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UNDERSTANDING THE POLITICAL ECONOMY OF THE EVOLUTION AND FUTURE OF SINGLE-PAYER PUBLIC HEALTH INSURANCE IN CANADA[❖]

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SUMMARY

Surprisingly little attention has been paid to how we pay for health care affects how much we spend on health care. In this paper, the author discusses how non-contributory finance and effective subsidization of public health care spending with federal cost sharing crowded out demand for private insurance as voters opted for high levels of public health spending.

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- ❖ This Technical Paper provides calculations and proofs to support results summarized in SPP Briefing Paper, Understanding the Political Economy of the Evolution and Future of Single-Payer Public Health Insurance in Canada, February 2010, available on The School of Public Policy website (www.policyschool.ucalgary.ca)

INTRODUCTION

Canada's choice in 1984 to make private health care purchases an exclusive (opting-out) alternative for service providers, rather than a supplement to publicly financed health care services provided in hospitals and/or by a physician is unique among member countries of the Organisation for Economic Co-operation and Development (OECD).¹ To meet the conditions for full transfer payments from the federal government under the 1984 *Canada Health Act* (CHA), the provinces have regulated — and, in some cases, prohibited outright — private payment and private insurance for publicly insured services.² An implication of the fact that Canada's single-payer public health insurance systems are for the most part financed by the progressive tax systems of the federal and provincial governments is that resources are redistributed not only from healthier to less healthy Canadians but also from higher- to lower-income Canadians. Understanding the evolution of Canada's single-payer system of health care finance, therefore, requires an appreciation of the implications for voters of income redistribution as well as the restrictions placed on their access to privately financed health services.

At the outset, finance arrangements for health care in Canada were much different from what we have today. Yet, in studies of the evolution of public budget constraints on health care over the past half-century, surprisingly little attention has been paid to how we pay for health care affects how much we spend on health care. Thus, the broad purpose of this paper is to look at the shift from contributory to non-contributory health care finance, cost sharing between the federal and provincial governments, and the softening of public health insurance budget constraints through borrowing in order to understand the role these fiscal changes have played in the evolution of health care spending and to determine whether the status quo of health care financing in Canada is sustainable.

The policy debate is also confused by vague notions of the appropriate level of health spending. For example, the final report of the Commission on the Future of Health Care in Canada (the Romanow Report) suggests that “Canadians want necessary hospital and physician services to be fully funded through our taxes” (Romanow 2002, 31). It is not obvious, however, what it means to fully fund necessary hospital and physician services. Whose level of services is to be fully funded? If everyone's care were fully funded — that is, if the highest demand were met — then most people would be overinsured in the sense that more funding would be provided than they would want or need. What would be the cost of meeting this level of demand and would it be palatable to the majority of voters? Or is the idea a notional one that *average* demand should be fully funded, in which case the health care services of many Canadians would be less than fully funded, which would create demand for supplementary revenue channels such as private insurance?

¹ Since 1975 the public share of health care finance in Canada has been around the OECD average of 74%, but in other OECD countries private payment allows individuals to supplement the quantity and quality of publicly provided health care. Canada reserves private payment for non-medicare categories of health care expenditures such as long-term care, drugs, and non-physician-provided services. See Gouveia (1997).

² For a discussion of Canada's varied health care systems — each province and territory administers its own system according to conditions defined by the CHA — see Boychuk (2008a).

In this paper, I present a median-voter model (following Gouveia 1997 and Kifmann 2005) that embodies features of most public health insurance systems and that addresses several issues for debate around the restructuring of health care finance in Canada. In particular, the model describes the political economy of public insurance in the presence of private insurance, so that it can be used to assess the effects and welfare costs of the CHA's precluding private insurance for medicare services.³ For example, the model can help to answer such questions as whether Canada's single-payer arrangement increases or decreases the level of public health care expenditures relative to a mixed system, and how generous public insurance would have to be to crowd out all demand for private coverage. The model can also be used to identify the policy and economic drivers behind the CHA's preclusion of private payment, as well as political challenges to the preclusion of private insurance and private payment since the 1990s.

The paper demonstrates how non-contributory finance and effective subsidization of public health care spending with federal cost sharing crowded out demand for private insurance as voters opted for high levels of public health spending. It also shows why the Romanow Report's call for increases *in federal cash transfers* to provinces for health care spending would result in an increase in provincial health spending and a diminution of the demand for private health insurance. It is not clear, however, that federal subsidization of health spending is either sustainable or socially desirable. Indeed, as Canada's population ages, the current financing of health care represents enormous unfunded liabilities for the provinces (Robson 2001, 2007). To sustain current levels and growth rates of health spending without tying current revenues to that objective means asking the next generation of working Canadians to pay far more for their health care than do working Canadians today. Although the effect of population aging on health care expenditures is projected to be modest, the model nevertheless suggests it could trigger a serious political crisis for Canadian medicare as taxes rise.

Finally, the model highlights that the sustainability of Canadian medicare is not the right focus for the debate, in the sense that there is no call to eliminate universal public health care finance. Rather, the more appropriate sustainability question concerns the CHA's precluding a mixed private/public financing arrangement for health services in the light of both restraints on public health spending, as governments bring it more in line with current revenues, and rising demand for supplementary private health insurance.

THE EVOLUTION OF GOVERNMENT FINANCE OF HEALTH CARE IN CANADA

Canadian medicare is not an insurance system, and there is no clear link between health expenditures and the tax price for paying for them. Since the passage of the 1957 *Hospital Insurance and Diagnostic Services Act* (HIDS) and the 1966 *Medical Care Act*, the federal and provincial governments have relied increasingly on non-contributory finance to pay for

³ Here I am thinking of private insurance that is similar to the role it plays in, say, Australia. That country has a parallel system of public and private health insurance where the private health care system is seen as complementary to, rather than competitive with, the public system. Australian private health insurance operates in large part as gap insurance or as a means to pay for quality enhancements not covered by public health insurance. See Donato and Scotton (1998); and Shiell and Seymour (2002).

health care services provided by physicians and hospitals. Payments, for the most part, are from general government revenues, as opposed to a contributory scheme such as the Canada Pension Plan, where expenditures are financed with tax revenues generated specifically for that purpose.⁴

The earliest Canadian scheme to finance health care costs was Saskatchewan's 1947 Hospital Services Plan, under which premiums were levied specifically to pay for hospital costs on a contributory basis.⁵ The plan did not preclude private payments through co-insurance or user fees for publicly financed services. Then, in 1957, the Diefenbaker government brought in the HIDS, which Boychuk (2008b, 113-114) argues had characteristics that led to the development of current health care financing arrangements, although their iconic features more correctly were an unintended consequence of the political forces that led to public health insurance supported by federal "50/50" cost sharing.

Constitutionally, health care is a provincial responsibility, a fact that influenced how health care came to be publicly financed. Since a national health insurance scheme administered by the federal government seemed impractical, the expedient solution was to have federal payment in support of provincially administered health insurance. According to Gagan and Gagan (2002, 94-95), the provinces, fearing that a national health insurance would be a "federal tax grab," called in the 1950s for health insurance to be a provincial initiative funded "primarily through generous transfer payments from the federal government." Under the 1957 HIDS and the 1966 *Medical Care Act*, the federal government agreed to share the costs of provincial hospital programs and physicians' services so long as the programs satisfied conditions of comprehensiveness, universality, portability, and public administration (see Banting and Boadway 2004, 8-9). This agreement to share the costs helped to persuade higher-income provinces Alberta, British Columbia, and Ontario to join the federal plan even though their governments previously had expressed a commitment to the principle of private insurance for most of the population and to limiting the role of public programs to covering hard-to-insure groups such as the elderly and the poor.⁶

⁴ Ontario, British Columbia, and Alberta make use of health care "premiums" but these revenues cover only a portion of total health care costs in those provinces. The premiums are not reflective of risk characteristics of individuals, their use of health care services, or their income, so that, in effect, they are a kind of "poll tax," distinguished from other government revenues only in that their levy is notionally tied to paying for health care. As these premiums are not separated out from other government revenues once collected, however, they are not necessarily allocated to health care — in much the same way that gasoline taxes are not spent solely on expenditures sensitive to automobile use. See Boychuk (2008b) for discussion of the use of health care premiums in Canadian medicare.

⁵ See Gagan and Gagan (2002, 11-12, 92-96). Before the plan came into being, hospitals were obligated to provide care to the indigent, the costs of which were covered by a combination of municipal government grants to hospitals, charitable donations, and fees charged to paying patients. With the rising cost of medical care due to rising fees charged by hospitals, the number of paying patients declined and hospital finance became a challenge, made worse by the dire economic conditions of the 1930s.

