The Changing Participation Rate of Canadians: New Evidence from a Panel of Demographic Groups

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The decline in the Canadian participation rate in the 90s

- In the 1998 symposium, there was a wide agreement that structural factors explained much of the 2.7 percentage points decline in the Canadian participation rate observed from 1989 to 1996.
- The « Great Canadian Slump » accounted for 1 percentage point (40% of the total) (Fortin and Fortin, 1999)

Structural factors behind the decline:

- Changing composition of the labour force (increased weight of the 55+ age group);
- Rising school attendance;
- Better income protection for older people;
- Worsening labour market opportunities for low-skilled workers;
- Maturing of cohort effects for middle-aged women

Social policy also played a role:

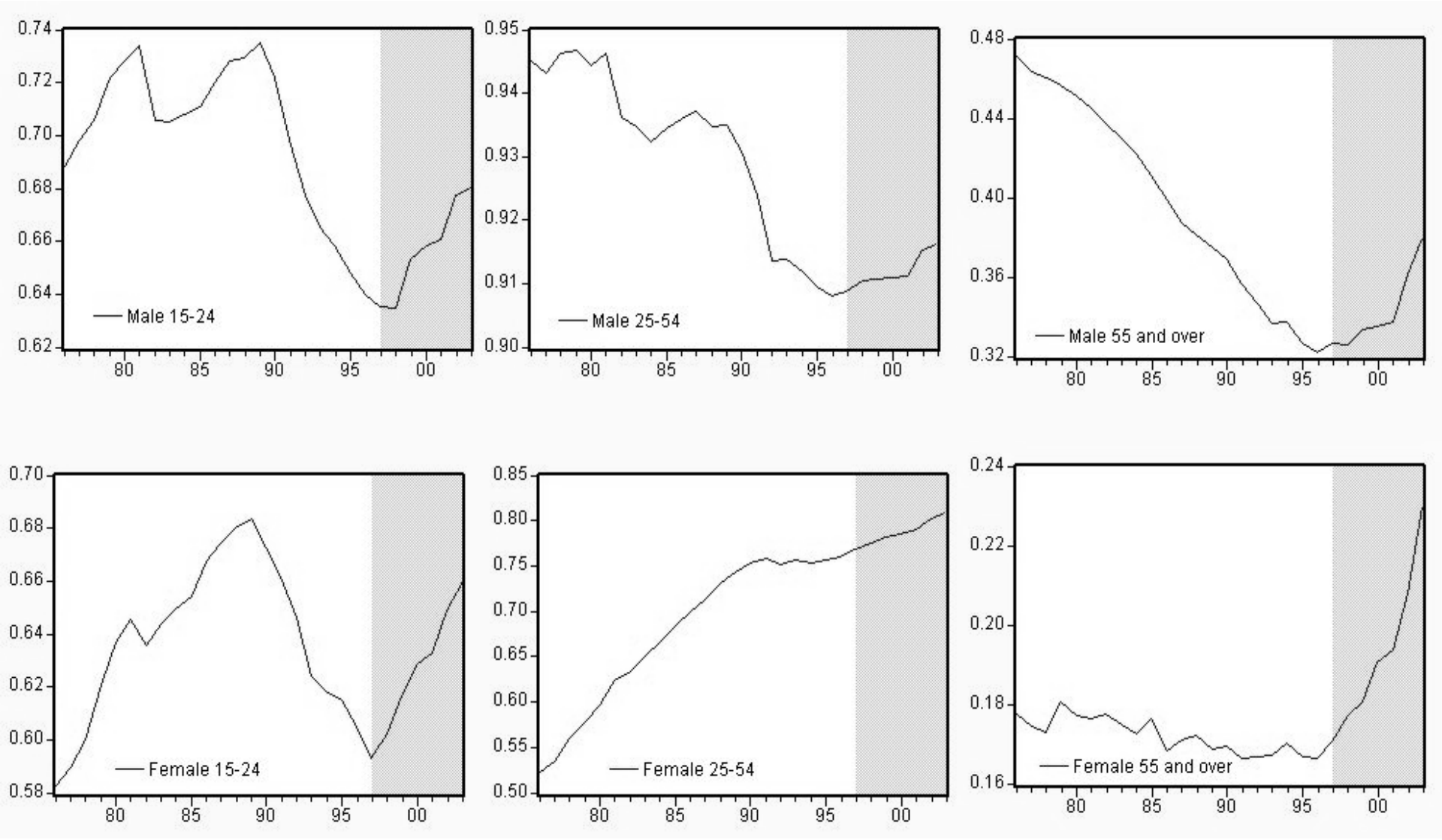
- The tightening of unemployment insurance played a significant role particularly for the young (Fortin and Fortin, 1999)
- The decline in provincial minimum wages also reduced the participation rate of the 15-24 age group.

