Notes de recherche — Research Notes

Addendum on the Living Standards of Toronto Blue Collar Workers in the 1900-1914 Era

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This research note follows a recent article in Histoire sociale — Social History *on the living conditions of the working class in Toronto during the years 1900-1914. The author offers an alternative measure of shelter costs with specific allowance for home ownership, using a modified expenditure outlay method. Toronto retail prices and real wage change data are also used by the author who concludes that living standards were stagnant and real wage increases were weak.*

Cette note de recherche est la suite d'un échange d'idées entre les professeurs Chambers et Harris dans Histoire sociale — Social History *au sujet des conditions de vie de la classe ouvrière durant les années 1900-1914. L'auteur pésente une nouvelle mesure du coût du logement, tenant compte de l'allocation accordée à la propriété domiciliaire et modifiant la méthode d'équivalences des valeurs locatives. L'auteur utilise aussi le prix de détail à Toronto et des données sur l'évolution des salaires réels. Il conclut que le niveau de vie est resté stagnant et que les augmentations de salaires réel furent faibles.*

Two recent articles in this journal presented new indexes of retail prices and of nominal wage rates in the city of Toronto for the years 1900-1914.[1] These permitted derivation of an index of real wages that indicated little absolute increase, and relatively much less than a similar measure reported in the Rees study of real wages in the United States for the same years.[2] However, Richard Harris has suggested a homeownership boom in Toronto during the same 1900-1914 period.[3] It is also clear that from thirty to forty percent of Toronto working-class families were owner occupiers in these years. Harris infers that if an index of living costs acknowledged a homeownership component the conclusions about relative stagnation in living standards in Toronto might have to be revised.[4] This reference raises again not only the difficulties in interpretation created by explicit inclusion of a homeownership component in a retail price index, but also more importantly the implication that results from an alternative methodology would yield significantly different conclusions.

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1. Edward J. Chambers, "A New Measure of the rental cost of housing in the Toronto market, 1890-1914", *Histoire Sociale — Social History*, XVII, 33 (May 1984): 165-174; "New evidence on the Living Standards of Toronto Blue Collar workers in the pre-1914 era", *Histoire Sociale — Social History*, XVIII, 37 (November 1986): 295-314.
2. C.A. Rees, *Real Wages in Manufacturing 1890-1914* (New York, 1961).
3. Richard Harris, "The Unremarked homeownership boom in Toronto", *Histoire Sociale — Social History*, XVIII, 36 (November 1986): 433-437.
4. *Ibid.*, p. 436.

Histoire sociale — Social History, Vol. XX, N° 40 (novembre-November 1987) : 357-362.

Because of possible misinterpretation of my recent findings, this note offers a second (and alternative) measure of shelter costs with explicit allowance for homeownership.

The previous papers employed a rental equivalence method to measure shelter costs. This method is one in which the owner occupier is treated as his own tenant, i.e., essentially renting a flow of services off his own real property. A shelter index so derived measures rents paid by tenants and treats the results as a proxy for the opportunity rents of owner occupancy. Hence the cost of shelter for tenants and owner occupiers alike is represented by the single market based rental equivalence index. There are three other generally utilized methods of incorporating homeownership into a retail price index. These are:

(1) The purchase method in which the cost of *buying* a house (new or used) is explicitly included;
(2) User cost in which (i) capital gains and losses and (ii) opportunity earnings on housing equity are included in estimating ownership costs;
(3) Outlays for homeownership based upon specified costs that an owner incurs (excluding asset purchase price) in providing his own shelter.

The first two methods also include homeowner maintenance and repairs, insurance, depreciation (on improvements), property taxes, and mortgage interest as cost components while the third, or outlay method, consists exclusively of these items.

Table 1. Indexes of Toronto Homeownership Costs: 1900-1914

Year	Depreciation (1)	Repair & Maintenance 2	Mortgage Interest (3)	Property Tax (4)	Combined Index (5)
1900	100.0	100.0	100.0	100.0	100.0
1901	100.3	106.1	100.0	103.1	102.4
1902	106.8	114.8	100.0	129.4	112.8
1903	110.6	112.3	100.0	125.9	112.2
1904	111.5	111.2	104.3	151.9	119.7
1905	115.7	111.2	104.3	165.8	124.4
1906	120.4	111.9	104.3	171.4	127.0
1907	125.8	115.2	113.0	173.1	131.8
1908	128.0	112.0	113.0	185.5	134.6
1909	125.4	111.2	109.1	170.3	129.0
1910	129.5	130.0	109.1	147.4	129.0
1911	133.8	134.0	109.1	164.6	135.4
1912	139.2	131.2	109.1	174.2	138.4
1913	146.2	132.4	122.7	214.2	153.9
1914	147.6	132.7	127.3	236.5	161.0

