the economy as a whole is the sum of the gains at each link in the 'mobility chain' of vacancies that opens up when an initial move is made, and the vacancy created by that departure is filled by someone who quits a job, leaving a vacancy somewhere else, etc. However, if no initial vacancy is created, none of the potential gains from subsequent mobility will be

14 For Canadian empirical evidence which supports this hypothesis, see Osberg (1991).

realised.¹⁵ Although individuals will consider their private costs and benefits when coming to a decision about labour mobility, no individual worker has an incentive to consider the externality which his or her mobility creates.

Enrolment in specialised training also represents a gamble on the future, since specialisation narrows the options available to an individual in the future. The decision to specialise is risky, since it ties the individual's fortunes to future demand and supply for a narrower specialty. No one can be totally sure that technological or market changes might not, in the future, reduce demand in a specific labour market, or that a specialty might not become swamped with excess supply. Faced with greater labour market insecurity, it may be a rational strategy for individuals to diversify their human capital portfolio, by acquiring generalist, rather than specialist, skills.

Unemployment insurance/assistance reduces the hazards associated with labour market mobility, and skills specialisation. Without some pooling of the risks associated with mobility and training, risk averse individuals may systematically under-invest in mobility and in specialised training, to the long-run detriment of productivity growth. In many respects, a well functioning labour market is a public good, for both employees and firms. By influencing the ways in which individuals can avoid economic insecurity, the social security framework has had an important influence on labour market efficiency, in the long run.¹⁶ Although there is a large literature on the possible labour supply impacts of social insurance programs, there has been much less emphasis in the economics literature on the potential costs and benefits of alternative worker strategies to minimise insecurity, if social insurance protection is less available. Clearly, social insurance programs have

15 Labour mobility also has costs, in the form of the loss of firm-specific human capital and the recruitment and hiring costs imposed on employers, which individual workers cannot be expected to factor into their decisions.

16 For example, in the US, several authors (e.g. Olson, 1994) have pointed to the potential social costs of 'job lock'. Employer paid health insurance can lock workers into their current jobs, for fear of the economic consequences of forgoing health care coverage for existing ailments, if they should change employers.

both administrative and behavioural costs. However, if (as has recently been the case), risk reduction through social insurance is becoming less available, what are the social costs and benefits of the alternative risk reduction strategies which individuals can follow?

As well as prompting individually ‘rational’ (but socially wasteful) risk avoidance strategies, insecurity may produce deeper dysfunctional responses. Borg and Elizur (1992) conclude that: ‘Employees with higher job insecurity cope with the potential loss by reducing the subjective value of the loss’ (1992: 14). Employees with a strong work ethic are those who have the most to lose, when they lose their jobs. Hence, it is those with the strongest work ethic who tend to have the strongest psychological withdrawal process. The effect of greater insecurity in producing decreased job commitment can be partially offset if social support is available to workers to reduce their sense of insecurity, but in general ‘job insecurity has a negative impact on employees’ commitment and motivation’ (Borg and Elizur, 1992: 25). Because one way of coping with the possibility of loss is to decide ‘I didn’t want it anyway’, long periods of employment insecurity are likely to be dysfunctional to maintenance of a ‘work ethic’.

In short, because the prevention of economic insecurity has been a major focus of the welfare state, because the existence of economic insecurity decreases the well-being of individuals, and because some individually rational strategies to avoid personal insecurity may be socially inefficient, economic insecurity is worth worrying about.

3 Trends in Economic Insecurity: A ‘Named Risks’ Approach

If there are some predictable objective risks which drive a public sense of economic insecurity, one indicator of trends in insecurity may be trends in

these underlying risks.¹⁷ Specifically, the risks of substantial economic loss due to illness, job loss, or family break-up, and the risk of destitution in old age, are the focus of the major social insurance programs of the welfare state, and are heavily influenced by policy decisions on the design of those programs. As already noted, the right to security in the event of unemployment, sickness, disability, widowhood, old age or other loss of livelihood in circumstances beyond a person's control is considered a basic human right in the UN Universal Declaration of Human Rights. Has there been a deterioration in 'economic security', as far as these risks are concerned?¹⁸

Economic Insecurity Due to Illness

In Dominitz and Manski's (1997) examination of subjective perceptions of economic hazards, the chance of being without health insurance coverage was explicitly assessed as a major life risk. Because of the absence of a universal system of health care coverage in the US, this is clearly a more important source of economic insecurity than in Canada or Australia. However, although Australians and Canadians pride themselves on having a universal system, there are increased anxieties about the functioning of the system and a trend towards restricting coverage of ailments and treatments.

The economic risks associated with illness are partly the risk of loss of earnings (the value of which varies with the level of earnings) and partly the risk of large out-of-pocket health care costs. Health Canada publishes a series on total health expenditures by sector (federal, provincial, municipal, workers' compensation, private). In 1991, private expenditure was \$16 848

17 The risks identified in this section have in common the characteristic that they refer to the chance of loss of personal livelihood. If private insurance coverage were available, individuals could try to insure against this event, but such coverage is typically not available. Neither is it feasible for individuals to diversify their portfolio of assets to offset such a risk, by purchasing an asset with a negatively correlated risk. Hence, examination of these specific named risks is not subject to the 'portfolio critique'.

18 Appendix One presents a time series chart of the risks discussed in this section; the underlying data are presented in Osberg and Sharpe (1998).

million in Canadian dollars, or 25.4 per cent of total health expenditure. The 1992 Statistics Canada Family Expenditure Survey shows average household expenditure on health care of \$1035, broken down into \$658 for direct costs to household (\$233 for medicinal and pharmaceutical products, \$138 for eye-care goods and services, and \$184 for dental care) and into \$378 for health insurance premiums (\$174 for private health care plans). These figures exclude expenditure on private health insurance premiums (since these are in fact a way of avoiding health care cost risk). A measure of the aggregate risk of health care costs can be derived by expressing remaining private expenditures on health care (net of health insurance reimbursements) as a percentage of total after tax personal income.

Expressed as a percentage of after tax personal income, private expenditures on health have risen 66.3 per cent, from 2.55 per cent in 1971 to 4.24 per cent in 1995, with almost all the relative increase taking place in the 1980s and 1990s. There may be a number of factors at work, including delisting of certain medical services provided in the past by provincial health plans, large increases in drug prices, the ageing of the population, supplier-induced increases in patient demand for health services, and medical advances that have produced medical services not previously available. However, the net result is a decreased level of insurance protection from the economic risks associated with illness.

Economic Insecurity and Unemployment

Job insecurity and the risk of unemployment are central to a conception of economic insecurity, indeed so central that occasionally they are assumed to be identical. Catalano (1991), for example, entitles his article 'The Health Effects of Economic Insecurity', but in fact proceeds to summarise the evidence on the health implications of unemployment. This importance is partly due to the central role of labour market earnings in family money income, but it is also due to the fact that paid employment is about more than money. As Jahoda (1979) has put it:

There are latent consequences of employment as a social institution which match 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 enforces activity.

It is these objective consequences of work in complex industrialised 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. (Jahoda, 1979: 423)

Because jobs have both economic and social/psychological functions, a full measure of insecurity in employment would not be solely economic. However, since the main objective of Unemployment Insurance (UI)¹⁹ was to reduce the insecurity of income flows that arises from periods of unemployment, a natural first measure of the economic insecurity associated with job loss is to ask how changes in the labour market environment and in unemployment insurance regulations have interacted to affect income variability. To answer this question fully, a detailed modelling of the changes in UI parameters, the mitigating behavioural changes they induce, and the state dependence of individual outcomes, is required. Osberg, Erksoy and Phipps (1998) have presented the results of a detailed microsimulation model of the Canadian labour market, which documents the utility losses associated with decreased income security.

19 In 1996, a major reform of Unemployment Insurance in Canada was instituted, which included a name change: to Employment Insurance (EI). What this paper refers to as the 'UI' system is now sometimes termed the UI/EI system, but this paper takes the view that the change of name was essentially cosmetic.

However, a simpler way of posing the question is to ask: What is the average conditional expectation of income loss due to unemployment? This can be further decomposed into the questions: ‘What percentage of the working age population experience unemployment?’ ‘What percentage of the unemployed receive unemployment benefits?’ and ‘How much of their pre-unemployment income is replaced when they are on benefit?’ The percentage of people experiencing unemployment is the product of the labour force participation rate and the unemployment rate; both have significantly increased over the 1971 - 1995 period in Canada. The extent to which the unemployed have, ‘on average’, been protected by UI from the financial impacts of unemployment can be modelled as the product of the percentage of the unemployed who claim regular UI benefits (which has declined precipitously in recent years, from approximately 90 per cent in 1990 to under 40 per cent in late 1997) and the percentage of average weekly wages replaced by UI.