How did the future look in 1998?

- Without a reversal of structural factors, a return to the participation rate of 1989 (67.3%) did not seem likely even if the recovery lowered the male unemployment rate to the 1989 level (8.2%).
- Ip, King and Verdier (1999) were more optimistic on the future participation rate of the 55+ group.
- In 2003, the participation rate was 67.5% and the unemployment rate 8.3%. We are back to 1989.
- Did we guess the cycle inadequately?

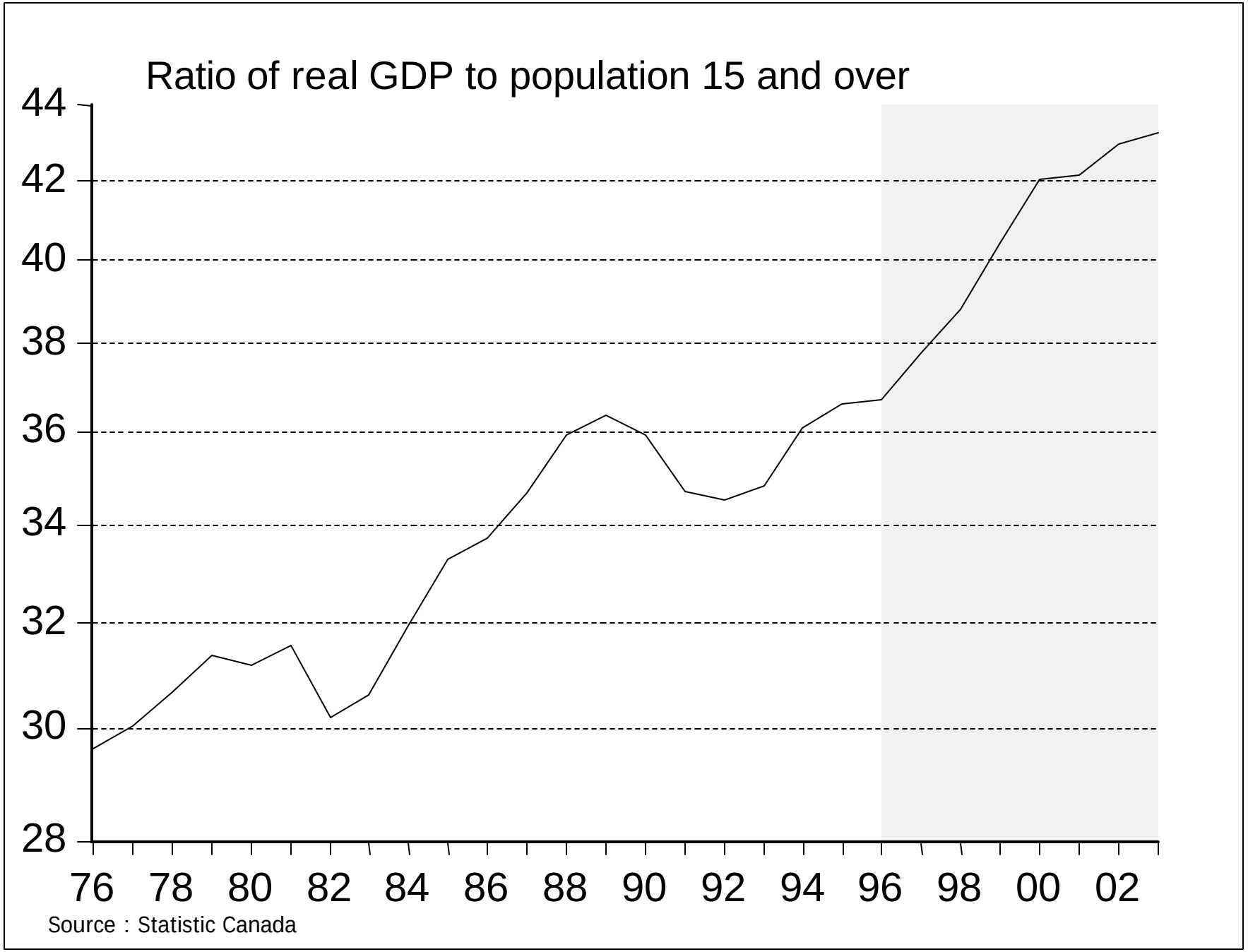
The participation and employment rates

Participation rates for demographic groups



Key observations on various groups

- Since 1997, the participation rate of every age-sex group has increased.
- The participation rate of young males remains significant below its 1989 level.
- The trend decrease for men 25-54 and 55+ has stopped. The trend increase for women 25-54 has resumed but at a slower pace.
- There was a spectacular rise in the participation rate of women over 55.
- The increase for older people has been particularly rapid since 2002.


Ratio of real GDP to population 15 and over
44
42
40
38
36
34
32
30
28
76
78
80
82
84
86
88
90
92
94
96
98
00
02
Source : Statistic Canada

Possible explanations for 1997-2003:

- A major improvement in job opportunities
- Cohort effects still at work for women aged 25-54 and over 55
- Wealth effect due to the stock market collapse
- Social policy reversals

Contribution of this study

- Fortin and Fortin (1999) used a panel of 6 demographic groups (age-and-sex groups 15-24, 25-54 and 55+) to assess the importance of cyclical, structural and social policy changes on the participation rate.
- By updating this study, we can estimate the relative impact of these factors since 1997 and check for unusual shocks.
- We then discuss what may explain the structural changes and the unusual shocks.

The Model

- $?\log(L_i) = ß_0 + ß_{i1}?\log(J) + ß_{i2}?\log(W/P) + ß_{i3}?\log(W_m/P) + ß_{i4}?\log(1+rD/M) + ß_{i5}?\log(B/P) + ß_{i2}T + e_i$, $i =$ 1 to 6
