

# *Age, Wealth, and Portfolio Composition: A Quantile Approach*

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# Questions

- Quantile regression used to examine wealth determinants & wealth-age profile
- Bequest or life-cycle saving?
- A life-cycle transition?
- Is variable impact affected by wealth level?

# OUTLINE

- Bequest vs life-cycle saving
- The Data
- LOWESS quantiles
- Quantile Regressions
- Results & Conclusion

# Saving Motivation

- Life cycle saving
- Bequest saving
- Precautionary saving
- Bequest saving – voluntary vs accidental
- Dynan, Skinner, Zeldes (2002)
- Fan (2006)
- Conley & Galenson (1994, 1998)

# The Data

- 7,156 census linked probated decedents for Ontario 1892, 1902
- 16 wealth categories including real estate and financial assets

# Table 1: Aggregate Statistics

	<b>ALL</b>	<b>1892</b>	<b>1902</b>
<b>Age</b>	61.45	61.17	61.72
<b>Wealth(\$)</b>	6871.32	7427.42	6334.46
<b>Real Estate(\$)</b>	3001.71	3468.31	2551.25
<b>Financial Assets(\$)</b>	3042.09	2988.80	3093.53
<b>Male</b>	0.73	0.77	0.70
<b>Urban</b>	0.44	0.42	0.46
<b>Literate</b>	0.92	0.90	0.93
<b>Children</b>	3.08	3.34	2.83
<b>English</b>	0.17	0.19	0.15
<b>Irish</b>	0.18	0.21	0.15
<b>Scottish</b>	0.13	0.14	0.11
<b>USA</b>	0.03	0.03	0.03
<b>Other Birthplace</b>	0.04	0.04	0.04
<b>Canadian born</b>	0.45	0.38	0.51
<b>occ1</b>	0.11	0.11	0.11
<b>occ2f</b>	0.41	0.44	0.38
<b>occ2nf</b>	0.08	0.08	0.08
<b>occ3</b>	0.08	0.09	0.08
<b>occ4</b>	0.02	0.02	0.02
<b>occ5</b>	0.02	0.02	0.02
<b>occ6</b>	0.27	0.24	0.30
<b>Anglican</b>	0.19	0.20	0.18
<b>Roman Catholic</b>	0.11	0.11	0.12
<b>Presbyterian</b>	0.27	0.27	0.27
<b>Baptist</b>	0.05	0.05	0.05
<b>Methodist</b>	0.29	0.29	0.29
<b>Other Religion</b>	0.08	0.08	0.08
<b>Married</b>	0.60	0.61	0.58
<b>Widow</b>	0.14	0.13	0.15
<b>Widower</b>	0.14	0.15	0.13
<b>Single</b>	0.12	0.11	0.13
<b>Northern</b>	0.03	0.02	0.03
<b>Western</b>	0.25	0.26	0.25
<b>Huronian</b>	0.24	0.24	0.24
<b>Eastern</b>	0.26	0.26	0.26
<b>Golden Horseshoe</b>	0.22	0.22	0.21