⁶ See Taylor (1978, 340-341); and Boychuk (2008b, 127-130). In other words, in the absence of federal cost sharing, the higher-income provinces would have preferred a health care system similar to the one the United States developed in the 1960s. Indeed, Alberta premier Ernest Manning would have preferred to continue that province's voluntary, privately operated medical services plan, whereby only Albertans with incomes above a defined threshold paid premiums. He explained, however, that opting out of the federal program was not an option: "The province's only option is to take the [federal] program in its entirety or refuse it in its entirety. But if it refuses, it can only

Boyчук (2008b, 113-114) argues that the goals of public health insurance in Canada were not rooted in egalitarian ideals but instead reflected a desire to keep direct public control over public funds. To this end, the federal government established conditions for its sharing hospital costs with the provinces that precluded using federal funds to subsidize insurance provision through private plans. Politically, Ottawa wanted its funds to be seen as a benefit to all Canadians, so it would not provide cost sharing to provinces that did not have universal coverage, which discouraged provinces from reserving public insurance for the poor and the aged. Ottawa also discouraged the use of premiums and co-insurance by matching provincial government expenditures on hospitals but not expenditures financed by payments by patients. Consequently, by the 1980s, most provinces had moved away from health insurance premiums.

Critics of the 50/50 cost-sharing arrangement argued that it created the incentive for provinces to expand the generosity of their programs, and expressed concerns about the federal government's ability to control its own budget with an open-ended commitment to pay half of provincial health care expenditures (see Banting and Boadway 2004, 11). With the Established Programs Financing (EPF) arrangement of 1977, transfers for hospital and medical services, along with post-secondary financing, were combined into a single block grant. The EPF transfer was an equal per capita payment to each province that was paid both as cash and as a transfer of tax points.⁷ Over time, the tax-point portion of the transfer has increased and the cash portion decreased.⁸

Monique Bégin, the federal minister who tabled Bill C-3 (the CHA) in December 1983, explains (2002) that the act was intended to stem the erosion of medicare that arose as a result of changes in how health care was financed with the EPF in 1977. Following the changes under the EPF, provinces cut health care budgets and extra billing by doctors and user fees became more prevalent. For the federal government — whose role was to enforce the conditions and regulations about universality, comprehensiveness, portability, and public administration defined under the HIDS and the *Medical Care Act* — the challenge was that the EPF had no enforcement mechanism. With the 50/50 cost-share cash transfer, Ottawa could refuse to reimburse its half of health care costs for provinces that violated the conditions of the medicare acts. With the EPF, however, it had chosen a major tax-points transfer associated with an “automatic” monthly lump sum global payment for health (and post-secondary education) sent to each provincial treasurer, which meant there was no

refuse to accept the benefits. It cannot refuse to pay its share of the costs because the extra federal taxes that will be levied to pay the federal share of a national Medicare plan will be levied on all Canadians....The only so-called option is the right to refuse any part of the benefits. I think you will agree that this is hardly an option at all” (quoted in Brennan 2008, 150-152).

⁷ Tax points are tax transfers where the Government of Canada reduces its tax effort in the provinces to make room available to the provinces and territories to raise their own tax revenues. With the 1977 EPF, the federal government agreed to give up 13.5 percentage points of personal income tax and 1 percentage point of corporate income tax to the provinces and territories. The reduction in federal government revenues collected in the provinces and territories is offset by an increase in provincial and territorial tax revenues of the same amount. See Government of Canada, Department of Finance's explanation at <http://www.fin.gc.ca/transfers/taxpoint/taxpoint-eng.asp>.

⁸ Banting and Boadway calculate that federal government transfers for health care as a share of provincial government health care expenditures trended down from 41.3% in 1975 to roughly 30% in 2000, while the cash portion fell from 41.3% in 1975 to under 15% in 2000 (2004, table 4, 17).

longer any means by which to enforce federal conditions for medicare. The CHA introduced a fifth condition — that of accessibility — to medicare, indirectly to ban physician extra billing and user fees for medicare services. With that change, the federal government now could levy a one dollar penalty on the province's block fund for every dollar of extra charges to patients, whatever the source of those charges.⁹

The significance of the use of tax points through the EPF to allow provinces to finance health care is that, unlike the cost-sharing (all cash payment) arrangement, it notionally ties health care expenditures to the provincial tax price of health insurance. If provinces want to have more money for health care when the federal government reduces the cash transfer, they must raise provincial taxes to do so. Boychuk (2008b, 136) observes that the shift to the EPF stabilized federal government expenditures but exposed the provinces to the risk of cost increases greater than GDP growth, albeit giving them more flexibility to allocate health care expenditures.

The link between income taxes and health care expenditures became even less clear with the 1995 Canada Health and Social Transfer (CHST), under which, due to its debt and deficit situation, the federal government combined the EPF and the transfer for social welfare into a single block transfer. Although 43% of the CHST transfer was intended for provincial health expenditures, the transfers were fungible across categories of expenditure. Federal cash transfers to the provinces were cut by 20% between fiscal years 1995/96 and 1997/98 (Evans 2003, 13-14).

After 2000, the federal government made several commitments for spending on health care in the provinces to support priority areas such as health care renewal, primary health care reform, home care, medical equipment, and catastrophic drug costs.¹⁰ In 2003, Ottawa committed to spending \$36.8 billion through increased CHST transfers (\$14 billion), the new targeted transfers, the Health Reform Transfer (\$16 billion), support for the purchase of medical equipment (\$1.5 billion), and direct federal spending on health. Following a federal commitment to improve the transparency and accountability of its support for health and other social programs, in 2004 the CHST was apportioned into two transfers, the Canada Health Transfer (CHT) and the Canada Social Transfer (CST). Based on existing CHST legislated amounts for these programs, 62% of transfers were allocated to the CHT and 38% to the CST. Under the CHT, Ottawa provides legislated cash transfer

⁹ See Boychuk (2008a) for a detailed discussion of regulation under the CHA.

¹⁰ For a chronology of these changes, see Health Canada's overview of the evolution of federal transfers online at <http://www.hc-sc.gc.ca/hcs-sss/medi-assur/cha-lcs/transfer-eng.php>. See also Department of Finance, "A History of the Health and Social Transfers," online at <http://www.fin.gc.ca/fedprov/his-eng.asp>. The latter notes: 2004 September: First Ministers signed the 10-Year Plan to Strengthen Health Care. In support of the Plan, the Government of Canada committed \$41.3 billion in additional funding to provinces and territories for health, including \$35.3 billion in increases to the [Canada Health Transfer] through a base adjustment and an annual 6% escalator, \$5.5 billion in Wait Times Reduction funding, and \$500 million in support of medical equipment. 2003 February In support of the February 2003 First Ministers' Accord on Health Care Renewal, Budget confirmed: (1) a two-year extension to 2007-08 of the five-year legislative framework put in place in September 2000 with an additional \$1.8 billion; (2) a \$2.5 billion CHST supplement, giving provinces the flexibility to draw down funds as they require up to the end of 2005-06; and (3) the restructuring of the CHST to create a separate Canada Health Transfer and a Canada Social Transfer effective April 1, 2004, in order to increase transparency and accountability.

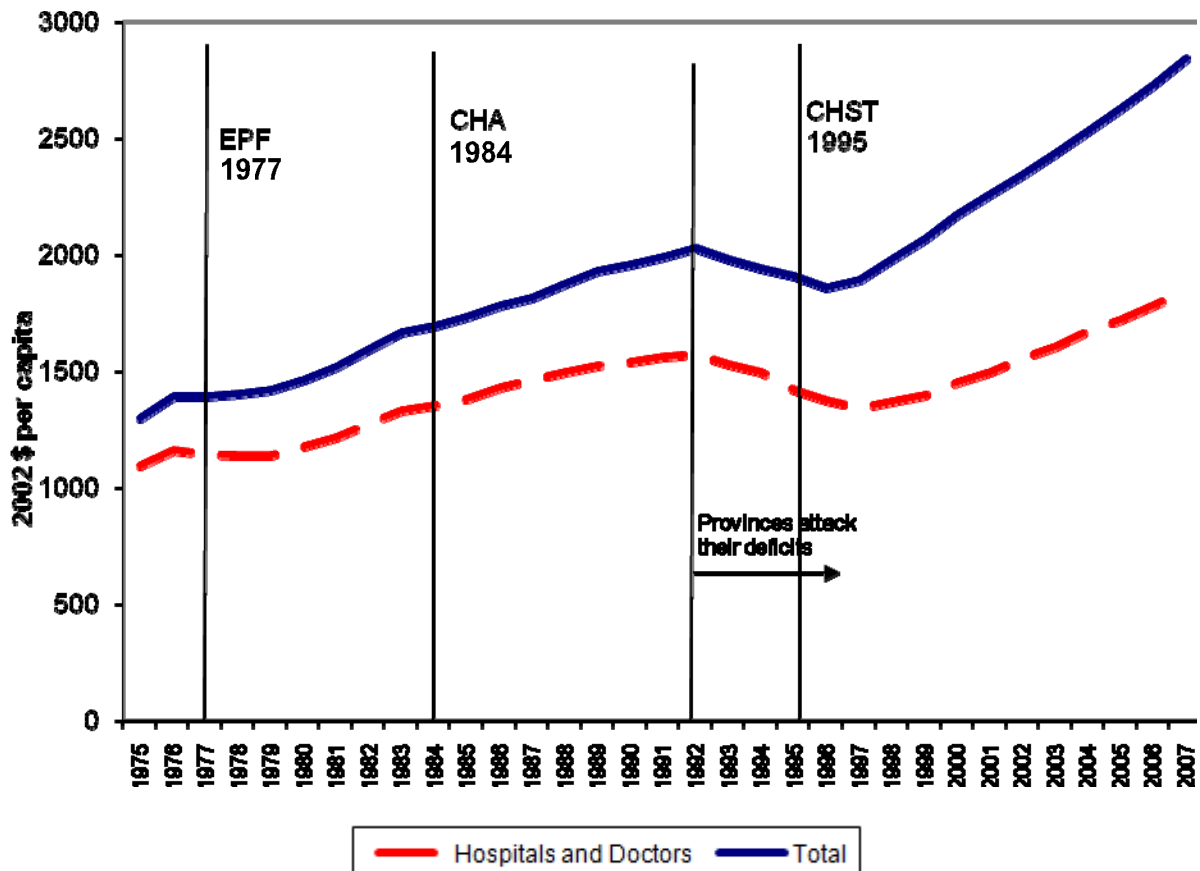
amounts — which grew by an average annual rate of 10.2% per year over the five years up to fiscal year 2007/08 — and a tax transfer component that grows with the economy.