  where:
- L_i : Participation rate for demographic group *i*.
- *J* : Index of job opportunities (+)
- *W/P* : Ratio of average hourly earnings to CPI (+ or -)
- W_m/P : Ratio of average minimum wage to CPI (+ or -)
- *rD/M* : Implicit wage subsidy rate by UI which is the product of the replacement rate *r* by the maximum duration of benefits (*D*) for minimally qualified workers divided by the minimum qualifying period (*M*); calculated at constant provincial unemployment rates (+ or -)
- *B/P* : Ratio of average provincial SA benefit to CPI (-)

Remarks

1. National averages are obtained by giving to each province a constant weight from 1969 to 2003.
2. More details can be found in our 1999 paper.
3. Estimation is in first differences, to avoid problems with non-stationarity.
4. The constant captures the basic time trend in the participation rate while the presence of T as a regressor allows for a changing time trend – whatever the source.
5. Because of the logarithmic form, coefficients have the dimension of elasticities.

Problems in updating the social assistance benefit variable

- In our 1999 study, the SA benefit was calculated by dividing the sum of provincial expenditures on social assistance by the corresponding recipient population. Because similar data are not available for recent years, data for the 1996-2003 period comes from *Welfare incomes 2002* (National Welfare Council).

- For each province, the average SA benefit is the arithmetic mean of real welfare benefits for 4 categories of households (single employable, person with a disability, single parent with one child, and couple with 2 children). The national average has been calculated by weighting provincial SA benefits with the same fixed weights as used for minimum wages.

- Data for 2003 have not been published yet, but should show no large swings. In order to keep 2003 in the sample, we assume that the real SA benefit declined by 2% in 2003 - a continuation of the 10-year trend.