In order to measure insecurity, it is the proportion of the unemployed not covered by UI, and the proportion of average weekly wages not replaced by UI that counts. Appendix One provides a chart of trends in unemployment risk in Canada between 1971 and 1995.²⁰ Overall, the index of unemployment risk rose 147 per cent between 1971 and 1995, with three of the four components of the index contributing to the rise. The participation rate rose 16.1 per cent from 58.1 per cent in 1971 to 67.5 per cent in 1995.²¹ The unemployment rate rose 53.2 per cent from 6.2 per cent to 9.5 per cent. The proportion of the unemployed not receiving UI benefits increased 146.5 per cent from 17 per cent of the unemployed in 1971 to 41.9 per cent in 1995. Only the proportion of the average weekly wage not replaced by UI showed an improvement, falling from 68.8 per cent in 1971 to 54.7 per cent in 1992, and remaining at approximately that level since.

20 Defined as: (the percentage of adults who participate in the labour force) * (the unemployment rate) * (1- regular UI claimants as a percentage of the unemployed) * (1- average UI benefits as a percentage of average weekly wages). Appendix One charts yearly data on these variables.

21 The trend participation rate has been used. It is assumed equal to the actual participation rate in the 1970s and 1980s. In the 1990s, the actual participation rate has fallen for cyclical reasons. Consequently, the actual participation rate in 1989 has been assumed to represent the trend rate in the 1990s.

As a summary of available protection from the financial risks of unemployment, the percentage of the unemployed receiving unemployment benefits can be criticised on many grounds. It mingles the combined influence of the percentage of the unemployed who do not qualify for benefits (e.g. if they have insufficient weeks of employment, or if they quit or were dismissed ‘for cause’), with those who do not apply for benefits and those who exhaust their benefits before finding employment. It can be criticised as understating the impact of unemployment to the extent that discouraged workers cease active job search and are no longer classified as unemployed (whether on UI or not), and as overstating unemployment to the extent that unemployment is ‘voluntary’. It does not reflect at all the percentage of individual income replaced or the family income situation of the unemployed. Nevertheless, it is an easily available and easily understandable measure. If the issue is *trends* in the social protection available against direct financial loss due to unemployment, it is probably not a bad reduced-form statistic, since there is little evidence of offsetting trends.

The insecurities created by the possibility of job loss, however, include both the immediate costs of unemployment and any loss in wages when another job is eventually located. Workers whose human capital is highly firm-specific, or industry-specific, may experience very significant wage losses when firms restructure. Even if they now have employment, workers with specialised credentials, or with skills that are not portable, are continuously exposed to the risk of downward economic mobility. In an era of relentless media attention to corporate restructuring, technological change and globalisation, their sense of anxiety about their economic future may be acute. Anxiety about the future is likely to be influenced both by media commentary and by word of mouth familiarity with local cases of downward mobility following job loss, as well as by the immediate costs of an unemployment spell.²²

22 Even if the aggregate distribution of earned income retains the same shape, a greater amount of mobility in that distribution will generate greater insecurity. The empirical issue is how many wage earners experience large negative shocks to their earnings, e.g. a 40 per cent drop, for two years or more. Osberg, with Erksoy and Phipps (1994) present a microsimulation model of the extent of labour market ‘churning’.

Economic Insecurity and ‘Widowhood’

Fifty years ago, when the United Nations’ Universal Declaration of Human Rights was written, security in the event of widowhood was included as a basic human right. At that time, just after World War II, the death of the male breadwinner of a ‘traditional’ family was the principal way in which single parent families were actually formed. Then as now, a single parent family was extremely likely to be poor. Hence, the reason for specifying security in the event of widowhood was to protect women and children from the loss of their livelihood, through the loss of access to the earnings of the male breadwinner.

In the social reality of the 1990s, the ‘male breadwinner’ model of the family is no longer empirically or normatively dominant, and the main way in which single parent families are formed is by divorce or separation. However, the economic consequences for women and children of the loss of access to male earnings remain acute; as the saying goes, many women and children are still ‘one man away from poverty’. The rate and depth of poverty is particularly high for single parents, and divorce or separation often has significant economic consequences, in many cases involving major life style changes.

Trends in this aspect of economic insecurity can be modelled as the product of: (the percentage of the adult population who are married women with children) * (the probability of divorce) * (the poverty rate among single parent families) * (the average poverty gap ratio among single parent families). Appendix One presents a graph showing these trends.

The proportion of the Canadian population made up of married women with children under 18 has been very stable, at around 44 per cent over the 1971-1995 period. However, the divorce rate has more than doubled over the period, rising from an annual rate of 0.59 per cent per legally married couple in 1971 to 1.22 per cent in 1995. The poverty rate for lone parent females rose 28.3 per cent between 1971 and 1995, while the average poverty gap ratio fell 27.2 per cent. The overall index rose 67.0 per cent, indicating a major increase in the risk of ‘widowhood’.

The Risk of Poverty in Old Age

Humans are inevitably unable to depend on their own labour earnings at the beginning and at the end of the life cycle. Knowing this, the prospect of poverty in old age can be a source of economic insecurity, as individuals age and the retirement period comes more closely into view. Whether or not people are poor in their old age depends on the accumulation of a lifetime of decisions and events, particularly those surrounding the acquisition of pension rights and asset accumulation. The probability of accumulating wealth, and pension entitlements, over the life cycle is conditioned by the earnings and pension coverage of the sequence of jobs an individual moves through, by their family status over the life course (including both spousal earnings and any asset splitting on divorce), by their own savings decisions and by the riskiness of their investment strategy. Since the population is highly diverse in its characteristics, there are a huge number of possible combinations of circumstances.

In principle, forward looking individuals should think about these issues from the time they enter adulthood, but as a practical matter, one can probably assume that people under 45 do not usually worry much about their retirement years. If so, the economic insecurities of advancing age are chiefly experienced by those aged 45 to 64. How many of them are anxious about their financial well-being in their old age? As a rough and ready indicator of the extent to which anxiety about old age is justified, there is nothing like asking: 'How many Canadians now end up poor in their old age?' Some of the anxieties felt by the middle aged are surely due to their observation of what actually happens now to those who are a few decades older than themselves. Although calculating the percentage of senior citizens who are poor depends crucially on the poverty measure and income definition used,²³ one indicator of perceptions of the risk of poverty in one's old age, is the Statistics Canada Low Income Cut Off (LICO) criterion, which is based on household money income.

23 Osberg (1998) notes that the percentage of the elderly identified as poor is extremely sensitive to the exact level at which the poverty line is drawn, since the incomes of many elderly are concentrated in a rather narrow range.

If one adopts this criterion of poverty, the elderly poverty rate has plummeted over the last 25 years, falling 63.3 per cent from 56.6 per cent in 1971 to 20.8 per cent in 1995, with all the fall taking place in the 1970s and 1980s. Equally, the average poverty gap ratio has fallen 49.1 per cent over the same period, from 33.2 per cent to 16.9 per cent. Consequently, the overall index of risk from old age has fallen from 1.0 in 1971 to 0.142 in 1995, a drop of 85.8 per cent.²⁴

Discussion

Appendix One provides a visual picture of trends in these four specific risks in Canada over the last 25 years. It is clear that the ‘good news’ is the reduction in the risk of poverty in old age, but the ‘bad news’ is the increase in economic risks experienced by the population of working age. In addition to the named risks identified here, the working age population bears the risk of occupational mobility and earnings loss. However, since the increases in economic risk considered here are heavily influenced by economic policy choices on such issues as the coverage of health insurance, the qualification requirements for unemployment insurance or the social assistance support level for single parents, Canadian public policy has had a major influence on these trends. Why is it then that the economic analysis that motivates current policies pays so little attention to economic insecurity?

4 What Exactly is ‘Economic Insecurity’?

Insecurity and Risk

Section 2 has argued that economic insecurity is an important issue and Section 3 has noted that in Canada the economic risks associated with unemployment, illness and widowhood have risen over the past two decades - in part because of deliberate economic policy decisions. However, ‘economic insecurity’ has not yet been exactly defined. Do these trends in specific risks

24 Note that in Appendix One, in order to follow the graphical convention that improvements are an upward graphical movement, we multiply the index of ‘risk’ by -1 , and thereby convert it into an index of ‘security’.

correspond to trends in ‘economic insecurity’? Economists have written a great deal about ‘risk’, but very little about ‘insecurity’; what exactly is the difference? If risk and insecurity differ in conception, and if economists only know how to talk about risk, is the language of economics adequate to the policy problem of reducing economic insecurity? Is the framing of economic policy choices in terms of the language of economics part of the reason why economic policy has paid little attention to economic insecurity in recent years?