Although the CHT makes it clearer than did EPF and the CHST how much the federal government transfers for health and restores some of the importance of cash transfers for health, it still maintains the link between provincial taxation effort and provincial health spending, and federal health transfers are still more fungible across government programs than under 50/50 cost sharing.

Government borrowing has been another important element of the fiscal arrangements for paying for medicare since 1975 (see Figure 1). Until that year, neither the provinces in aggregate nor the federal government had net borrowing. Between 1976 and 1981, however, the federal government borrowed and ran growing deficits. In contrast, the provinces maintained relatively balanced books until 1981, after which they ran relatively small deficits. In the 1980s, provincial governments opted to borrow to offset reduced cash transfers from the federal government. Indeed, after 1988, provincial borrowing grew rapidly, and budget balances were not restored until after 1996. Not until after 1992, by which time the provinces were addressing their deficits, were changes in health spending obvious (see Chung and Kneebone 2004). Prior to that time, Canadians did not necessarily face a tax price of health care that reflected the full resource cost of their well-resourced health care systems and when, after 1992 they did, spending on health care fell.

Figure 1

Per capita Public Health Spending and Spending on Hospitals and Physicians, Canada, 1975-2007



Sources: Canadian Institute for Health Information; Statistics Canada, CANSIM II database

Medicare, it should be recalled, was introduced through 50/50 cost sharing for health care costs between the federal government and provinces. As Romanow (2002, 46) notes,

[h]istorically, the federal government encouraged the adoption of publicly administered single-payer insurance systems in the provinces through the use of the federal spending power. The success and longevity of medicare is in part due to the federal government's ongoing social program transfers, equalization payments, and its willingness to use its political capital to promote and defend the system.

If federal taxes were levied solely on personal incomes and if federal taxes were collected with equivalent incidence across provinces, then it would be hard to see how Romanow's

emphasis on federal transfers on spending and health would be so important. The taxpayer would see no reason to distinguish between paying a federal tax to fund provincial health care expenditures or a provincial tax to do so. But federal governments tax corporations and, with progressive income taxation, high-income earners pay a large share of total federal taxes. Large corporations and high-income individuals are disproportionately concentrated in a few provinces. Consequently, residents of some provinces might prefer a federal taxation effort along with cash transfers to the provinces to that of their own province's raising the necessary taxes to finance health spending.¹¹

The next section presents a median voter model that provides a framework for demonstrating the impact of changing federal/provincial arrangements for financing on the level of public health care spending and the emergence of challenges to the single-payer system in the 1990s and since. Following that presentation the model will be used to gain an understanding of the evolution of the public system of health care.

A MEDIAN VOTER MODEL OF PUBLIC HEALTH CARE FINANCE

The model that I present has some general features that should be noted from the outset.¹² First, there is no gain to be had by enlarging an efficiently financed private insurance system over an inefficient tax financed public system as analyzed by Parry (2005). Similarly, the model assumes that there are no positive or negative spillovers between the public and private system that would indicate that choosing one single system is superior to a mixed system.¹³ For purposes of this analysis, all private insurance contracts are priced to be actuarially fair so in the absence of a prohibition on private insurance coverage, there would exist “affordable” insurance contracts for all members of the population.¹⁴ The

¹¹ Federal equalization payments that are intended to allow provinces to provide services on roughly equal terms further weaken the direct link between provincial tax prices of health and the level of health spending. Alberta, British Columbia, Ontario, and sometimes Saskatchewan are the only provinces that pay out on net through equalization (see Mansell and Schlenker 1995; Courchene 2004). Borrowing by the federal and provincial governments could also be interpreted as a subsidy for health care spending so long as Ricardian equivalence does not hold — that is, so long as taxpayers do not interpret borrowing today as necessarily leading to a tax increase tomorrow. In the Canadian context, for federal borrowing, Ricardian equivalence might not hold for voters in a given province for reasons similar to those described above. For provincial borrowing, the option to migrate out of a borrowing province means that voters might prefer to borrow today and migrate tomorrow to avoid the tax. The aging baby-boom borrowers might not expect to be tomorrow's taxpayers once they have retired.

¹² The model is akin to Kifmann's (2005) model which is a simplified version of Gouveia's (1997). I follow Kifmann and use discrete income and risk types in Gouveia's model. Kifmann's interest is the conditions under which all members of an economy will politically support a public insurance arrangement that has tax payments contingent on income even though the level of coverage is independent of income. Kifmann shows that there are efficiency gains from the redistributive public arrangement that arises from the existence of “premium risk” which can not otherwise be insured. So long as the gap between high and low incomes is not too large, even high income members of the population will support public insurance with redistribution inherent in it.

¹³ See Tuohy, Flood and Stabile (2004), Evans (2004) and Glied (2008b) for a discussion of these effects.

¹⁴ This is obviously a strong assumption but is defensible given the recent work by Bundorf and Pauly (2006) and given that historically, commercial insurers did find ways of insuring poorer groups in society for the costs of burial through “industrial insurance”. I ignore overhead/administration loading on the premium to simplify the model. Actuarially fair private insurance gives me a useful benchmark against which I can compare the effect of public insurance. The literature has established that lower administration costs for public insurance than for private is a big source of public insurance cost advantage. My interest is not in explaining why there is public insurance but instead what happens to the demand for private coverage when public payment is already available. Adding risk loading to

model has a common benefit (as opposed to proportional to income or risk) of public health insurance for all members of society so the publicly financed system in the model is an egalitarian public system. The model ignores the possibility that voter participation differs across groups in society. That assumption amounts to one where all potential voters have their interests represented. Finally, the model does not distinguish between quality and quantity of health care. Thus, if the privately financed care is delivered in a way that there are service enhancements or shorter wait times, this would be represented here by higher values of total insurance coverage.

I look at the case where the conditions for constitutional support of public payment for health care services have been met and the system in place is financed by contributions proportional to income.¹⁵ All individuals know their income and risk type. The level of public finance for an individual's health care services, g , will be determined by the median voter in a majority rule setting. After g is set by the median voter, individuals can purchase additional private health insurance at an actuarially fair price for their risk type.

Kifmann (2005) considers a society in which there are two groups defined by exogenous and known incomes y_i , where y_R denotes high income and y_P denotes low income and $y_R > y_P$. λ denotes the proportion of population who are rich (R) and following Kifmann, I assume that $\lambda < 0.5$. Thus, median income is less than average income (\bar{y}):

$$y^{median} < \bar{y} = \lambda y_r + (1 - \lambda) y_p$$

There is some probability π_j that an individual will fall ill and there are two risk types in society. π_H is a high probability of falling ill and π_L is a lower risk, so that $1 > \pi_H > \pi_L > 0$. An individual's assignment to each group is exogenous.¹⁶ Following Kifmann, μ the proportion of high risk types in the population is less than 0.5.¹⁷ It then follows that the median risk type has a probability of illness that is less than the average risk of illness in the population ($\bar{\pi}$).

$$\pi^{Median} < \bar{\pi} = \mu \pi_H + (1 - \mu) \pi_L$$

the model would have the effect of further dampening demand for private coverage but would not change the qualitative results from comparative statics.