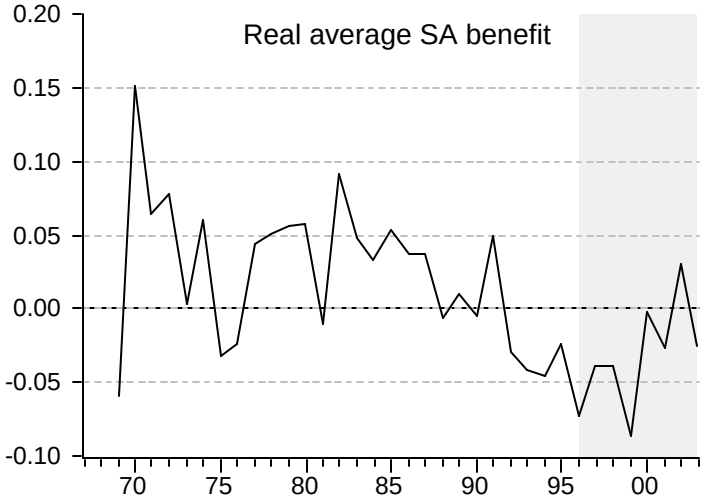
Updating the index of Job Offers

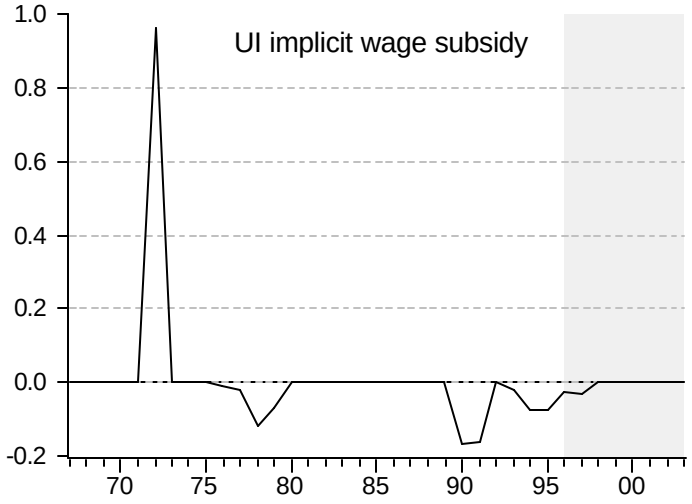
- Statistic Canada stopped publishing the Help-Wanted Index (HWI) at the end of 2002 because newspaper ads were no longer seemed a valid indicator of job offers.

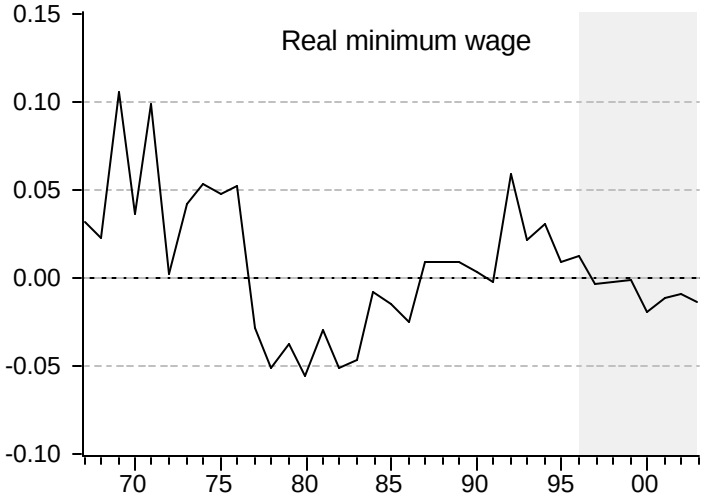
- A regression of the log change of HWI on the log change of real GDP showed significant negative dummies in 2001, 2002 and 2003, confirming the suspected problems with HWI.