‘Risk’ is usually defined in economics in terms of a probability distribution over future states of nature. Varian comments that ‘Most situations involving behaviour under risk can be put in this lottery framework’ (1992: 172). *The MacMillan Dictionary of Modern Economics* defines ‘risk’ as ‘a context in which an event occurs with some probability or where the size of an event has a probability distribution’ (Pearce, 1986: 373). Sometimes a distinction is drawn between ‘risk’ and ‘uncertainty’. For example, the *Penguin Dictionary of Economics* states:

A decision is said to be subject to risk when there is a range of possible outcomes which could flow from it and when objectively known probabilities can be attached to those outcomes. Risk is therefore distinguished from uncertainty, where there is a plurality of outcomes to which objective probabilities cannot be assigned. (Bannock, Baxter and Davis, 1987: 385)

The term ‘insecurity’ does not appear in dictionaries of economic jargon, but one ordinary dictionary’s definition of ‘insecure’ is: ‘not safe or firm; anxious, not confident’ (*Collins Gem Dictionary, Australian English*). Another dictionary defines it as: ‘(1) anxious or afraid, not confident or certain; (2) not adequately protected’ (*Collins Concise Dictionary Plus*); while a third (*The Macquarie Dictionary*) suggests: ‘exposed to danger, unsafe; not firm or safe (insecure foundations); not free from fear, doubt, etc.’, and a fourth succinctly states: ‘unsafe, not firm’ (*Concise Oxford Dictionary of Current English*).

Economic insecurity is the state of being economically insecure. Based on the common elements in the above dictionary definitions, a definition of ‘economic insecurity’ which reflects the common usage meaning of the term ‘insecure’ might be: ‘the anxiety produced by a lack of economic safety, i.e. by an inability to obtain protection against subjectively significant potential economic losses’. This definition has the advantage of sticking fairly closely to the generic meaning of the term ‘insecure’. However, it also includes four elements which may be problematic in economics: first, the emotional state (anxiety) produced by anticipation of future hazards: second, a qualitative distinction between ‘safe’ and ‘unsafe’ states; third, a subjective estimation of the probability and cost of losses; and fourth the existence of constraints on the risk avoidance options available to individuals.

4.1 Implications of Anxiety and the Concept of ‘Safety’

Although economists do not often discuss ‘anxiety’, the term ‘disutility’ is somewhat more common.²⁵ The two terms differ in that disutility is a more generic, less specific conception. The idea of disutility encompasses all sources of ‘negative satisfaction’, whether they arise from the actual present experience of unpleasant events or the present costs of the anticipation of future unpleasant events. Income risk arises when individuals receive incomes whose amount depends on uncertain future events. If individuals are risk averse, the disutility of income risk can in principle be measured as the difference between the expected value of an uncertain income stream and the certain income that would generate the same level of wellbeing.²⁶ Appendix

25 There are 20 matches with ‘anxiety’, and 51 with ‘disutility’ in the 1980 to 1996 ECONLIT CD-ROM.

26 Osberg, Erksoy and Phipps (1998) demonstrate how a micro-simulation model can be used to calculate the utility cost of increased insecurity – *if* insecurity is defined as the loss in certainty equivalent income which arises when income streams become more uncertain, due to higher unemployment and reduced availability of unemployment insurance benefits, *if* individuals accurately assess future objective probabilities and *if* individuals evaluate outcomes purely by end state, with no ‘loss aversion’. The current discussion can be seen as a critique of both this paper and of Osberg (1995).

Two presents the standard economic argument on the utility loss of risk-averse individuals facing an uncertain future.

‘Anxiety’, however, is necessarily both forward-looking and a more subjective conception. As Riskind (1997) puts it: ‘The concept that perceived threat is a cognitive antecedent of anxiety is central in clinical psychology, personality psychology and social psychology’ (Riskind, 1997: 685). ‘Perceived threat’ is inherently subjective in nature, since an objective danger of which people are unaware produces no anxiety at all.

Moreover, an important dimension of anxiety is the patterned interaction between subjective assessments of risk and objective indicators of hazards. As Wells and Matthews (1996) put it: ‘It is well established that anxious individuals show bias in selective attention. They are prone to material whose content is threatening in preference to positive or neutral material’ (Wells and Matthews, 1996: 422). Riskind (1997) notes that movement or change is an important trigger for anxiety responses in many experimental situations and proposes a model of ‘looming vulnerability’ as a way of explaining both pathological and normal anxiety. He stresses the positive adaptive functions and species survival value of anxiety as a mobilisation response in a threat situation. As he puts it: ‘Looming vulnerability is ... an important cognitive component of threat or danger that elicits anxiety, sensitises the individual to signs of movement and threat, biases cognitive processing, and makes the anxiety more persistent and less likely to habituate’ (Riskind, 1997: 685).

One can easily see how, in primeval times, once a danger had been recognised, some degree of heightened awareness and selective attention would have been very useful in threat situations. The anxiety response is likely to have been biologically advantageous during human evolution, and have therefore become part of normal human genetic programming.²⁷ However, central to that response is a qualitative distinction between ‘threat’

27 Riskind notes that the distinction between pathological and normal anxiety levels is, in this framework, one of the relative degree of reality distortion in threat assessment, which is partly driven by the rigidity of ‘fear scripts’ based on trigger stimuli and maladaptive pessimistic interpretations of past events. See also Beck and Clark (1997).

and ‘no threat’ situations, and a degree of selective attention and heightened sensibility when a threat is perceived. In defining ‘insecurity’, it is therefore useful to draw a distinction between the disutility of unwanted risk and the anxiety produced by a lack of safety. This distinction highlights the subjective nature of insecurity, the possibility of a qualitative distinction between threat (unsafe) and no-threat (safe) situations and the probability of biases and exaggeration in subjective perceptions of hazards.

Furthermore, the distinction between disutility and anxiety may be important for understanding trends. Anxiety responses are triggered by changes, since ‘in general, the perceptual and nervous systems detect changes in things rather than static things’ (Riskind, 1997: 698). Known hazards, of an unchanging nature, may generate an objective probability of harm, but will not generate a corresponding degree of insecurity, if individuals become habituated to that risk. However, much of the economic change of the 1990s has taken the form of a greater exposure of individuals to market processes. Markets are always changing, and one of the intended outcomes of a transition to a more market driven economic system is the fact that constant attention to market movements has become more important, to more people. Constant change in the stimulus that produces anxiety implies that individuals are unlikely simply to become habituated to a new level of objective risk.

Also, as the saying goes, ‘once bitten, twice shy’: anxiety responses are more likely to be observed in individuals who have had a direct prior personal experience of a negative event. The accumulation of experiences with corporate downsizing, recessions, and so on, means that the stock of such individuals is a growing fraction of the population. As a result, over and above the influence of the structural labour market changes that have increased objective labour market risk (see Osberg 1995, 1998), there may be reason to believe that rising economic anxiety is a secular trend.

Subjective Estimation of the Costs of Hazards

Anxious individuals may perceive risks differently from non-anxious people, but even for the non-anxious, the ways in which humans actually process

cognitive risk information may be important for the distinction between risk and insecurity. Graduate texts in micro-economic theory typically devote considerable space to analysis of the problem of optimal rational choice among risky or uncertain alternatives. However, several texts (e.g. Kreps, 1990) draw a clear distinction between the study of rational choice as a *prescriptive* exercise that may help to improve decision making or as a *descriptive* exercise that models how people actually behave.

As Kreps (1990: 112) notes, the predominant approach in economics is to model the problem of rational choice as the maximisation of expected utility, and to weight the utility to be derived from any future outcome by the probability of that outcome occurring. In maximisation of expected utility, subjective assessments of probabilities are assumed not to diverge systematically from objective probabilities and small changes in probabilities are assumed to receive the weight that such changes mathematically deserve. If all this were empirically true, there would be no obvious meaning to be ascribed to such qualitative terms as ‘safe’ (other than as an approximation to a very low probability of occurrence) and no behavioural implication would be expected from very small changes in probability.

However, all major micro-theory texts acknowledge that there are significant problems with this approach as an empirical prediction of how people actually behave. Actual behaviour in the presence of risk is influenced by how people form estimates of the probability of future events, how they evaluate probabilities and how they evaluate the costs of possible losses and the benefits of possible gains.²⁸

28 Kreps (1990) notes that in the standard model ‘Individuals are assumed to understand to an amazing extent the environment within which they act, and it is assumed they can perform fantastic calculations to find their own best course of actions at no cost and taking no time. This is, of course, ridiculous. Faced with complexity, individuals resort to rules of thumb, to “back of the envelope” calculations, to satisficing behavior (taking the first satisfactory alternative that arises) and the like. It seems patent that such limitedly rational behavior would, when placed in a complex economic context, have important implications’ (Kreps, 199:119).

In thinking about the personal decisions of individuals, it seems too narrow a definition to restrict the term risk to include only those decisions for which objective probabilities are available, because that is relatively rare. Although a process that is designed to be random (like a lottery draw) will have 'objective' probabilities of outcomes, large sample information on other processes (like heart disease or layoff or an accident while driving home) is fundamentally different. The objective probability of such outcomes is really the average incidence in a defined sub-population. In reporting the influence of variables, such as age or weight, on the probability of occurrence of an event, statisticians ignore the details of individual cases.

However, in each person's own life, many details are known, even if their degree of influence on outcomes is not. In personal decisions, there is no escaping the small sample problem, or the problems of limited information and constrained information processing capacity. We never get to do repeated samplings from the probability distribution of future events and thereby assess the objective probability distribution of outcomes. Instead, we all know that the uniqueness of our own characteristics and our own particular combination of circumstances means that large sample information from the population at large is only partially applicable to our own case.