Column 1: is the author's own index of residential construction cost (excluding land). Materials are assigned a combined weight of .55 and construction trade labour a weight of .45. Data and weights are available on request.
Column 2: Repair and maintenance costs. These are based on hourly wage rates for painters and glaziers (Inquiry into Cost of Living in Canada, Vol. II, pps 484-89) and prices for window glass, prepared paint, and varnish, Ibid, pps 62-3, and for printed linoleum taken from issues of Eaton's Catalogue. Weights assigned are: labour (.33), glass (.10), paint (.25), varnish (.10), and linoleum (.22).
Column 3: The mortgage interest rate is from Inquiry into the Cost of Living in Canada, Vol. II, p. 721 and Ontario, Sessional Papers 1915, No. 12, pp. 368-373.
Column 4: Is the product of the Toronto mill rate (including a special school levy in 1902) and the author's rent index lagged one year. Mill rate data from Inquiry Into the Cost of Living in Canada, Vol. II, p. 333; rent index as in Col. (1) of Table 2 below.
Column 5: Is an average of Cols. (1) to (4) with each component assigned an equal weight.

The new index of homeownership costs presented in Table 1 results from application of a modified outlay methodology. The core of this method is a definition of cost in terms of those specific "outlays" necessary to owner occupancy in the same sense that rental payments are the condition of tenancy. Included in Table 1 are the following:

(a) depreciation of improvements at replacement cost;
(b) homeowner maintenance and repair;
(c) mortgage interest;
(d) property taxes.

(b), (c) and (d) require cash outlays while (a) is an implicit cost recognizing the limited life of the dwelling unit itself. Further, three of the four costs ((a), (b), and (d)) are common to the entire set of owner occupiers but mortgage interest is an outlay dependent on whether the property is mortgaged or owned outright.

The estimates that follow fail to include insurance premiums but this should not have a great effect on the results simply because in a city like Toronto with high quality fire service, annual premium costs will be quite small relative to any one of the designated items.[5]

Footnotes to Table 1 explain the composition of each component series. Depreciation at replacement cost in Column (1) is proxied by an index of Toronto house construction costs. Column (2) is a series representing homeowner maintenance and repair costs composed of both wages and selected maintenance materials. Column (3) is the mortgage interest rate, and Column (4) is a proxy for property taxes. Column (5) is a composite index of homeownership costs calculated as a simple average of the four series, i.e. each of the four elements in homeowner outlays is assigned equal weight.

Special attention is directed to the property tax measure. This index for any year is the product of two relevant series in index form: (i) that year's mill rate, and (ii) a proxy for the estimated assessed value in the preceding year of a representative six room house. In the period under study the Toronto general mill rate changed very little. Considering real property assessments the *Inquiry into Cost of Living in Canada* states:

> In the case of residential properties, the advances (in assessment values) represent the increased demand for housing accommodation, following upon the growth in population, which, by increased rents, increased the capital value of properties.[6]

This suggests that assessed values were highly correlated with observed market rents. Vineberg states that under 1904 Ontario legislation (an outcome of the Assessment Commission Reports of 1901 and 1902) real property assessments were based upon "actual cash value".[7] City assessment rolls were completed by October 1st of each year and made final (after Court of Revision sittings) by December 15th, which meant that taxes for the given year were set by applying the mill rate to last year's property assessment.[8] Data from

5. For example, a 1931 study of civil service homeowners in the Ottawa area reported that they paid only 2.4 % of gross imputed rents for fire insurance premiums. On this question see Marian Steele, "Estimates of Residential Rents, 1871-1925", (mimeo) October 1977. Further the weight assigned insurance in the past World War II Canadian CPI based upon urban household budget studies is about one-fourth or less of the weights assigned other homeownership cost outlays.

6. Vol. II, p. 928.

7. Solomon Vineberg, *Provincial and Local Taxation in Canada*, (New York 1912), p. 91.

8. Cf. the statement of F. MacKelvan Q.C., in The *Report of the Ontario Assessment Commission: Interim Report and Record of Proceedings*, Ontario Sessional Papers 1901, No. 44, pp. 285-6. This method in cities is contrasted with that in rural areas where assessed values were determined in the Spring and taxes levied in the Fall. See p. 287.

assessment roles are widely used in urban historical research, the assumtion usually being that the rolls are accurate, or if bias exists it is uniformly distributed. Recently, however, Levine after examining actual assessment practices in Montreal between 1870 and 1920 finds some sources of uncertainty in their use, including assessor qualifications, assessment method, consistency in the ratio of assessed to market value, and actual inequities in the assessment process.[9] No similar study has been made of Toronto assessment rolls. An error would be introduced in the time series of property tax payments reported in Table 1 if assessment practices contained year to year inconsistencies in assessed to market value ratios.