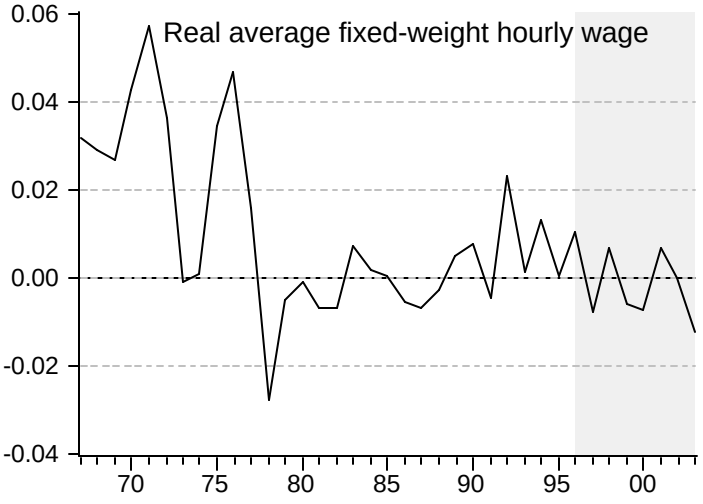
- To avoid using this biased indicator of job market opportunities, we have used the log change in real GDP as our indicator of changes in job offers for the entire sample period.

Log changes of structural variables: SA benefits have declined…









Preliminary findings

- As previously, the real wage does not seem to have any net effect on participation. It has been removed.
- Equations for both men and women aged 55 and over have negative constants and positive trends. But the Durbin-Watson statistic is low, and there are clear indications of structural breaks in the 1990s.
- In the case of women 25-54, forecast tests detect instability at the end of the sample.
- We focus on 2002 and 2003 by adding dummies for those two years and for all groups. We also include a period dummy for 1997-2003 in the two cases of men and women over 55, in order to check for sudden and persistent changes in the time trends of their participation rates.

Estimation results

Table 1: SUR estimates for the log change in the participation rate 1969-2003

	DEMOGRAPHIC GROUPS					
	15-24		25-54		55 AND OVER	
EXPLANATORY FACTORS	Men	Women	Men	Women	Men	Women
CONSTANT	-0.0134[1]	0.0026	-0.0062[3]	0.0531[3]	-0.0092	-0.0147
GDP GROWTH	0.5218[3]	0.4048[3]	0.1199[3]	0.0821	-0.0422	0.3234[1]
REAL MINIMUM WAGE	-0.1887[3]	-0.2150[3]	-0.0349[3]	-0.1762[3]	-0.1342[2]	0.0723
REAL SA BENEFIT	0.0097	-0.0109	-0.0023	-0.1004[3]	-0.0829	0.0154
UI WAGE SUBSIDY	0.0760[3]	0.0787[3]	0.0049	0.0210	0.0272[1]	-0.0560
TIME TREND	-0.0001	-0.0005	4.6E-05	-0.0017[3]	-0.0004	3.8E-05
DUMMY 1997-2003					0.0281[3]	0.0308[3]
DUMMY 2002	0.0756[2]	0.0250[1]	0.0048[1]	0.0203[3]	0.0666[3]	0.0824[2]
DUMMY 2003	-0.0002	0.0201	0.0026	0.0118[1]	0.0429[3]	0.0309[3]
SUMMARY STATISTICS						
S. E. OF REGRESSION	0.0103	0.0126	0.0024	0.0065	0.0119	0.0218
R^2 STATISTIC	0.7484	0.6465	0.6373	0.8477	0.8102	0.6535
DURBIN WATSON STATISTIC	2.0045	1.9461	2.6597	2.1073	2.6197	3.1058

Legend : The numbers [1] [2] [3] indicate that the zero-coefficient hypothesis is rejected at the 90%, 95% and 99% confidence level respectively.

Main results

- SA benefit is significant only for women 25-54; UI subsidy remains highly significant for people 15-24; minimum wage is highly significant for all groups except women 55 and over.

- Nevertheless, social policy was not an important factor in the changes observed since 1997.

- The participation rate of women 25-54 reached a plateau at the end of the 1990s.

- GDP growth has no impact on the participation rate of older men.

Main Results (cont'd)

- Beginning in 1997, there was a yet unexplained, and persistent, increase of around 3%/year in the time trend of the participation rate of men and women 55 and over. Otherwise, until 2001 much of the gains in participation rates were cyclical.

- All groups have experienced unusual increases in participation in 2002. These increases range from 0,5% for men 25-54 to 8% for young men and for the older groups.

- In 2003, an additional significant increase in participation of 3 to 4% is estimated for the older groups.

Why these shocks since 1997?