Hence, the problem of how to form subjective estimates (which can never fully be checked against an objective probability distribution) is inescapable. There is considerable evidence that people use predictable heuristic devices to help solve this problem of probability estimation. Even for the statistically sophisticated, these heuristics diverge in predictable ways from a 'rational' Bayesian approach. In forming estimates of the probability of events, people tend to be insensitive to prior probabilities, to sample size information, and to the predictability of events. Subjective estimates are often influenced by such misconceptions of chance processes as expecting heads after a run of tails in tossing a coin, and people tend to 'anchor' probabilities in such initial estimates as equal probability. As well, subjective probability estimates are heavily influenced by the availability of illustrative instances and the imaginability of possible outcomes. (For further discussion, see Tversky and Kahneman, 1974; and Kahneman, Slovic and Tversky, 1982).

Once a subjective probability estimate has been formed, how is that information processed? A large body of empirical research has presented experimental subjects with stated probabilities of events and has demonstrated the prevalence of ‘irrational’ choices when individuals are faced with very small probabilities, with probabilities of uncertain magnitude and with choices that are ‘framed’ in different ways.²⁹ In estimating probabilities, the evidence is that ‘individuals rescale probabilities, with more weight (proportionately) given to small probability events’ (Kreps, 1990: 116). These experiments are quite distinct from the literature on anxiety, or that on the formation of subjective probabilities, since they typically take the form of volunteer subjects choosing between alternative prospects of gain, with defined probabilities, i.e. there is no uncertainty and no prospect of unwanted negative outcomes.

The formation and processing of probability estimates are two separable issues, and the evaluation of outcomes is a third issue. In a long series of papers, Tversky and Kahneman have argued that:

... the outcomes of risky prospects are evaluated by a value function that has three essential characteristics. *Reference Dependence*: the carriers of value are gains and losses defined relative to a reference point. *Loss Aversion*: the function is steeper in the negative than in the positive domain; losses loom larger than corresponding gains. *Diminishing Sensitivity*: the marginal value of both gains and losses decreases with their size. (Tversky and Kahneman, 1991: 1039)

They justify these propositions by citing a great deal of experimental evidence designed to distinguish between loss aversion in outcomes and the

29 ‘Framing’ – whether a nuclear power plant is portrayed as having a 99.9 per cent chance of safety or a 0.10 per cent chance of meltdown – has been shown to be crucial in many contexts. See also Kreps’ discussion of the Allais and Ellsberg paradoxes (1990: 112-120) or the discussion by Slovic, Griffin and Tversky (1990) of the importance of compatibility and framing in perception.

conceptually distinct issues of risk aversion and the estimation and processing of probabilities. They argue:

The value function appropriately reflects three basic facts: organisms habituate to steady states, the marginal response to change is diminishing and pain is more urgent than pleasure. The asymmetry of pain and pleasure is the ultimate justification of loss aversion in choice. Because of this asymmetry a decision maker who seeks to maximize the experienced utility of outcomes is well advised to assign greater weight to negative than to positive consequences. (Tversky and Kahneman, 1991: 1057)³⁰

All these issues - how people form subjective estimates of probabilities, how they process probability information and how they evaluate losses - interact in their implications for a conception of individual economic insecurity, and how it might differ from risk. Losses appear to matter more than gains and objectively small probabilities of vivid losses can matter disproportionately. Furthermore, in the real world the inability of individuals to deal 'rationally' with very small probabilities of loss and the prevalence of anxiety responses often occur simultaneously.

One way to appreciate the importance of these issues is to consider a specific case - such as the public furore over Creutzfeldt-Jakob ('mad cow') disease in the mid-1990s. The assertion that there was a possible link between the occurrence of Creutzfeldt-Jakob disease in humans and feeding practices in the UK beef industry had major implications. It produced a dramatic loss in markets for UK beef, provoked a major international row between the UK and its European Community partners, and eventually forced the slaughter of some 200 000 animals.³¹ Somewhat lost in all the anxiety was the fact that

30 Tversky and Kahneman (1991:1054) suggest that in practice losses have about twice the utility impact of gains, in both risky and riskless choices.

31 In the popular press there are a continuing series of newspaper articles such as Cooke (1998), which 'charts the terrifying path of a killer disease'.

the disease in question has an underlying incidence in the population of less than one in a million (0.83 per million in the US, between 1986 and 1988). The suspect cases identified comprised, at most, six per cent of confirmed cases between 1990 and 1996 (see Cousens et al., 1997). Hence, the change in probability of infection was of the order of one in 20 million (*if* indeed there was any link at all between the disease and cattle feeding practices).³² Most dispassionate calculations of expected utility would assess a change in probability of one in twenty million as not worth worrying about.³³ However, in practice there seems to be a qualitative difference in the way in which people respond to a situation in which there is ‘no risk at all’ (i.e. a ‘safe’ situation) and the way they respond to a situation in which the risk is ‘very small’.

If one puts the literature on anxiety and perception together with the literature on choice under uncertainty, several themes emerge. There appears to be a discontinuity in the size of the benefits people ascribe to being ‘safe’, (i.e. a subjective estimate of zero probability of a hazard) compared to the benefits that they ascribe to being ‘pretty safe’, (i.e. a subjective estimate of a ‘very

32 There was (and is) no direct evidence of the link between animal feeding practices and the disease in humans. The evidence for the existence of a link is a presumed excess numbers of cases (seven) identified as ‘occurring in groups with potential occupational exposure’ between 1990 and 1996 in the UK. However, the inability to define clearly the at-risk occupational population, or control adequately for its age composition, makes this evidence rather problematic (see Cousens et al., 1997, and associated articles in the same issue of the British Medical Journal).

33 Presumably, ‘safety’ in economic life corresponds to an underlying risk probability that is considerably higher than the risk involved in medical issues such as ‘mad cow’ disease, probably because economic risks do not have the same gruesome nature. The idea of an undetectable virus that is boring holes in the brain, with inevitably fatal (but slow) results, has an emotional impact that economic losses cannot quite match.

The importance of vividness of outcome, in swamping the influence on attitudes of probability of outcome can be illustrated by informal polling on ‘mad cow’ disease. In a number of conversations with professional economists (who are presumably a statistically sophisticated lot) I have yet to find anyone who had the foggiest notion of the marginal impact on probability of mortality from Creutzfeld-Jakob disease of eating beef, yet virtually all could remember clearly the TV film clips of staggering cows afflicted with the disease and most admitted to increased beef aversion.

small' probability). There also appears to be a tendency for people to overestimate the objective prevalence of small probabilities. The way in which risks are framed influences the assessment of probabilities, and the salience of vivid, imaginable risks is often greater than proportional to their probability. People tend to overestimate the probability of risk of events they have personally experienced. The bottom line is that 'insecurity' differs in predictable ways from 'risk assessment'.

Constrained Ability to Avoid Risk

If people are, or feel, 'unsafe', it must be because they either did not have the option of safety or they did not choose to exercise that option. Anxiety about a lack of safety (i.e. insecurity) has an easy solution if a threat avoidance option is available. Since a number of different strategies are available to individuals as ways of avoiding economic risk, the insecure must be those for whom none of these alternatives were available. The problem in empirically demonstrating the prevalence of economic insecurity is, therefore, not just the problem of demonstrating that a particular constraint on risk avoidance exists, but also the problem of showing that no substitute risk avoidance strategy was practical.

Furthermore, it may not be enough to examine specific risks in isolation, since one possible strategy for avoiding aggregate risk is to assume the risk of a negatively correlated outcome. For example, investors in the stock market may have the choice of buying shares in companies which will do well if oil prices rise or shares in firms which will do well if oil prices fall. If one considers each stock in isolation, the investor will be seen as incurring a risk of gain or loss, depending on oil price movements, but their aggregate portfolio risk will depend on the balance of their holdings, over both types of shares.

Individuals who are concerned about the risk of a personal 'loss of livelihood' cannot purchase an asset whose return is negatively correlated with the return on their own human capital. Nevertheless, at any point in time, one can think of any individual as having a portfolio of risk avoidance options against the possibility of significant economic loss, and a

corresponding environment of potential risks. Individuals can reduce their risk exposure by individual actions taken in economic markets, by reliance on the public sector or on non-market mechanisms and by taking part in collective actions to affect the probability and costs of hazards. These alternative strategies differ in social and private costs, and differ in degree of effectiveness in avoiding risk, but they also act as partial substitutes in producing an overall level of economic security or insecurity.

Insurance markets enable individuals to purchase compensation for part of the costs associated with specific, named hazards (such as car theft, or house fire), but such contracts are only available for a subset of economic risks. Furthermore, the necessity of covering administration costs and profit margins, plus the prevalence of imperfect competition, mean that insurance premiums are less than actuarially fair. In some cases, insurance coverage may not be available.