Consider now the choice of equal weights for each component by reviewing some relevant evidence from 1909. Recent findings indicate that it was possible to build in 1909 a two story frame dwelling with 22″ × 30″ exterior dimensions in Hamilton for about $1100 inclusive of contractor's fee but exclusive of land and of developers profit margins.[10] Since building trade wage levels in Hamilton and Toronto were quite similar in the period, and since other materials are traded goods, cost of production in Toronto must have been roughly equivalent to that in Hamilton. If we assume a 50 year house life, or depreciation of improvements at 2 % annually, then this replacement cost charge against a representative 6 room house was in 1909 ($1100) × (.02) or $22.

With respect to mortgage interest, the prevailing rate in 1909 was 6.0 %. Data from the U.S. Census for 1910 suggests that perhaps from one quarter to one half of owner occupied dwelling units were mortgaged.[11] Doucet and Weaver report that individuals attempted to avoid mortgaging their property whenever possible.[12] It is not unreasonable to suppose therefore that one-third of owner occupied six-room dwellings were encumbered. To know how large the typical mortgage was for such dwellings we need to know first the appropriate ratio of rent to value. The author's data indicates that in 1909 the average annual rent for a six rooms house in Toronto was $195.[13] Studies by Wickens of American cities with weather comparable to Toronto's as reported by marian Steele found rent to value ratios between .076 and .093.[14] Accordingly in 1909 at a ratio of .09, an average market value of a 6 room house would be (195/(.09) or $2167. If at this time the average mortgage on owner occupied encumbered dwellings was approximately $1100 or one half of market value, then the annual interest payment would be of $66.00 (.06) × ($1100). However, if but one half of owner occupied dwellings were encumbered then annual interest charges per owner occupied dwelling would be $33 (.5) × ($66), and if one quarter were encumbered then the outlay would be $16.50 (.25) × ($66).

If houses had assessed values equal to market values then property taxes in 1910 on a representative six room house at the prevailing 18.5 mill rate would be (.0185) × ($2167), or $40. We should note, however, the following comment in *Inquiry into the Cost of Living in Canada*:

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9. G.J. Levine, "Criticizing the Assessment: Views of the Property Evaluation Process in Montreal 1870-1920 and Their Implications for Historical Geography", *Canadian Geographer*, XXVIII, 3 (1984): 276-84.

10. M. Doucet and J. Weaver, "The North American Shelter Business 1860-1920: A Study of a Canadian Real Estate and Property Management Agency", *Business History Review*, Summer 1984: 252.

11. United States, *Census*, 1920, Vol. II, pp. 1280-88 and *Census*, 1910, Vol. I, p. 1314.

12. Doucet and Weaver, p. 243.

13. Author's data for results reported in "A New Measure of the Rental Cost of Housing in the Toronto Market, 1890-1914". *Histoire Sociale — Social History*, XVII, 34 (May 1984).

14. D.L. Wickens, *Residential Real Estate* (New York, 1914), pp. 35-37 and Marian Steele, "Estimates of Residential Rent, 1871-1925" mimeo, October 1977.

> It should be added that methods of valuation differ, of course, between provinces and different cities. There are differences of methods also of valuing land and improvements. In the East, public opinion is against valuation to the full saleable price....[15]

This statement is supported by testimony in late November 1900 to the Assessment Commission from a representative of The Toronto Ratepayers' Association who remarks that an average city house in Toronto was assessed at $1000.[16] Since the average rent on a Toronto house in 1900 was $10.45 per month, or $125 a year, a capitalization rate of .09 (as used above) would suggest an average market value of $1393, or that assessed values were just under three-quarters of market values.[17] Employing this as a general rule indicates that in 1909 general property taxes on a representative property were perhaps $30.

Finally, early Canadian evidence regarding owners maintenance and repair cost is quite limited. Marian Steele reports that a survey of 473 civil servants in the Ottawa area for the year ending October 1931 found that these expenses amounted to 15.9 % of imputed gross rent.[18] Our concern here is primarily with blue collar homeowners, and it seems reasonable to believe the ratio might be somewhat lower. At 12 %, repair and maintenance expenditures in 1909 would be (.12) × ($195), or $23-24.