- Cohort effects are certainly important and are better documented in the Finance paper.
- Cohort effects may lead to quite sudden reversals in the time behaviour of participation rates of specific groups. Trend variables do not capture these kind of movements adequately – so that a 1997-2003 dummy is needed in our framework.
- However, the unusual 2002-03 increases in participation cannot be attributed to cohort effects, because they reflect simultaneous movements in many different age groups.

The 55-59 and 65-69 age groups experienced simultaneous shocks in participation in 2002-03. This was not the case in 1992-93.

Part-time employment of older workers rose considerably in 2002-2003

- Dion and Laur (2003) point out that part-time employment increased sharply in 2002-2003, particularly among older workers.

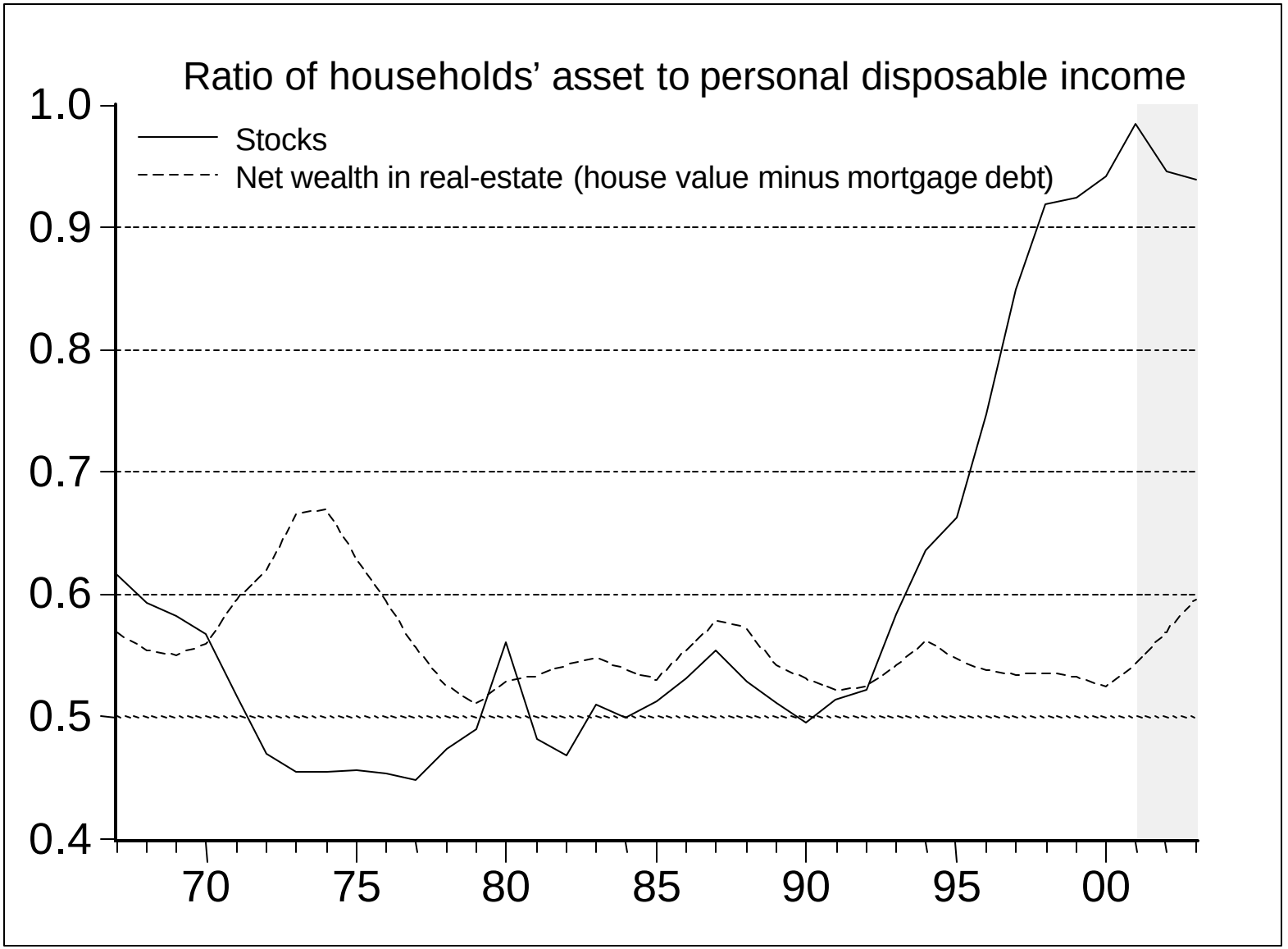
- People may have retired early in the 1990s because stock market gains increased their wealth. The ensuing collapse left many with lower than expected pension prospects. This sent many retired workers back to work.