Although the young have not yet had the opportunity to make many savings decisions, and the poor never do get the chance, older and more affluent individuals do make choices about asset accumulation. For those individuals, rising economic insecurity increases the incentive to save, and to increase the percentage of assets held in fairly liquid forms. The 'precautionary motive' for savings offers a general source of security, whose efficiency in offsetting the impact of income fluctuations depends on the liquidity of assets held.³⁴

The possession of insurance policies, and/or the possession of wealth, are private strategies which are intended to ensure that whatever states of nature actually occur, the individual will not be too badly off. However, asset accumulation strategies are inherently unavailable to the poor and the young, and private insurance against the risk of loss of livelihood is in practice limited to disability insurance on expensive and partial terms. Asset accumulation strategies can also only cope with a limited run of bad luck

34 Gollier (1994) presents a formal model. Browning (1994) has also recently pointed to the potential importance of the 'internal capital market' of households, in the sense that short run fluctuations in cash income can sometimes be partially accommodated by the deferral of consumer durable purchases.

before assets are exhausted.³⁵ Since job loss implies (among other things) that an individual must start over in a new job, without any seniority, there is a heightened risk of subsequent job loss (at a time when savings will have been depleted). ‘Bad luck’ in the labour market is therefore quite likely to come in runs, and only a very limited segment of the population can accumulate enough assets to forestall economic insecurity. Furthermore, it must always be remembered that the level of economic security available through private savings and insurance depends crucially on the credibility of the promises that banks and insurance companies will honour their commitments. In an atmosphere of financial crisis (e.g. East Asia, 1998), dependence on the private sector may not offer much security.

However, individuals can also attempt to influence the probability of future personal events by their current decisions. Workers may be influenced in their labour market decisions by a perception that some strategies of human capital investment, choices of occupation or location, or decisions about employers or jobs, come with differing risks of future unemployment, workplace injury or other hazards. Investors presumably weigh risk and reward in their portfolio decisions. All these decisions are taken in formal economic markets, but their risk avoidance dimension ranges from the explicit nature of insurance contracts, to the general security of asset accumulation and the implicit protections of relatively safe market choices.

Security comes from the perception that attractive (or at least tolerable) options will be available, whatever happens. A fire insurance policy offers the security of the insurance company’s promise that the house will be replaced, should it burn. Adequate social assistance and social insurance programs offer the security of a legal right to social transfers, in the event of personal economic misfortune. Those people who can be sure of the availability of a network of social support through the family can depend on their relatives for support. Over and above the roles played by formal economic markets in determining the level of risk exposure of individuals,

35 Osberg, Erksoy and Phipps (1998) note that relatively few Canadians have enough liquid assets to last out a typical spell of unemployment at a poverty line level of consumption, without any income transfers.

the social institution of the family and the social programs of the welfare state pool risk among individuals.

However, insecurity is about possible future events and their outcomes, and the security offered by the family and by the welfare state is fundamentally different. The welfare state pools risk among all individuals and establishes a set of formal procedures by which individuals can claim assistance as their legal right, if specific contingencies should arise. Families pool risk among a much smaller number of individuals, whose fortunes are likely to be much more highly correlated than the fortunes of the population as a whole. Furthermore, family obligations of mutual assistance are not legally enforceable. The option of begging from one's richer relatives may come with much accompanying humiliation, like the necessity of admitting past errors, and may not always be successful, since relatives can always disown their liability. In generalised recessions, when times are tough all over and no member of the extended family has the surplus to be able to offer assistance, family ties may break under the stress of excess demands.³⁶ Hence, the economic security of family ties is in practice not a substitute for the protections of the welfare state.

The implications of risky events, and the insecurity they produce, are also partly determined by the social obligations of individuals. The economic insecurity felt by parents is, for example, only partly due to their anxiety about their personal futures, as compared to their worries about the fate of their dependent children. Hence, adding it all together, the impact of changes in a given dimension of security can be very different, for individuals in differing contexts.

A specific example may help to make the general point. An increase in job insecurity (such as the announcement of the possibility of a plant closure) may have a very different impact on the overall sense of economic insecurity

36 In June 1998, press reports from South Korea noted 'a growing number of cases (of children abandoned in orphanages) across South Korea this year. Rising unemployment and the resulting financial stress on low-income families is creating a social phenomenon of recession orphans' (*Sydney Morning Herald*, 20 June, 1998: 1).

of different workers, depending on their personal context. A middle-aged worker with a large mortgage, dependent children and no other source of family income is likely to feel far more anxiety than an older worker with a mortgage free house, grown up children, an early pension option and an employed spouse. Overall, economic insecurity represents the combined influence of market constraints and personal choices, in both social and economic spheres, and the impact of each depends heavily on their context.

Bearing in mind the substitutability of risk avoidance strategies and their varying relevance over the life course, the 'null hypothesis' for research on economic insecurity is the proposition that it does not really exist: that the number of economically insecure people is so few that economic insecurity is not worth worrying about. Those who believe that market processes operate, nearly always, to enable all possible mutually advantageous trades to occur tend to disbelieve that the widespread existence of constraints on the options available to individuals, and constraints on choices are central to economic insecurity.

The voluntary or involuntary nature of unemployment is particularly important to perceptions of economic insecurity. It is hard to imagine that economic insecurity could be widespread if every individual's asset of labour power could at any time be used to produce a decent income. If wages were always sufficiently high to enable an adequate standard of living and if work was always available, individuals would always have a labour market option. If unemployment were entirely voluntary, presumably its occurrence would evoke no anxiety. Although there is an empirical econometric literature demonstrating that job availability is crucial in determining unemployment (see, for example, Osberg and Phipps, 1993), economic theorists sometimes make the assumption that unemployment is determined by voluntary labour/leisure choice, or by the individual's choice of reservation wage. If this were really the case, a marginal change in labour/leisure choice or reservation wage would be an easily available solution to any unemployed individual's shortage of cash.

Alternatively, if insurance markets were complete and competitive, individuals could purchase protection against any defined risk that they

thought was significant, at actuarially fair prices. If capital markets were perfect, individuals could borrow or lend, at a constant interest rate, to smooth consumption over any fluctuations in income.

Even if labour markets had only voluntary unemployment, insurance markets were complete and capital markets were perfect, risk analysis would still be an important element in optimal decision making. In deciding which type of insurance to purchase, or which job offer to accept, it would make sense to calculate the odds of adverse outcomes. However, the concept of economic insecurity would lose its meaning, since there would be no reason to feel anxious about any particular future economic event. For people outside economics, these assumptions may seem so wide of reality as to be incredible. However, since these assumptions are convenient, theoretical economists often make them, and this may tend to produce a 'trained incapacity to perceive' economic insecurity, at least among economists.

5 The Measurement of Aggregate Insecurity

Governments have spent a great deal of resources, over the years, in attempting to reduce the aggregate level of insecurity in society, and it would be useful to know if they have succeeded. It would be useful to be able to measure trends over time in aggregate insecurity, and to be able to compare the level of insecurity among different groups in the population. However, if the insecurity of individuals depends on their subjective perception of anxiety, how is it possible to aggregate the level of insecurity felt by individuals into a measure of societal insecurity?

This sort of problem is familiar to economists who have attempted to aggregate the utility of individuals into a measure of social welfare. The predominant approach in economics is to think of the utility of individuals as a subjective concept, measurable only up to an ordinal transformation. Although in principle one can argue that an ethically defensible social welfare function should conform to a set of axiomatic ethical properties, actual measurement of social welfare requires some specification of the underlying utility functions of individuals. Since most economists have been

hesitant to suggest that they know the cardinal utility functions of all individuals in society, they have tended to restrict themselves to a more manageable problem: measurement of the material determinants of individual utility, rather than measurement of utility itself.

With respect to aggregate insecurity, the same strategy seems appropriate. It may not be possible to measure 'insecurity' objectively, but it is possible to measure the risks which produce a sense of insecurity. The issue is to measure 'risk' in a way that is informative of 'insecurity'.³⁷ If insecurity differs in predictable ways from risk, then those differences can be used to specify an appropriate measure of risk.

In order to measure risk in a way that is informative about insecurity, it would seem desirable to:

- (1) measure the risk of significant loss (not the probability of gain);
- (2) assign an explicit value to safety;
- (3) rescale objectively small probabilities to reflect their subjective salience; and
- (4) assign more than proportionate weight to small probabilities of vivid, disastrous events.

These four issues are now discussed in turn.

- (1) It may seem 'common sense' that the prospect of an uncertain gain does not create anxiety, and that feelings of insecurity are only produced by

37 Public opinion polling can also provide useful information on subjective perceptions of insecurity; indeed, this essay has already referred to the polling results of EKOS in Canada in the 1990s. However, although polls can probe respondents' feelings and anxieties, their results are inevitably dependent on the precise wording of the questionnaire and it can be difficult to compare estimates of insecurity across instruments. Furthermore, although polls can yield useful data on the prevalence of a response (e.g. yes/no to questions on whether feelings of anxiety exist), there is no natural metric for the intensity of response (e.g. very/somewhat/slightly anxious) which can enable the aggregation of intensity.

downside risk. However, in standard analyses of the risk of outcomes of differing value, it is entirely arbitrary whether the issue is framed as the prospect of a gain, compared to the worst possible outcome, or the prospect of a loss, compared to the best possible outcome. In order to define the issue of insecurity as the risk of significant loss, one must be willing to specify some methodology for establishing the reference point of individuals. In addition, one must be willing to distinguish between inconsequential losses and losses of 'significant' size.