¹⁵ Kifmann (2005) defines the conditions under which a majority of the population would support the introduction of health insurance, and whether the population will prefer tax payments for it that are dependent on income. In Kifmann's paper, at the constitutional stage where individuals decide if they will support government health insurance, an individual knows their income but not their risk type. If the premium risk associated with being high versus low risk is uninsurable, then even rich individuals will support public health insurance financed through income contingent premiums. Kifmann also considers a poll tax.

¹⁶ Kifmann (2005) presents a case where the risk type of an individual can be negatively correlated with his/her income.

¹⁷ Deber et al. (2004) show that in Manitoba between 10 and 20 percent of the population are responsible for the majority of health care expenditures.

Thus, in this hypothetical society, there are four groups to consider; high income with high probability of illness (*RH*), high income with low probability of illness (*RL*), low income with high probability of illness (*PH*) and low income with low probability of illness (*PL*).

There are two states of the world for each type of agent: healthy (0) and sick (1). Agents have state-dependent preferences over consumption and health care. Consumptions in states 0 and 1 are always positive and the numeraire good. Demand for health care is only positive in state 1. Utilities in each state are:

$$\begin{aligned} U_0 &= u(c_0), u' > 0, u'' < 0, c_0 \in R^+, \lim_{c \rightarrow 0} u'(c) = \infty \\ U_1 &= u(c_1) + v(h), v(0) < 0, v' > 0, v'' < 0, h \in R^+, \lim_{h \rightarrow 0} v'(h) = \infty \end{aligned} \quad (1)$$

Individuals can pay for health services h from two sources: $h = g + I$, where g represents the value of health care services paid for by the government through tax financed transfers and I represents the value of health service costs covered by private health insurance purchased in the market.¹⁸ I assume health care is provided in competitive markets, where the price of one unit of health care is normalized to unity.¹⁹

An individual of a given risk type $\pi_j, j=H,L$, can purchase insurance I at a price $p_j \geq \pi_j$ per unit of benefit. With an insurance contract, agents pay a premium $p_j I$ in states 0 and 1. If state 1 occurs, agents receive a benefit I from the insurance company to purchase h units of health care. If $p_j = \pi_j$, then the individual purchases insurance at an actuarially fair price π_j whereas a price greater than π_j would reflect that there are risk loading or administrative loads on the unit price. When insurance prices are actuarially fair, individuals purchase “full insurance” contracts that result in equal consumption in both states of the world. When $p_j \neq \pi_j$, agents are not fully insured so consumption in each state of the world is not equal. When $p_j > \pi_j$, $c_{0,ij} > c_{1,ij}$. If the price of insurance is not actuarially fair then agents underinsure in the sense that they have greater consumption (lower marginal utility) in the healthy state. It is also the case that insurance coverage will be less than total health care demand, $I < h$ which would presumably require that some of health care demand is unmet, or the individual pays the balance out of pocket *ex post*. When the price of insurance is better than actuarially fair, agents overinsure and have higher consumption when ill than when healthy, and the level of insurance coverage exceeds what they need to meet health care demands.²⁰

¹⁸ If $g+I < h$, then either some of health care demand is unmet, or out of pocket payments may be required. This can occur if g and I are chosen *ex ante* but h is determined *ex post*. In this model, h is chosen *ex ante* as well so our consumer is choosing to meet expected health care needs.

¹⁹ Gouveia (1997) incorporates a generic positive price of health care services to incorporate the impact of inflation in health care costs on the demand for health insurance. This issue is not central to this analysis so this price was normalized to one to simplify the presentation.

²⁰ These results are well established in the economics literature on insurance demand and the proofs of them in the context of this model are available from the author on request.

Now I consider publicly provided health insurance g , financed by income proportional contributions such that the pay-as-you-go system satisfies the budget constraint:

$$t \cdot \bar{y} = \bar{\pi} \cdot g$$

An individual with income y_i pays:

$$ty_i = \frac{y_i}{\bar{y}} \bar{\pi} g \quad (2)$$

Note that for R types, $\frac{y_R}{\bar{y}} > 1$ so the proportional tax burden on the R types is greater than one, and for the P types it will be less than one.

The tax “price” per unit of g is:

$$t_i = \frac{ty_i}{g} = \frac{y_i}{\bar{y}} \bar{\pi} \quad (3)$$

In contrast to demand for private insurance, the price of government health insurance for a given type is determined by their proportional income rather than their probability of illness.

An individual will vote in support of $g > 0$ if the price of public insurance is less than the price of market purchases of insurance:

$$\pi_j > \frac{y_j \bar{\pi}}{\bar{y}} \text{ or } 1 > \frac{y_j}{\bar{y}} \cdot \frac{\bar{\pi}}{\pi_j}$$

PH types will always vote in support of $g > 0$ since they have higher than the average risk and lower than the average income. By the same reasoning, RL types always prefer $g = 0$ since their lower than average risk and higher than average income means that the price of g for them is greater than what they would pay in the private market.²¹ For PL types, they will support $g > 0$ so long as the transfers from R types to P types that they receive exceed the transfers that they make as L types to H types. By similar logic, RH types support $g > 0$ if the transfers that they receive as H types from L types exceeds the transfers they make as R types to L types.

Augmenting that budget constraint to allow for a subsidy s on the tax price of health care financed with resources other than the direct income tax on consumers on voters in a given province yields:

²¹ It is interesting to note that historically, most attempts to introduce public health insurance in Canada and the United States proposed to restrict compulsory participation to earners under an income ceiling (Emery 2010). This would be equivalent to exempting y_R types from the program. To pay for the health insurance, taxes would have been levied only on y_P types so the principle source of redistribution would have been between risk types. Some subsidy from the state was proposed in each case which would have redistributed from exempted y_R types to y_P types.

$$(1-s) \cdot t \cdot \bar{y} = \bar{\pi} \cdot g.$$

With a subsidy for the public health care spending, the tax price facing a consumer is:

$$t_i = (1-s) \cdot y_i \cdot \frac{\bar{\pi}}{y}.$$

Unlike the previous public budget constraint, the link between taxes paid for a level of g is weakened. If for some reason voters in a province determine that they do not wish to pay higher taxes to support a given level of g , then increased federal cash transfers (by increasing the value of s) can support the level of health spending in that province.²² What is not clear, however, is whether the subsidy is supporting the appropriate level of spending, nor whether the subsidy represents a sustainable source of finance for provincial health care spending.

To characterize individual demands for government health transfers and private health insurance coverage, I assume the government chooses g , holding I fixed, to maximize the expected utility of the median voter in the population.²³ Individuals are taxed to provide public health insurance regardless of whether they are sick or healthy. Once the median voter establishes g , I consider a second stage where individuals can choose to purchase additional insurance via a private contract. The way to think of the role of g in this model, is that once chosen, it moves the consumption endowment point for all individuals. For individuals who have some unmet demand for insurance coverage at this new endowment point, they will purchase private coverage. In this context, private insurance coverage in this model could be interpreted as “gap coverage”.

STAGE 1: The Government establishes g

With tax financed public health care, expected utility is given by:

$$EU_{ij} = (1 - \pi_j)u(c_{0,ij}) + \pi_j[u(c_{1,ij}) + v(h)] \quad (4)$$

$$c_{0,ij} = (1 - (1-s) \cdot t_i)y_i = y_i - (1-s) \cdot \frac{y_i}{y} \bar{\pi} g \quad (5)$$

$$c_{1,ij} = (1 - (1-s) \cdot t_i)y_i + (g - h) = y_i + \left(1 - (1-s) \cdot \frac{y_i}{y} \bar{\pi}\right) g - h \quad (6)$$

²² To simplify the derivations I consider the effect of public borrowing to pay for health care on the median voter's choice of g to be similar to that with $s > 0$ and I consider the subsidy amount to include any net borrowing by governments to pay for current health care expenditures.

²³ In the first stage where g is chosen, I treat the decision as akin to one where there is exclusive public provision

The preferred level of public health insurance and the demand for health care for an individual with income y_i and illness probability π_j is found by maximizing expected utility with respect to g and h .

The equilibrium choices of g and h for an individual with income i (rich or poor) and risk type j (low and high) are:²⁴

$$g_{ij} = \frac{2\bar{y}^2 \pi_j - (1-s)(1+\pi_j)\bar{\pi} y y_i}{(1-s)\bar{\pi}(\bar{y} - (1-s)\bar{\pi} y_i)(1+\pi_j)} \quad (7)$$

$$h_{ij} = \frac{1}{1-s} \cdot \frac{\pi_j}{1+\pi_j} \cdot \frac{\bar{y}}{\bar{\pi}}. \quad (8)$$

Consumption in each state for an agent with income y_i and sickness probability π_j is:

$$c_{0,ij}^s = \frac{\bar{y}(1-\pi_j)y_i}{(1+\pi_j)(\bar{y} - (1-s)\bar{\pi} y_i)} \quad (9)$$

$$c_{1,ij}^s = \frac{\bar{y}\pi_j}{\bar{\pi}(1-s)(1+\pi_j)} \quad (10)$$

The demand for government provided insurance for a type ij is dependent on the average probability of becoming ill, average income, own income, and the own probability of becoming ill. Demand for public insurance is decreasing in own income and increasing in the probability of becoming ill. The preferred level of health care for type ij depends on their probability of becoming ill, but not on their own income. Since $\pi_H > \pi_L$, $h_H^G > h_L^G$. The high risk types prefer higher levels of public health care provision. Demand for health care is strictly increasing in average income, and decreasing in the average probability of becoming ill. Not surprisingly, the demand for government insurance is strictly increasing in the size of the subsidy for both risk types.