- However, some aggregate data contradict this view.

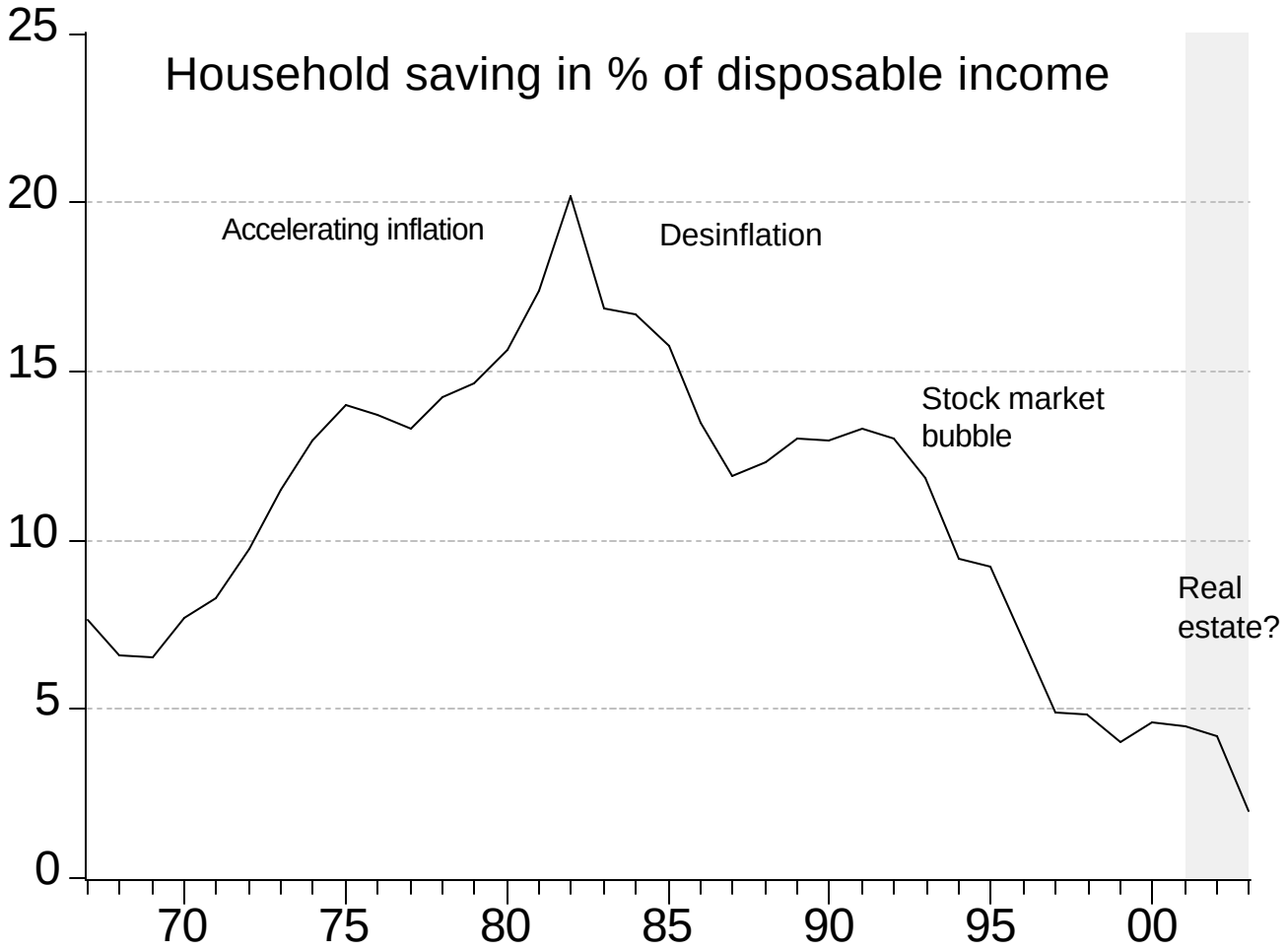
Impact of wealth on consumption and “leisure”

- The impact of wealth on the demand for “leisure” should mirror that on consumption.
- The existing literature shows that housing wealth has an impact on consumption almost three times as large as stock market wealth.
- Housing wealth has also been found to influence retirement behaviour in the UK.
- As for Canada, Pichette and Tremblay (2003) conclude that the marginal propensity to consume real-estate wealth is much larger than that of stock market wealth.