The work of Kahneman and Tversky (1979) and Kahneman, Slovic and Tversky (1982) is particularly important in identifying the different subjective valuations that individuals assign to losses, compared to gains. If feelings of insecurity are driven by the likelihood of a negative outcome, then one-tailed statistics (such as the percentage of the population experiencing a loss in income, or the average size of an income loss) are to be preferred. If insecurity and risk are different concepts, the measurement of insecurity should differ from the measurement of risk. Two-tailed statistics (such as the coefficient of variation of outcomes) are appropriate for the analysis of risk, but not for the measurement of insecurity. The issue of how to define the reference point for assessment of 'loss' also becomes particularly important.

(2) If individuals experience a 'no-threat' situation as qualitatively different from a threatening situation, then a feeling of 'safety' has a value. Safety can be interpreted as a subjective expectation that the probability of a seriously adverse event is approximately zero (which of course raises the issue of the degree of approximation).

Since safety is a dichotomous attribute, polling evidence on the percentage of the population who see themselves as safe in various dimensions of their lives can be directly used as a component of a measure of societal insecurity.

(3) If, once a probability of danger has passed a threshold of perception, people in fact act as if they have scaled upward small probabilities of danger, then measures of 'insecurity' should reflect this systematic tendency to overestimate small probabilities. This, of course, creates the difficulty that the act of cataloguing risks may, in itself, increase the perception of risk and

increase economic insecurity. The chance of any risky event can always be expressed as the sum of the probabilities of conditional events; but in inviting individuals to think separately about the chances of each possible conditional probability, the result is likely to be an increase in anxiety.

For example, the probability of being dismissed from one's job is, logically speaking, the sum of the probabilities of being dismissed for all possible reasons. The list of all possible reasons for dismissal includes: because an error in the computer system falsely identifies you as embezzling funds; because you are falsely accused of sexual misconduct; because your immediate superior is replaced and the new boss hates you; because you suffer an incapacitating illness (a possibility that can logically be further decomposed into the list of all possible incapacitating illnesses), and there are many more. Relatively few people would escape some increase in anxiety as they contemplate the list of all possible reasons for their dismissal, and calculate the conditional probability of each.³⁸ Although standard micro-economic theory assumes that humans have available the costless computational capacity to disaggregate risks in a logically consistent way, there are in fact considerable costs to trying to do so. Since the act of naming a hazard may tend to increase its subjective weight, the framing of risks is highly important.

Some general risks have an ongoing, and fairly obvious, importance in individual's lives – in particular, the risks which the UN Universal Declaration of Human Rights enumerates of loss of livelihood in the event of unemployment, sickness, disability, widowhood, old age or other circumstances beyond an individual's control. However, other risks may be more problematic.

(4) When people think of threats to their well-being, many tend to think qualitatively. This way of thinking is reasonable, if there are some discrete

38 In fact, we typically refer to people who routinely catalogue all the possible ways that things could turn out badly as being 'neurotic', or even 'paranoid' – terms which cannot easily be fitted into the standard discourse of rational utility maximisation.

outcomes (such as residence in a particular neighbourhood, possession of an automobile) that delineate major differences in lifestyle and well-being. Correspondingly, one way of framing the issue of risk is to draw a distinction between threats of different sizes. One might, for example, think of a loss as being ‘a big hit’, ‘major’ or ‘a catastrophe’. As an example, one might distinguish between such events as: the destruction by fire of one’s uninsured house or car; or the loss of one’s house and one’s employment as a professional and the beginning of a new life as a taxi driver; or the loss of all financial and material assets and all employment prospects. One might call a loss that is manageable within one’s current lifestyle a ‘big hit’. Such an event is certainly disagreeable, but is typically thought of as differing qualitatively from a ‘major loss’, i.e. an event that would force a substantial change in lifestyle. The possibility of a ‘catastrophe’ – a loss that is so large as to produce destitution – can have an impact on anxiety levels that is of a different order of magnitude again.

In thinking of the gains and losses from risky events, economists have typically followed Marshall’s dictum that ‘Nature does not make jumps’ and have preferred to think of utility as a continuous function of income. It is also common for economists to assume a concave utility function, which implies that large losses will have an impact on utility that is more than proportionate to the size of the loss.³⁹ The concavity of the utility function can take us part of the way in appreciating the impact of major losses, but the common denominator of lifestyle changes is the existence of substantial transactions costs of change.⁴⁰ If these transactions costs are included as part of the loss, a

39 Tversky and Kahneman (1991) argue for a concept of ‘diminishing sensitivity’ to losses, which implies a convex utility function, in the immediate neighbourhood of the status quo. Diminishing sensitivity may be the way to analyse smaller and larger losses within a given lifestyle, or a given experimental situation. However, losses that are large enough to produce major lifestyle changes (and their substantial associated utility costs) are better analysed in the traditional framework of a concave utility function, and risk aversion.

40 The transaction costs of a forced sale of housing are quantifiable, but the costs of a substantial redefinition of occupational identity and social status (as in the professor/taxi driver example) are less easy to establish. Certainly life would still go on, but major occupational changes typically require a significant period of adjustment.

sufficiently concave utility function may well capture the utility cost of a ‘major loss’ (although it is in practice not easy to capture the psychological impact of an event such as forced change in lifestyle).

Finally, in considering the sense of insecurity that the possibility of catastrophic loss produces, the vividness of an extreme outcome may well (as in the mad cow disease case) dominate the actual probability of the event. Homelessness, and the probability of total destitution, may provide an example. Most Australians and Canadians probably have some access to familial social support that they could draw on, if they had to, and most could access social assistance; objectively, their probability of actually ending up homeless is rather low. However, the daily sight of homeless people on the streets serves as a vivid reminder that this outcome is possible, hence the chance of being totally destitute may have a salience that reinforces a general sense of economic insecurity.⁴¹

From a policy perspective, the disproportionate weight which vivid, small probability events can play in forming perceptions of economic insecurity implies there may be a disproportionately large public benefit from eliminating a risk such as homelessness.⁴²

41 Note that the growing number of millionaires (also a low probability event) has little impact on feelings of ‘insecurity’ which are driven by downside risk. As well, it is probably asking too much of economic theory to ask it to model the insecurity which surrounds the chance of total destitution in terms of the expected utility and the objective probability of being ‘on the street’. Technically, ‘standard’ utility functions, which are otherwise quite reasonable, (e.g. the Stone-Geary) can be very hard to interpret when income approaches zero. More philosophically, authors such as Blackorby, Bossert and Donaldson (1997) have discussed the idea that a basic level of capabilities or functionings are necessary for a minimally decent life. If people at the margin of physical survival are, in a very real sense, robbed of their humanity, it is very problematic to calculate their utility level, much less the expected value of that utility level.

42 In addition, homelessness may create anxieties among the middle classes about violent or aberrant street behaviour.

6 Summary and Conclusions

One theme emerging from the above discussion is that the question of measuring economic insecurity could be turned around. It may sometimes be simpler to discuss the converse problem: the measurement of economic safety.

A second theme has been the subjective nature of anxiety and the formation of subjective expectations. There may therefore be a larger role for attitudinal survey evidence in the measurement of economic insecurity than is normally common in economics.

A third theme has been the continuing importance of some core dimensions of economic security. The risk of loss of livelihood in circumstances beyond one's control is strongly influenced by the same factors (unemployment, old age, health, widowhood/divorce). Hence, tracking the economic risks associated with these events over time seems to be crucial to understanding trends in economic insecurity.

In the background, there is also the question: 'Why do we want to measure economic insecurity anyway?' This essay has identified a number of reasons why economic insecurity might be important, and the best way in which to measure economic insecurity may be partly determined by how we want to use the results. Since the underlying purpose of measurement may vary, and the concept of economic insecurity is complex, it is probably desirable to aim at multiple indicators of the extent of economic insecurity. Furthermore, since anxiety as a subjective response to perceived risk is influenced by the objective prevalence of risky events, it would seem natural to examine both subjective and objective indicators.

Surveys of public opinion have gathered two different types of subjective data on economic insecurity: first, responses to questions eliciting the respondent's level of anxiety or insecurity (e.g. EKOS, 1996); secondly, subjective estimates of the probability of adverse events such as those of Dominitz and Manski (1997), who queried respondents on their estimate of the probability they would be unemployed, or lose health insurance coverage,

within the next 12 months. Both types of information can, if carefully used, be interesting.

There are advantages to a straightforward question like: ‘All things considered, do you now feel economically secure?’ or ‘Do you now feel (more/less/the same) economically safe than you felt a year ago?’. This sort of question asks the respondent to do the implicit aggregation over sources of risk and possibilities for risk avoidance, according to their own estimates of costs and probabilities. A direct question can be used to assess the prevalence of a general mood of insecurity, and trends in that mood. The problem is that one cannot easily assess the intensity of such a mood, and the existence of a mood offers no direct guidance as to what to do about it.