Figure 1

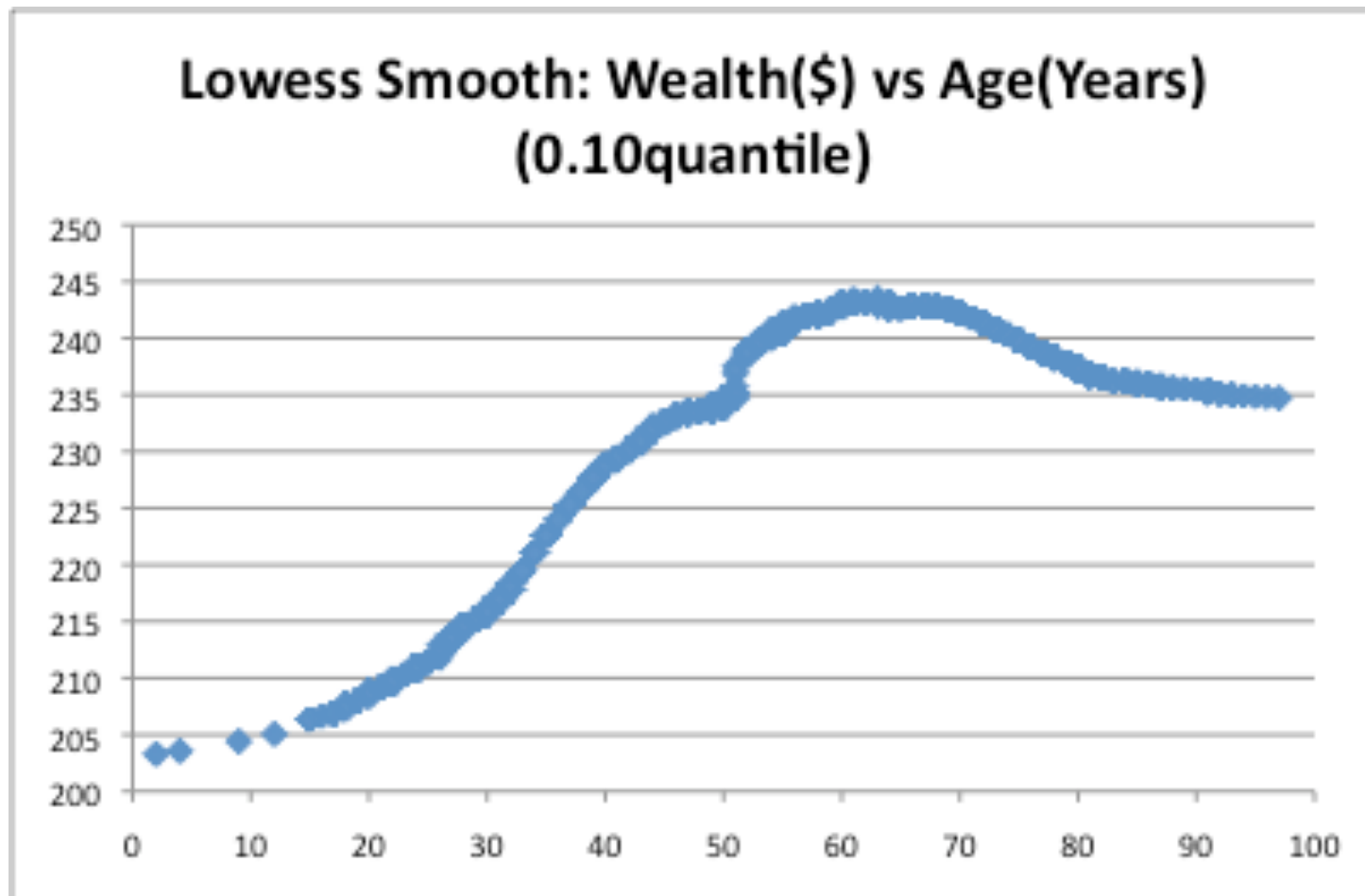


Figure 2