As it was assumed that the proportion of high risk types in the population, μ , is less than 0.5, and the proportion of rich types, λ , is less than 0.5, in a majority voting equilibrium the level of public provision will be decided by the low income, low risk (PL) type who is the median voter. The PL types simultaneously choose insurance and health care to maximize their utility. The remaining consumer types take the levels of tax financed insurance and health care chosen by PL as given. It is important to note, that with the democratic structure of this model, the level of g that is chose by PL types will not be influenced by the demands of any other groups in society. High income and high risk types can lobby all they want, but so long as the median voter is a PL type, their political demands for a different level of g will have no influence.

²⁴ The maximization problem and the derivations of these solutions are available from the author on request.

The majority voting equilibrium level of public health insurance and publicly financed health care are with a PL median voter are:

$$g_{PL}^{MV} = \frac{2\bar{y}^2 \pi_L - (1-s)(1+\pi_L)\bar{\pi}\bar{y}y_P}{(1-s)\bar{\pi}(\bar{y} - (1-s)\bar{\pi}y_P)(1+\pi_L)} \quad (11)$$

$$h_{PL}^{MV} = \frac{1}{1-s} \cdot \frac{\pi_L}{1+\pi_L} \cdot \frac{\bar{y}}{\bar{\pi}} \quad (12)$$

Consumptions for the PL median voter in states 0 and 1 are:

$$c_{0,PL}^{MV} = \frac{\bar{y}(1-\pi_L)y_P}{(1+\pi_L)(\bar{y} - (1-s)\bar{\pi}y_P)} \quad (13)$$

$$c_{1,PL}^{MV} = \frac{\bar{y}\pi_L}{\bar{\pi}(1-s)(1+\pi_L)} \quad (14)$$

The choice of insurance and health care for type PL is equivalent to their choice in a competitive market with insurance price $p_{PL} = \frac{\bar{\pi}}{\bar{y}}y_P$. However, this is not an actuarially fair price so $c_{0,PL}^{MV} \neq c_{1,PL}^{MV}$. It is useful to compare this situation to the one where the insurance price is actuarially fair. Consumption for type PL when faced with price $p_{PL} = \pi_L$ is:

$$c_{0,PL}^* = c_{1,PL}^* = \frac{y_P}{1+\pi_L}$$

Comparing these full insurance consumption levels to equations (9) and (10), I can determine a condition for overinsurance in the case of public provision. If the tax price is less than π_L , then $c_{0,PL}^* > c_{0,PL}^{MV}$ since the PL type chooses to overinsure so that consumption in the unhealthy state exceeds consumption in the healthy state. For the PL median voter to choose $g > 0$, $\frac{\bar{y}}{y_P} > \frac{\bar{\pi}}{\pi_L}$, which reflects that the income transfer from rich to poor is greater

than the transfer from low-risk to high-risk making the tax price of g better than actuarially fair for PL types. Since there is a diminishing marginal utility of income, this condition means that income in the healthy state will be lower than in the unhealthy state if PL types are to politically support $g > 0$. In other words, PL types select a level of g which leaves them “over-insured”. As discussed earlier, it is also the case that for PL types, the level of g exceeds h meaning the level of public finance transfers more income between the healthy and unhealthy states than what they need to meet their health care demands. Since government finance pays for h this situation would be observed as a well resourced health

care sector relative to what would be observed if there were only private finance of h .²⁵ The condition for type PL to overinsure relative to the actuarially fair insurance price was $\frac{\bar{y}}{y_P} > \frac{\bar{\pi}}{\pi_L}$ and with the subsidized tax price becomes $\frac{\bar{y}}{y_P} > (1-s)\frac{\bar{\pi}}{\pi_L}$. So overinsurance becomes more likely with a subsidy. It can be shown that PL types choose higher g and h with $s > 0$, and hence overinsures further with a subsidy relative to the non-subsidized tax price.

STAGE 2: Individuals can choose $I \geq 0$

As noted earlier, each risk type can purchase market health insurance I at an actuarially fair price. Given the structure of the political process, it is also the case the PL types select g and the other three groups take that level of coverage, and the taxes paid, as given when they choose how much supplementary coverage to purchase. Another way to think of the role of g , is that once chosen, it moves the consumption endowment point for all individuals. For individuals who remain less than fully insured, they will purchase private coverage to fully insure them relative to the new endowment point. In this context, private insurance coverage in this model could be interpreted as “gap coverage”.

Each type of agent chooses I_{ij} and h_{ij} to maximize expected utility taking the level of g and the taxes needed to finance that level of g as given. I assume that I can be purchased at an actuarially fair price.

$$\max_{I \geq 0, h \geq 0} EU_{ij} = (1 - \pi_j)u(y_i - t_i g_{PL}^{MV} - \pi_j I_{ij}) + \pi_j [u(y_i + (1 - t_i)g_{PL}^{MV} + (1 + \pi_j)I_{ij} - h_{ij}) + v(h_{ij})]$$

Solving for the utility maximizing choices of h and I for a given type yields the following insurance demand function:

$$I_{ij}^* = \frac{y_i}{1 + \pi_j} - \frac{1 + t_i}{1 + \pi_j} \cdot g_{PL}^{MV} \quad \text{where } t_i = \frac{y_i}{y} \bar{\pi} \quad (15)$$

Market insurance is purchased to fill the gap between government payment and a fully insured consumption position. Since the insurance demand function is linear in income, high income (R types) individuals purchase more insurance than low income individuals (P types). And since $\pi_H > \pi_L$, high risk types purchase less insurance than low risk types, so:

²⁵ This “over-resourcing” of the health sector could be apparent in several ways. For example, there could more health care service providers servicing the population than otherwise; no barriers to access and perhaps higher quality services such as private rooms versus general ward beds. The over-resourcing could be apparent in the up-skilling of service providers, or substituting to more expensive labour to provide services (e.g. doctors do things that nurses could do). Excess capacity in the health care system could result in the use of high cost acute care beds for elderly patients who could be serviced in lower cost continuing care facilities. Finally, over-resourcing could be a reason why health care systems in Canada do many things like research that they do not need to do and that do not produce health care services. Finally, the generous resourcing of the system may inflate the incomes of service providers and system administrators.

$$I_{Rj}^* > I_{Pj}^* \text{ and } I_{iL}^* > I_{iR}^*$$

I assume that supplemental insurance demands must be positive so that it is not possible to buy a contract that transfers income from the unhealthy state to the healthy state.

$$I_{ij}^* > 0, g_{PL}^{MV} < \frac{y_i}{1+t_i}$$

Substituting in the *PL* type median voter choice of *g* confirms the result that low income (y_P types) individuals will not demand any positive level of market insurance if their tax price is less than the actuarially fair price for market coverage. Intuitively, this is because the net subsidy necessary to make government insurance politically sustainable also results in y_P types, both *H* and *L* risks, being overinsured. I know that if *PL* types have no demand for supplementary insurance in this model, then neither will *PH* types since the condition for $I > 0$ is independent of risk type and depends solely on income type.

High income individuals want more insurance than *P* types, hence there could be demand for supplementary insurance coverage from y_R types.²⁶ The difficulty with precisely pinning down the conditions for positive supplementary insurance demand is that the condition is a non-linear function of the tax rates, and a quadratic function in t_R in particular.²⁷ I know that the gap in tax prices for *g* for *R* and *P* types must be positive otherwise the y_P types would never support $g > 0$. This condition also puts limits on how large the gap in tax rates can be for there to be supplementary insurance demand for y_R types. t_R is increasing the ratio of y_R to average income and as t_R increases for a given t_P , the *PL* median voter increases the level of *g*. These two influences work against y_R types having demand for supplementary insurance by reducing the size of the insurance gap by raising *g* and by reducing after tax income.

EXPLAINING THE EVOLUTION OF HEALTH SPENDING IN CANADA

With the introduction of government health insurance in the 1950s and 1960s, there was little political pressure or demand for private insurance for publicly financed health care services. Under federal/provincial government cost sharing, taxpayers did not pay the full resource cost of health care through their provincial income tax systems. The significance of the use of tax points through EPF, the CHST, and the CHT to allow the provinces to

²⁶ Even if y_R types have no demand for supplementary insurance, one cannot say that *RL* types are made better off by public health insurance. In the absence of a subsidy for *g*, they would be unambiguously better off if they could purchase private insurance in the absence of the public system.