A second type of subjective question asks respondents to identify the sources of their economic anxieties. One example is the question: ‘What is your biggest economic worry?’. Alternatively, people can be asked to mention their nightmares: ‘Economically, what is the worst thing that could happen to you? How likely is that to happen?’ (very likely/somewhat likely/ somewhat unlikely/very unlikely). The advantage of this class of questions is the lack of prompting, since the researcher is not imposing the categories or causes of insecurity on the respondent. Also, since respondents volunteer their areas of anxiety, emerging sources of anxiety can be tracked. If survey evidence indicates the sudden emergence of an area of concern, the specificity of responses may make it more feasible to identify a possible cause or a potential policy response. However, although prevalence data can be compared over time, the aggregation of intensity remains problematic.

Dominitz and Manski (1997) provide an example of a third approach, which tries to measure economic insecurity through responses to questions eliciting subjective probabilities of specific adverse events. In their survey, respondents were asked to estimate the probability of absence of health insurance, job loss or victimisation by burglary within the next year. One of their more important findings is that respondents are willing to describe their expectations in probabilistic terms and they appear to do so in a meaningful way. Although respondents substantially over-predicted the risk of burglary,

the expectations and the realisations of job loss and of health insurance coverage tended to match up closely.

The problem with this approach is that it relies on the researcher's ability to identify accurately the key events which cause economic insecurity, and ignores any possible risk avoidance options. However, the finding of a close correspondence between realisation percentages and subjective probability estimates (at least for some classes of risk) implies that one can sometimes use the former to predict the latter. One therefore has some grounds for using objective data on the prevalence of outcomes as a predictor of subjective insecurity. Until a better alternative is found, Appendix One can provide an approximation to some key trends in economic insecurity.

Section 2 of this essay began by asking why economic insecurity might matter. Three general reasons were suggested: because governments spend a great deal of money every year to reduce economic insecurity, because people care about economic insecurity and because some of the behaviours which insecurity produces may be socially dysfunctional. Section 3 then presented data on trends in the economic risks associated with unemployment, sickness, old age and widowhood in order to make the point that, with the exception of the risk of poverty in old age, the economic risks Canadians face have increased over time.

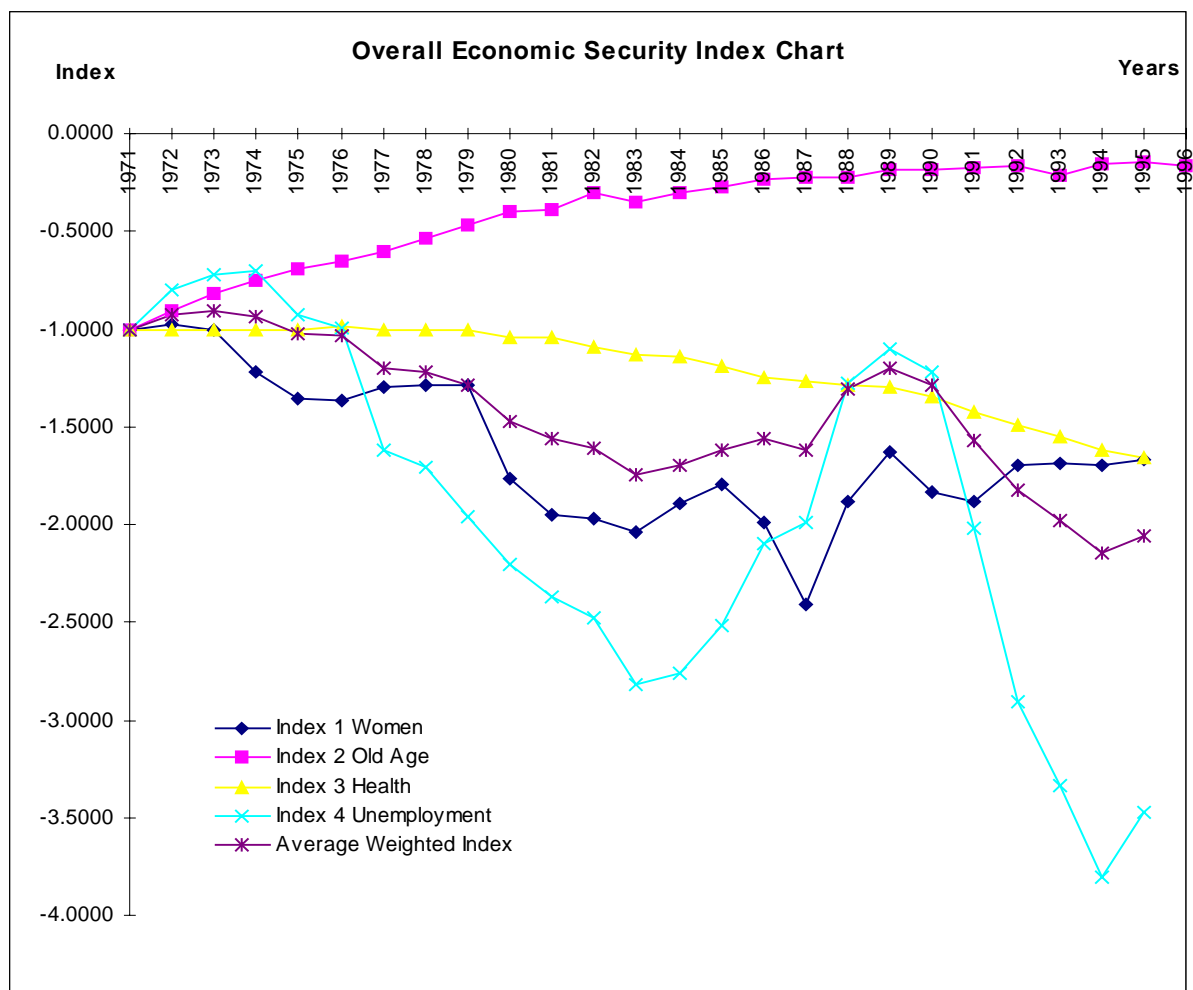
Economic insecurity is a subject that economists have tended to ignore, while risk is an issue which has been much studied. For that reason, Section 4 of this essay discussed the ways in which economic insecurity differs from economic risk. The conclusion was that economic insecurity differs systematically from economic risk, and that measures of insecurity should reflect those differences.

Section 5 then discussed measurement strategies. As an approximation to the objective trends which underlie subjective attitudes, the simple calculations in the appendices of this paper highlight some key dimensions of economic insecurity, which are consistent with a trend to increased insecurity in the Canadian population of working age. Much remains to be done in improving the measurement of economic insecurity, but the data which are available

indicate that economic insecurity is important to individuals and has deteriorated in recent years. The underlying purpose of this essay has been to argue that economic insecurity is an important part of economic well-being, and that it is time for economic insecurity to return to the economic policy agenda.

Appendix One: Recent Trends in Risks Associated with Unemployment, Sickness, Widowhood and Old Age in Canada

Figure A1.1: Overall Economic Security Index Chart

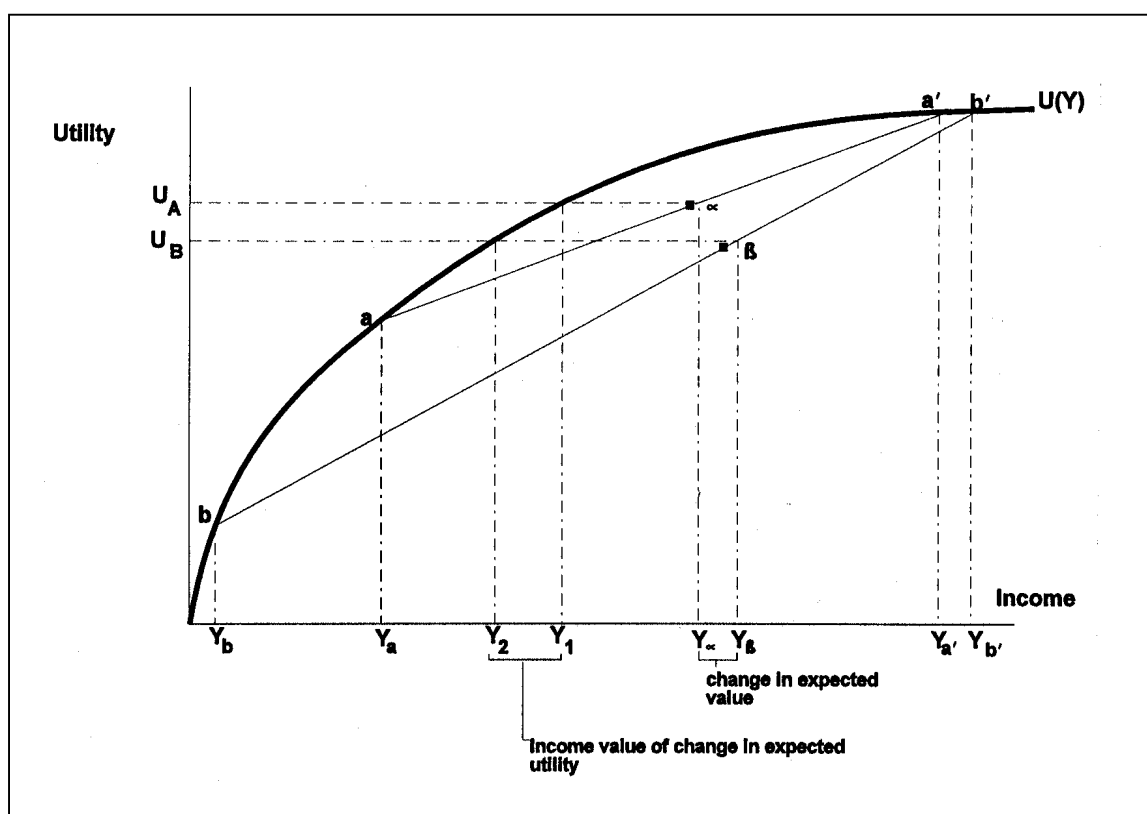


Source: Osberg and Sharpe (1998)