In sum, the annual outlay for a six room owner occupied dwelling in 1909 can be estimated as follows:

depreciation at replacement cost	$22
mortgage interest	$17-33
property tax	$30
liability repair and maintenance	$24

In this context assigning equal weight to each of these four items is not unreasonable.

The homeowner shelter index in Column (5) records an increase from 100 to 161.0 over the entire period. The results of this index are combined with the author's rent index into a new overall shelter index as reported in Column (3) in Table 2. In this new measure of shelter, rent is assigned a weight of .65 and homeownership .35. In Column (4) a new retail price index is reported in which the *total weight* assigned shelter remains at .22 (as in my previously reported index) with the weight of rent in the total index at (.65) × (.22) and the weight of homeownership (.35) × (.22). Effectively this means the weight assigned each of the four designated components of homeownership is .01925 or (.25) × (.35) × (.22).

A comparison of columns (1) and (2) in Table 2 serves to emphasize the relative cost advantage of homeownership in this era. Though not directly considered in the data, the benefits of homeownership are reinforced by the prospective nominal and real capital gain. From column (3) and (4) it is seen that the new index yields a price level measure which is lower than one based on rental equivalence. The difference would, of course, be larger if the homeownership ratio of .35 were increased.

Finally consideration can now be given in Table 3 to the effect on real hourly wage rate changes of this alternate methodology. Taken over the entire period real wage per-

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15. Vol. II, p. 930.
16. Cf. the statement of Dr. E.J. Barrick commencing at p. 315 of *The Interim Report and Record of Proceedings*, Sessional Papers 1901, No. 44.
17. Author's rental data for "A New Measure of the Rental Cost of Housing in the Toronto Market, 1890-1914."
18. M. Steele, "Estimates of Residential Rent, 1871-1925", p. 5.

formance is improved by about ¼ of 1 percent annually. By considering the two sub-periods (before and after 1907) it is evident that this benefit is confined to the years through 1907. There is little difference in growth rates after 1907. The conclusion remains that Toronto real wage rate increases in the pre-1914 period are disappointingly weak.

Table 2 **Comparison of Toronto Retail Price Indexes 1900-1914 Incorporating Alternate Method of Measuring Shelter Costs**

Year	Rent Index (1)	Homeowner Index (2)	Retail Price Index with Homeownership Component (3)	Retail Price Index based on rental Equivalence (4)
1900	100.0	100.0	100.0	100.0
1901	114.1	102.4	103.0	103.9
1902	122.2	112.8	109.6	110.3
1903	147.4	112.2	114.8	117.5
1904	160.9	119.7	116.8	120.0
1905	170.7	124.4	119.7	123.3
1906	172.4	127.0	122.4	125.9
1907	184.7	131.8	129.2	133.3
1908	169.6	134.6	128.9	131.6
1909	155.3	129.0	126.5	128.5
1910	168.5	129.0	128.9	131.9
1911	173.5	135.4	128.2	131.1
1912	202.4	138.4	142.5	147.4
1913	223.5	153.9	145.0	150.4
1914	208.7	161.0	145.8	149.5

Column (1) and (4) are from the author's "New Evidence on the Living Standards of Toronto blue collar workers in the pre-1914's era, *Histoire Sociale — Social History*, November 1986, p. 297.
Column (2) is from Table 1.
Column (3) is an index combining the Food, Clothing, Home Furnishing, Fuel and Light, Tobacco and Alcohol series from "New Evidence..." with the rent and homeownership indexes reported in Table 1. Rent is assigned a weight of .143 (.65) (.22) and homeownership a weight of .077 (.35) (.22) in deriving the new composite.

Table 3. **Effect of Alternate Retail Price Index Measures on Real Wage Rate Changes for Selected Periods 1900-1914**

Period	% Change with rental equivalence (1)	% Change with homeownership (2)
1900-1913	0.14	0.43
1900-1914	0.22	0.40
1902-1912	−0.06	0.22
1900-1907	−0.55	−0.10
1902-1906	−0.37	0.15
1907-1913	0.96	1.04
1907-1914	0.99	0.89
1906-1912	0.17	0.26

Column (1) from "New evidence...." *Histoire Sociale — Social History*, p. 302.
Column (2) derived from rates of change in a new measure of the annual real hourly wage where the money wage index from "New evidence....", p. 302 is deflated by Col. (3) in Table 2.