Household wealth in Canada's National Balance Sheet



The personal saving rate fell in 2002-2003. This is consistent with real-estate gains having more than compensated stock market losses.



Do wealth-related regressors improve our model?

- When added to our set of regressors, the change in the ratio of wealth to disposable income never approaches the marginal significance level of 5% in any equation.

- We have also considered the change in the personal saving rate as a regressor (as an indirect measure of the wealth effect on the demand for leisure. This has also proved fruitless.

Retirement decision

- Baker, Gruber and Mulligan (2003) show that income security has quite large effects on retirement decisions in Canada.

- Duchesne (2004) points out that public sector workers accounted for most of the decline in the median retirement age between 1987 and 2002.

- Among industries where the median retirement age fell most sharply are Health and Social Assistance (-4.6 years), Public Administration (-4.2 years), and Teaching (-3.7 years), all of which are mostly in the public sector.

- Early-retirement packages associated with the fight against public-sector deficits contributed to a significant reduction in the participation rate of older workers in the 1990s, particularly those with higher-than-average education.

Table extracted from Duchesne (2004), « Le taux d'approche à la retraite », *L'emploi et le revenu en perspective*, Statistique Canada, No 75-001-XIF, Février 2004, p. 22.

	Taux d'approche de la retraite		Âge médian de retraite	
	1987	2002	1987	2002
	%		Ans	
Branche d'activité	**11,4**	**19,8**	**64,3**	**60,6**
Agriculture	24,7	23,0	64,9	66,0
Foresterie, pêche, extraction minière, pétrole et gaz	13,9	25,7	61,7	59,4
Services publics	15,5	27,5	60,3	58,9
Construction	13,4	14,5	63,2	64,3
Fabrication	13,0	16,4	63,2	61,7
Commerce	8,8	14,7	64,8	62,0
Transport et entreposage	13,5	26,7	62,7	60,3
Finance, assurances, immobilier et location	10,6	20,9	64,4	61,1
Services professionnels, scientifiques et techniques	5,1	19,8	69,1	61,2
Gestion d'entreprises et services administratifs et autres	14,7	12,9	62,7	65,3
Services d'enseignement	14,8	39,3	62,0	57,3
Soins de santé et assistance sociale	9,2	24,7	64,8	60,2
Information, culture et loisirs	7,8	16,0	64,6	60,4
Hébergement et services de restauration	8,6	11,2	61,6	61,3
Autres services	13,8	17,2	65,0	63,8
Administrations publiques	14,7	32,1	62,4	58,2

Source : Enquête sur la population active

Conclusion: What's Our Story?

- Our estimates suggest that between 1997 and 2001, almost all the rise in the participation rates of the 15-24 and 25-54 age groups was cyclical. The participation rates of the older groups was driven mainly by cohort effects. The participation rate of men 55 and over, in particular, shows very little responsiveness to the business cycle.

- In 2002, there was an unusual rise in all participation rates. It was particularly strong for young men and older groups. This coincided with a significant increase in part-time work. Another shock occurred in 2003 in the case of older men and women.

Conclusion (cont'd)

- Wealth effects are not likely to have played a significant role in the recent rise in participation. After 1999 the composition of personal wealth changed in a way that should have suppressed negative effects on participation. Consistently, our attempts to relate the participation rate to measures of personal wealth have been unsuccessful.

- Labour force data indicate that public-sector employees reduced their median retirement age sharply in the 1990s. Given the important impact of income security on the decision to retire, we believe that the early-retirement incentives that were introduced by deficit-fighters in the 1990s contributed significantly to the drop in aggregate participation at the time.