Appendix Two: The Cost of Risk

Figure A2.1 outlines the position of a risk averse individual (decreasing marginal utility of income) who faces some risk of income loss. It contrasts the situation of the individual in two unemployment insurance regimes - Regime A (high benefit/high premium) and Regime B (low benefit/low premium), which are represented by aa' and bb' respectively. If the individual remains fully employed, a net income of Y_b' is received, when the low benefit unemployment insurance scheme is in operation. However, since greater generosity of unemployment insurance benefits requires higher unemployment insurance premiums, Y_a' is the individual's income in the absence of unemployment when the more generous UI scheme is in operation. If the individual experiences unemployment, total income from labour earnings and unemployment insurance benefits is Y_a if the more generous UI scheme is in operation, and Y_b under the less generous UI regime.

Figure A2.1: The Risk of Income Loss to a Risk Averse Individual



The expected income of each individual is determined by their relative probability and duration of unemployment. In Figure A2.1, Y_∞ is the expected income under regime A, where point ∞ is defined by [$\alpha a'/aa' =$ probability of unemployment]. Similarly, Y_b is the expected value of income in the less generous UI regime, and $\beta b'/bb' =$ probability of unemployment under regime B. Usually, $\beta b'/bb' \neq \alpha a'/aa'$. The duration of unemployment (which, together with the level of UI benefits, determines Y_a and Y_b) is also unlikely to be the same in different UI regimes. Although it is these changes in the probability and duration of unemployment that are the focus of much of the literature on UI, one can argue that the focus *should* be the impact of UI on economic well-being ($U_A - U_B$).

There is no reason to believe that the probability or duration of unemployment is the same under different unemployment insurance regimes; indeed, the large literature on UI is mostly about the possible impacts of the implicit incentives of unemployment insurance on the probability and duration of unemployment (see, for example, Atkinson and Micklewright, 1991). The simulation model of Osberg, Erskoy and Phipps (1998) is built up from a series of estimated behavioural equations which embody the response of individuals to changes in the specific parameters of unemployment insurance in Canada; hence changes in UI regimes affect the probability and duration of unemployment.

Given these behavioural responses of individuals to changes in unemployment insurance, the relative probability of unemployment corresponding to each unemployment insurance scheme implies that the expected value of income under the less generous unemployment insurance scheme is Y_b and under the more generous scheme is Y_∞ . The levels of utility associated with these uncertain income streams are graphed on the vertical axis as U_A and U_B .

One can define 'certainty equivalent income' as that certain income which would generate, for risk averse individuals, the same level of utility as they would get from an uncertain lottery with higher expected value. In Figure A2.1, Y_1 is the certainty equivalent income which produces the same level of utility as the expected value of income (Y_∞) which the individual would

receive under the more generous unemployment insurance scheme. In Figure A2.1, Y_∞ minus Y_1 represents the risk premium: the amount which the individual would be willing to pay to rid themselves entirely of the income risk of unemployment (i.e. receive a certain income rather than the uncertain prospect of income Y_a' if no unemployment and Y_a if unemployed). Similarly, Y_2 is the certain income which would generate the utility level U_B , the same level of utility as generated by the uncertain prospect of Y_b' if not unemployed and Y_b if unemployed under the less generous UI scheme. The change in utility associated with the change in unemployment insurance regimes is $U_A - U_B$ and the money equivalent of that loss in utility (the change in certainty equivalent income) is $Y_1 - Y_2$.

Note that the change in certainty equivalent income arises from changes in *both* the expected value *and* the riskiness of income flows. Both the expected value and the riskiness of income flows are influenced by the labour market environment, public policy and the individual's behavioural response to each. One should *not* measure the impact of changes in unemployment insurance legislation on the distribution of income solely by calculation of changes in the expected value of income. In Figure A2.1, shifting from a more generous to a less generous unemployment insurance scheme *increases* the expected value of income (from Y_∞ to Y_β). However, the decrease in income security which this entails produces a *decrease* in net utility (from U_A to U_B), the income value of which is given by $Y_1 - Y_2$.⁴³

The contrast in Figure A2.1 between social insurance revisions which produce a *gain* in expected income and a *loss* in certainty equivalent income deserves some emphasis.

43 Similarly, a legislative change which deprived individuals of protection against financial loss due to home burglary by prohibiting the sale of such insurance could be expected to eliminate fraudulent theft claims and decrease the actual incidence of home burglary (as individuals purchased burglar alarms, etc. to decrease the risk of burglary). Outlawing such insurance coverage would also increase the net cash income of individuals, in aggregate (since premiums paid to burglary insurers exceed claims paid out by the amount of administration expenses and industry profits) *but* such a change would decrease the utility of all those who previously purchased insurance. (Figure A2.1 is really a generic diagram of the implications, in general, of higher or lower levels of insurance coverage.)

Appendix Three: The Welfare Implications of Risk and Insecurity

To fix ideas on the relationship between the distribution of risk and the level of insecurity, consider the example of a firm which faces an exogenous risk, with probability α that there will be a downturn in demand and it will have to layoff some fraction β of its workforce. Assume that all workers receive the same pay while employed (a wage rate w). Two methods of allocating the layoffs are considered: [1] random assignment: which implies that every worker faces a probability of layoff of $\alpha\beta$; or [2] layoff by seniority: which implies that the β most recently hired workers face a layoff probability of α (i.e. a certain layoff, if any layoffs are needed, and every one else has zero chance of layoff).

Which method of allocating layoffs – by seniority or randomly – produces more economic insecurity? If we assign a value to economic safety, then economic insecurity will be least when layoff is by seniority, since the percentage of the population that does not have to worry at all about layoff is then $(1-\alpha)$. In the random layoff scenario, everyone is insecure, to some degree.

As Atkinson (1970) has argued, one should measure inequality in a way that is consistent with an ethically defensible social welfare function, and it seems reasonable to ask the same of a measure of economic insecurity. What is the relationship between insecurity, risk and social welfare in this example?

An ethically defensible social welfare function assumes that social welfare depends on both the average level of well-being and the inequality of well-being. In this example, we must consider the distinction between income and well-being/utility.

In either case, the expected value of worker income will be the same $(1-\alpha\beta)w$. With either layoff rule, the observed actual distribution of income is the same (with all workers getting w in the no layoff state and some fraction of β receiving zero wages when layoffs are required).

From a welfare point of view, however, one should consider the distribution of expected utility. In the random layoff scenario, there is no inequality in expected utility, since everyone has the same expected value of income. Inequality in the distribution of ex ante expected income is clearly greater under the seniority layoff rule, since low seniority workers know that they alone can expect to bear the burden of layoffs.

If we look at this issue solely from a risk perspective, we would argue that under the seniority layoff rule, high seniority workers get an expected utility of $U(w)$, while low seniority workers get $U(w')$, where w' is the certainty equivalent income corresponding to their uncertain (and lower) expected income stream. The average utility of the workforce is equal to $(1 - \beta) U(w) + \beta U(w')$. A seniority layoff rule generates greater ex ante inequality in expected utility and a lower mean level of utility [if $U''(y) < 0$]. Hence, any social welfare function that weights both the expected value of income and the inequality of expected incomes will consider the seniority layoff rule to generate lower social welfare.

However, if a value of δ is assigned to 'safety', then the well-being of high seniority workers is $U(w) + \delta$. Average utility is now equal to $(1 - \beta) [U(w) + \delta] + \beta U(w')$. An 'insecurity' perspective would therefore calculate a higher value for average utility in the seniority layoff scenario than a 'risk' perspective would. If we think of the insecurity dimension, the issue in comparing random and seniority layoffs is whether or not the value of safety for some is exceeded by the risk aversion (loss in certainty equivalent income) of others. A 'risk' perspective would not perceive this trade-off.

If safety is a desired attribute, it could be the case that greater average well-being would dominate the increased ex ante inequality associated with a seniority layoff system.

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