²⁷ Evaluating the $I_{Rj}^* > 0$ condition shows a positive demand for supplementary insurance when:

$$t_R - t_P < \left(1 + \frac{y_P}{y_R}\right) - 2 \left[\frac{\frac{\pi_L}{1 + \pi_L}}{\frac{t_R}{1 + t_R}} \right] \text{ where } t_i = \frac{\bar{\pi}y_i}{\bar{y}}, i = R, P$$

finance health care, however, is that, unlike cost sharing, it creates a clearer link in the minds of voters and politicians between health care expenditures and the tax price of health insurance — at least, it reduces the size of the subsidy of the health care services individuals obtain.

What effect would a subsidized tax price and deficit financing have on government health spending and on the demand for supplementary insurance? As one would expect, the median voter model shows that a subsidy increases the size of government health expenditures and, depending on the size of the subsidy, drives the demand for supplementary insurance toward zero. Conversely, reducing the size of the subsidy reduces the amount of government-provided health care services and increases the demand among high-income individuals for supplementary insurance.

Evans (2003, 19; 2004) alleges that the strain on financing the public health care system has arisen because governments have been more sensitive to the policy preferences of higher-income Canadians and, presumably, corporations.²⁸ For this to be the case, however, the median voter would have to be an individual with high income. Clearly, if this were so, in the absence of a subsidy a prohibition on private insurance would be needed to ensure that high-income individuals choose a level of health care services that is greater than zero, otherwise they would use their political power as voters to choose not to pay for health care services at all,²⁹ which they obviously would strictly prefer. If this were not the case, however, it is not clear why such individuals would not simply be able to eliminate the prohibition in the first place.

With a large enough subsidy, it is possible that even if the median voter is an individual with high income individual and a low probability of illness, that person could choose a level of health care services that overinsures both himself and the rest of the population. Figure 2 depicts the choice of public payment for health care services with a subsidy by a median voter who is a low-income individual with a low probability of illness (or low risk) and a median voter who is a high-income, low-risk individual, and the latter's preference for private health insurance depending on the size of a subsidy for public health care services. The figure shows that, with a subsidy of 50% on the tax price of public finance for health care services, a median voter who is a high-income, low-risk individual would choose a high level of services (2.5 times their endowed income). As the subsidy falls, that voter's support for public health care services would also fall, collapsing to zero if the subsidy were below 40%.

Figure 2 suggests that changes in federal finance commitments for provincial health spending that would have reduced the subsidy from around 50% would be catastrophic for

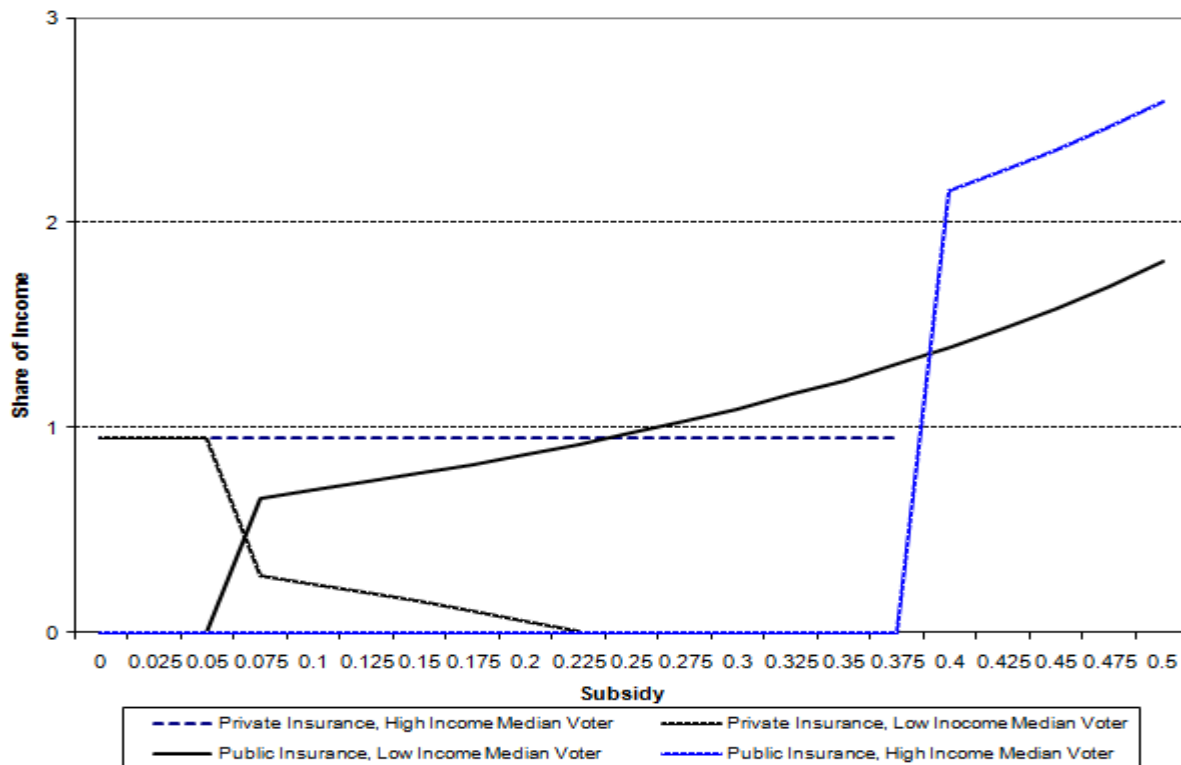
²⁸ Evans (2004, 187) further argues that the real motive underlying proposals for more private financing is simply to allow those with high incomes to obtain first-class care without having to pay taxes to help support a similar standard of care for everyone else. In his view, the prohibition on private payment and private insurance for medicare services ensures that high-income Canadians pay the necessary taxes to support medicare.

²⁹ High income individuals would support a positive level of public finance of health care in the absence of a subsidy if the public finance arrangement had a lower tax price than the price of available private insurance. This could be the case if private insurance profit margins and administrative overhead costs are high enough to offset the disadvantage of the tax price for high income types.

the public health care system if the median voter were a high-income, low-risk individual. Such a median voter would have pushed for zero public health care services and a switch to a fully privately financed health care system. In contrast, if the median voter were a low-income, low-risk individual, reducing the subsidy would reduce the level of services made available but would not necessarily threaten the political viability of the public health care system even if high-income individuals demanded private health insurance. Indeed, support for public health care by such a median voter would survive even if the subsidy were less than 10%. Notice also that the subsidy could fall dramatically before high-income individuals start to demand private health insurance, and even as such insurance emerged, its growth would be gradual and the market size would remain relatively small.

Figure 2

Public Insurance Choices of High and Low Income Median Voters and Private Insurance Demands of High Income Individuals versus Size of Subsidy



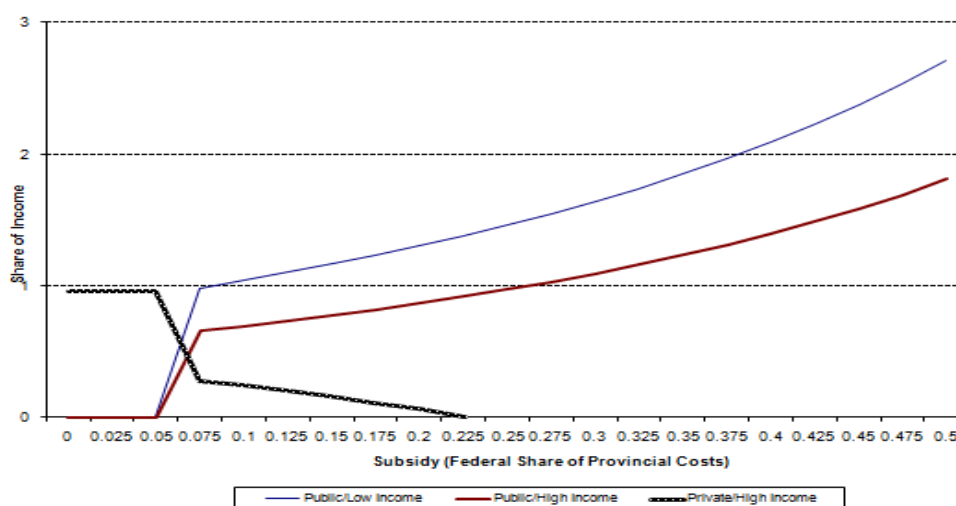
The policy literature that has looked at the issue of private payment for medicare services in Canada supports the scenario of the median voter who is a low-income, low-risk individual over that of the median voter who is a high-income, low-risk individual. The likely size of the market for private insurance is, in any case, small (Evans 2004; Emery and Gerrits 2006). Polling of Canadians suggests that a majority does not feel unsatisfied

with the public system and that only a minority believes private payment and private insurance would be a good way to add revenues to the health care system.³⁰

As the median voter who is a low-income, low-risk individual, in particular, has faced a rising tax price for health care — with the reduced federal subsidization of provincial spending on health care services and the increasing reluctance of provincial governments to run deficits — the level of public health care spending has fallen, creating an unmet demand (or a larger unmet demand) on the part of high-income individuals. In other words, the demand for private insurance is a *symptom* of the underlying changes to public health care spending, rather than the *cause* of such changes (see Figure 3). Indeed, the timing of these changes explains why there was little opposition to the passage of the 1984 CHA, which became law at a time when public spending levels were high due to the subsidized tax price, and why challenges to these changes have mounted since 1995.³¹

Figure 3

Public and Private Health Insurance as a Share of Income when Tax Price is Subsidized with Federal Government Transfers



³⁰ See Health Care in Canada Surveys, annual 1999-2007; available online at http://www.hcic-sssc.ca/index_e.asp POLLARA results. The 2007 survey asked, “If more money was needed to improve the health care system, which of the following options would you most strongly support?” Only 13% of respondents supported “[h]aving the public purchase supplemental, private health insurance to cover a portion of the cost of health care, either directly themselves or through their Employer”; 19% believed that the system would be improved by “[i]ncreasing taxes and directing it to the health care system,” while 29% preferred to see funding diverted from other government services to health care; see also Boychuk (2008a). Ruggeri, Van Wart, and Howard (1995) look at the fiscal incidence of policy options using income data for 1986 and voter participation rates for 1984 to infer voters’ preferences over various policy options for balancing the federal budget. They find that the coalition favouring expenditure cuts and opposing tax increases is made up largely of households with above-median income and above-average propensity to vote and whose members tend to be in their peak earnings years. With a potential electoral majority against tax increases in the 1980s, the policy choice was between cuts in government services and cuts in transfers. The former presents less opposition and, therefore, would have been expected to be the first choice, at least in the first round.

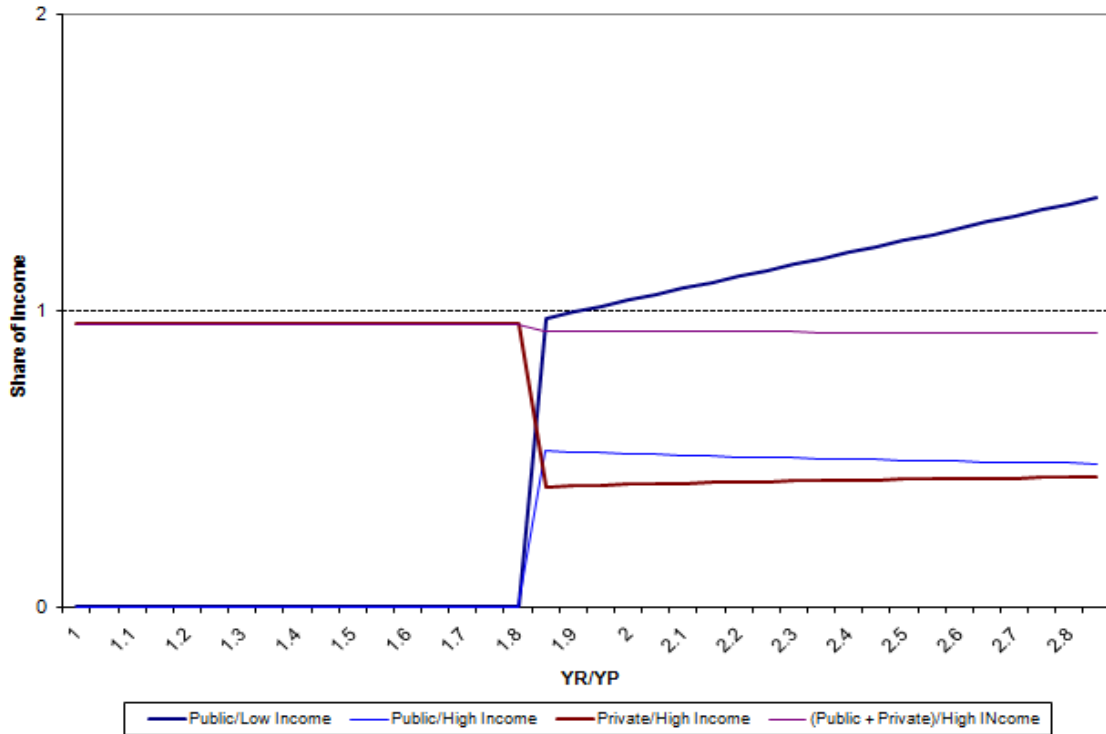
³¹ Federal government cash transfers for health care fell from 25.2% of provincial government expenditures on health care in 1977 to 24% in 1984 and to 12.8% in 2000 (Banting and Boadway 2004, 17).

Ironically, this median voter model suggests that rising income inequality might have eliminated growing political pressure to weaken the CHA's incentives intended to preclude private health insurance purchases. Saez and Veall (2005) document the rising income share of high-income Canadians after the 1990s, which might have been responsible for the return of high growth rates of public health care spending. Overall, the federal tax system became more, not less, progressive over the 1990s (Martineau 2005; see also Dyck 2003). Between 1990 and 2002, the 10% of Canadians with the highest incomes paid more than half of all federal income tax, while the amount this high-income group paid increased at the same rate as their incomes. In contrast, the 50% of taxfilers with the lowest incomes paid less federal tax in 2002 than in 1990 despite their incomes having risen over the same period. The result was a lower tax price for health care services for low-income individuals, which led to an expansion of services and a reduction in demand for supplementary insurance.

Figure 4 shows the choice of health care services by the median voter who is a low-income, low-risk individual as the ratio of high-income to low-income increases, holding all else constant. The demand for private insurance in this model is "gap insurance" to cover the difference between an individual's total insurance demand and what is provided to them through publicly financed health care services. Recall that only high income types will have unmet insurance demands. Also shown in the Figure is the choice of private health insurance by high-income, low-risk individuals relative to their incomes. Up to an income ratio of 1.8, the median voter who is a low-income, low-risk individual chooses to have no public finance of health care services since the tax price of a unit of services exceeds its actuarially fair market insurance price. Up to an income ratio of 1.8, both low- and high-income individuals would fully insure through the private market to have 95% of their uninsured income in the healthy state in both states of the world. As the income ratio rises, the transfer to low-income individuals from high-income individuals reduces the former's tax price and they would choose a level of public health care services that exceeds their endowed income in the healthy state. Up to an income ratio of 3.0, a low-risk, low-income median voter chooses a level of public spending on health care that is 1.4 times their income. It is clear that low-income individuals in this overinsured situation would not demand private health insurance. In contrast, a low-income, low-risk median voter's choice of government spending on health care is less than half a high income individual's endowed income resulting in a positive demand for supplementary private health insurance. A high income individual would purchase an amount of private health insurance that is around 40% of his endowed income. High-income individuals would be strictly worse off with the mixed finance system than with a pure private system since their total insurance coverage would be less due to the higher cost for them of publicly financed health services. In the situation depicted, a prohibition on the purchase of private insurance (requiring that no individuals wish to acquire private health insurance) has a high welfare cost for high-income individuals.

Figure 4

Public and Private Health Insurance as a Share of High and Low Incomes versus the Ratio of High to Low Income

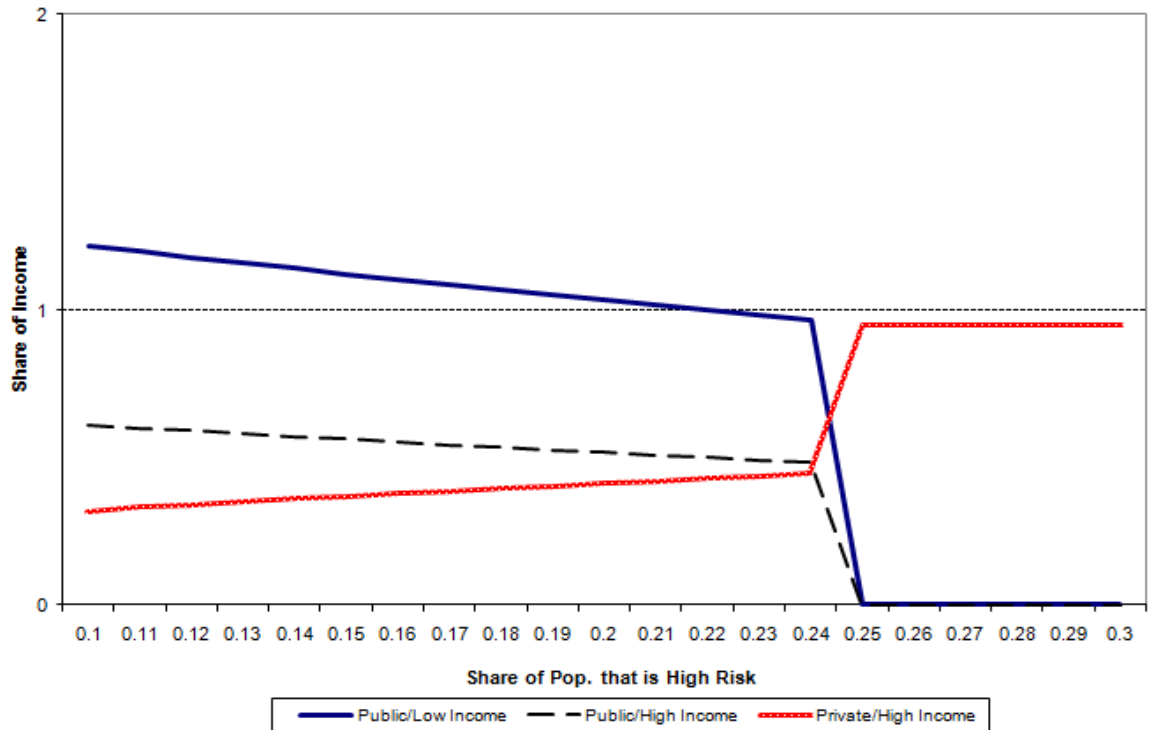


Looking to the future, the model allows one to consider the potential impact of population aging on medicare and the level of public health care spending. The share of Canada's population over age 65 is forecast to increase from around 12% to 25% between 1980 and 2030, and health care expenditures are forecast to increase around 1% per year between now and 2050. Given this apparently modest spending growth, some observers suggest that population aging is not a serious problem for the financial sustainability of medicare (see, for example, Evans et al. 2001; Hogan and Hogan 2004). Nevertheless, this modest fiscal impact still might result in a serious political crisis for medicare. In Figure 5, I consider a situation where the median voter is a low-income, low-risk individual and the population is aging, which I represent with a growing share of the high-risk population. As the proportion of high-risk individuals in the population rises, the choice of health care services by this median voter falls (increasing the transfer from low-risk to high-risk individuals). As the level of health care services falls, demand for private insurance by high-income individuals rises, as they have greater unmet demand through the public system. But this is not the source of the political crisis. Rather, the real problem for governments is that, when the share of the high-risk population reaches 25%, the tax price of health care services for low-income, low-risk individuals becomes too high and they prefer no services. There is no soft landing in this model, as the switch by low-income, low-risk individuals from relying solely on public health care services to relying solely on

private health insurance is immediate — unless, of course, population aging also induces higher incomes (as discussed in Bohn 1999; and Emery and Rongve 1999).

Figure 5

Public Insurance and Private Insurance Relative to Income versus Share of Population Who Has High Risk of Illness



The above example above also provides a different explanation for the alleged cost inflation in mixed public/private health care finance systems compared to a single-payer arrangement like Canada's. In a comparison of OECD countries, Tuohy, Flood, and Stabile (2004) find that mixed-finance systems have higher costs of public insurance than single-payer public systems, which has been interpreted as evidence of the negative influence of parallel private insurance coverage on the public system. The model I present here, however, provides an alternative view: in OECD countries with a higher proportion of individuals with a high risk of illness (such as the elderly), the amount of public health care services available will be lower because of the higher tax price of providing such services, and demand for private health insurance will be higher. This results in a correlation between the costs of public insurance and the structure of financing the insurance, but the structure of finance is a result, rather than the cause, of the cost difference.

CONCLUSIONS

The infusion of the health care system with revenues from non-income tax bases is a key explanation for the political popularity of public health insurance and for the lack of political pressure to allow supplementary private insurance coverage. It is interesting that the key recommendation to come from the Romanow Commission was to increase both the federal share and the level of health care spending.³² In the short run, this policy would help to sustain, if not increase, the overall level of public health care spending so long as Canadians did not recognize the current and future tax obligations arising from a return to the older model of health care finance. In terms of maintaining national support for the principles of the 1984 *Canada Health Act*, the Romanow Commission's recommendation would be effective due to the redistribution of after-tax incomes across provincial populations that would result. Moreover, to the extent that the "have" provinces redistribute public revenue to the "have-not" provinces, the recommendation would garner support among the latter, but would that support be sufficient to offset opposition in the "have" provinces?³³

More fundamentally, is it socially desirable to sustain single-payer medicare by subsidizing its tax price and obfuscating the link between spending levels on health care and the tax cost of that spending? Much has been made of the social solidarity expressed through the single-payer health care system and the preclusion of parallel private payment and insurance.³⁴ If the system were fully financed on a pure pay-as-you-go arrangement, with no subsidy or borrowing to augment spending levels, then it could be socially desirable, but only in the absence of an aging population — with population aging, a pay-as-you-go system would fail to price the future liabilities of the population, resulting in a greater financial burden on future generations. Indeed, Canadians have not paid the full resource costs of their chosen health care spending levels, leaving future generations to pay for today's health care services. In other words, the Romanow Commission's proposal would

³² As the report notes (2002, xvii), [t]o be sure, the system needs more money. In the early 1990s, the federal share of funding for the system declined sharply. While recent years have seen a substantial federal reinvestment into health care, the federal government contributes less than it previously did, and less than it should. I am therefore recommending the establishment of a minimum threshold for federal funding, as well as a new funding arrangement that provides for greater stability and predictability — contingent on this replenishment supporting the transformative changes outlined in this report.

³³ After dramatic reductions in non-renewable resource revenues and the elimination of its health care premiums, and facing looming tax increases and/or expenditure cuts, Alberta recently requested \$700 million annually in additional funding for health care from the federal government. Ottawa rejected this request even though, under a ten-year federal-provincial 2004 agreement, Alberta receives about \$200 less per resident in health transfer funding than do most other provinces because of the strength of its tax revenues. MP Ted Menzies, parliamentary secretary to federal finance minister Jim Flaherty, commented: "The day or the minute that Alberta becomes a have-not province, pray to God they don't, then we have to readdress Alberta's health transfer" (quoted in Renata D'Aliesio and Jason Fekete, "Feds deny Alberta's health cash appeal: Ottawa will give province \$222M for infrastructure," *Calgary Herald*, 7 July 2009, pp. A1, A7).

³⁴ The Romanow Commission (2002, 31) asserts that "our tax-funded, universal health care system provides a kind of 'double solidarity.' It provides equity of funding between the 'haves' and the 'havenots' in our society and it also provides equity between the healthy and the sick." For evidence on the progressivity of Canadian health care finance, see Dyck (2003, 18-19); Evans (2003, 17); and McGrail (2007). Glied (2008a) challenges this perception, however, by arguing that the "haves" have higher health care costs along with their higher taxes since they make more use of specialist services and diagnostic services.

maintain temporary solidarity among Canadians but at the expense of intergenerational inequities. Robson (2007) identifies an enormous unfunded liability of Canadian health care under the status quo that will require higher taxes or lower spending levels in future — in short, future Canadians will pay more and/or get less from medicare than do today's Canadians.

Canada's public health insurance system is alleged to be in the midst of a political crisis, and that opposition to the system is coming from high-income Canadians who would prefer not to pay the taxes that are redistributed to lower-income Canadians through the health insurance arrangement and who would rather be able to purchase private health insurance. In this view, the *Canada Health Act's* prohibition of supplementary private insurance is deemed essential to maintain higher-income Canadians; commitment to the redistributive function of the current health insurance system and to ensure that adequate public funding is available for it. Allowing the rich to purchase private insurance, it is argued, would reduce their "voice" in encouraging more resources for the public health care system.

In this paper, I have examined a simple political economy model of a public health insurance arrangement that demonstrates that complaints of higher-income Canadians likely have little effect on the public health insurance system. The majority of Canadians who prefer to have public health insurance also have no demand for supplementary private health insurance, since the level of coverage in the public system more than fully insures them due to the redistribution that occurs from high-income to lower-income individuals. If the amount of redistribution or the level of tax premium subsidization were to fall, however, lower-income Canadians would choose to have a less generous public health care system. And, if the level of public health insurance coverage were to fall, the desire of higher-income Canadians to purchase supplementary private insurance would increase, since the public system would cover less of their total insurance demand. The important point to recognize is that, under the status quo, allowing the private insurance market to develop would have no impact on the level of public health insurance coverage, since that coverage is not determined by higher-income Canadians. Thus, there is little justification for the continued prohibition of supplementary private insurance coverage; it likely does nothing to improve the financial or political sustainability of Canada's public health insurance arrangement, but it does reduce the well-being of higher-income Canadians.

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