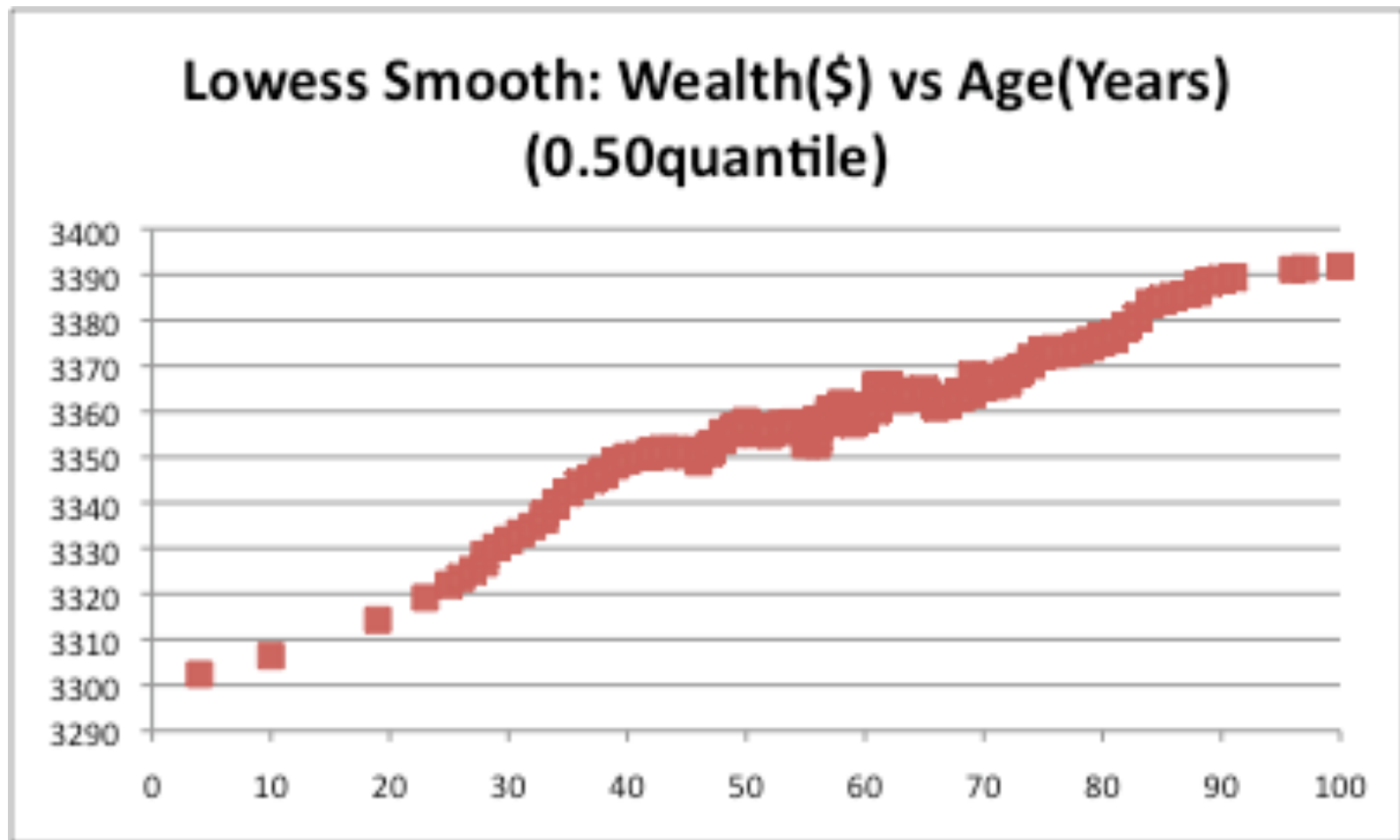
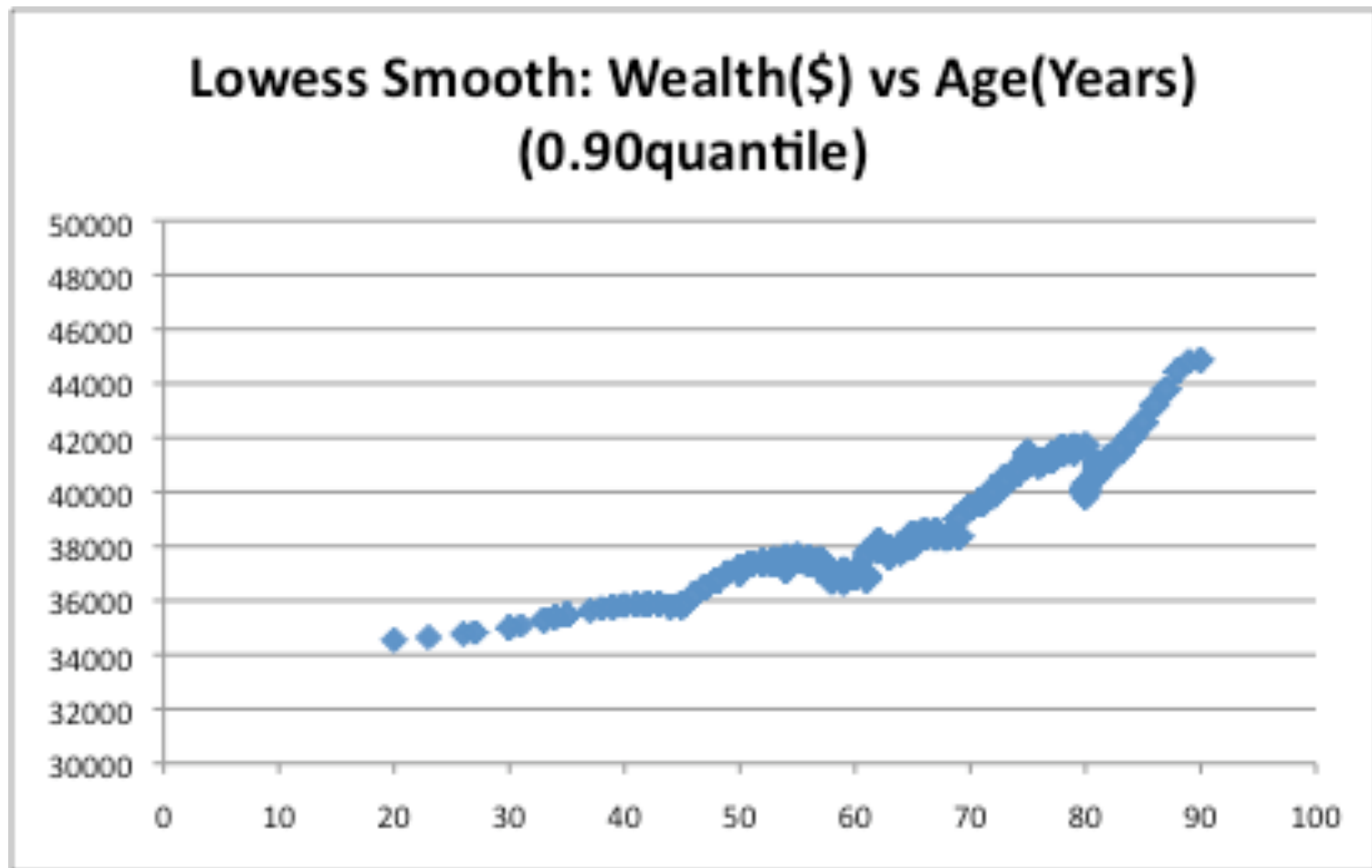




Figure 3



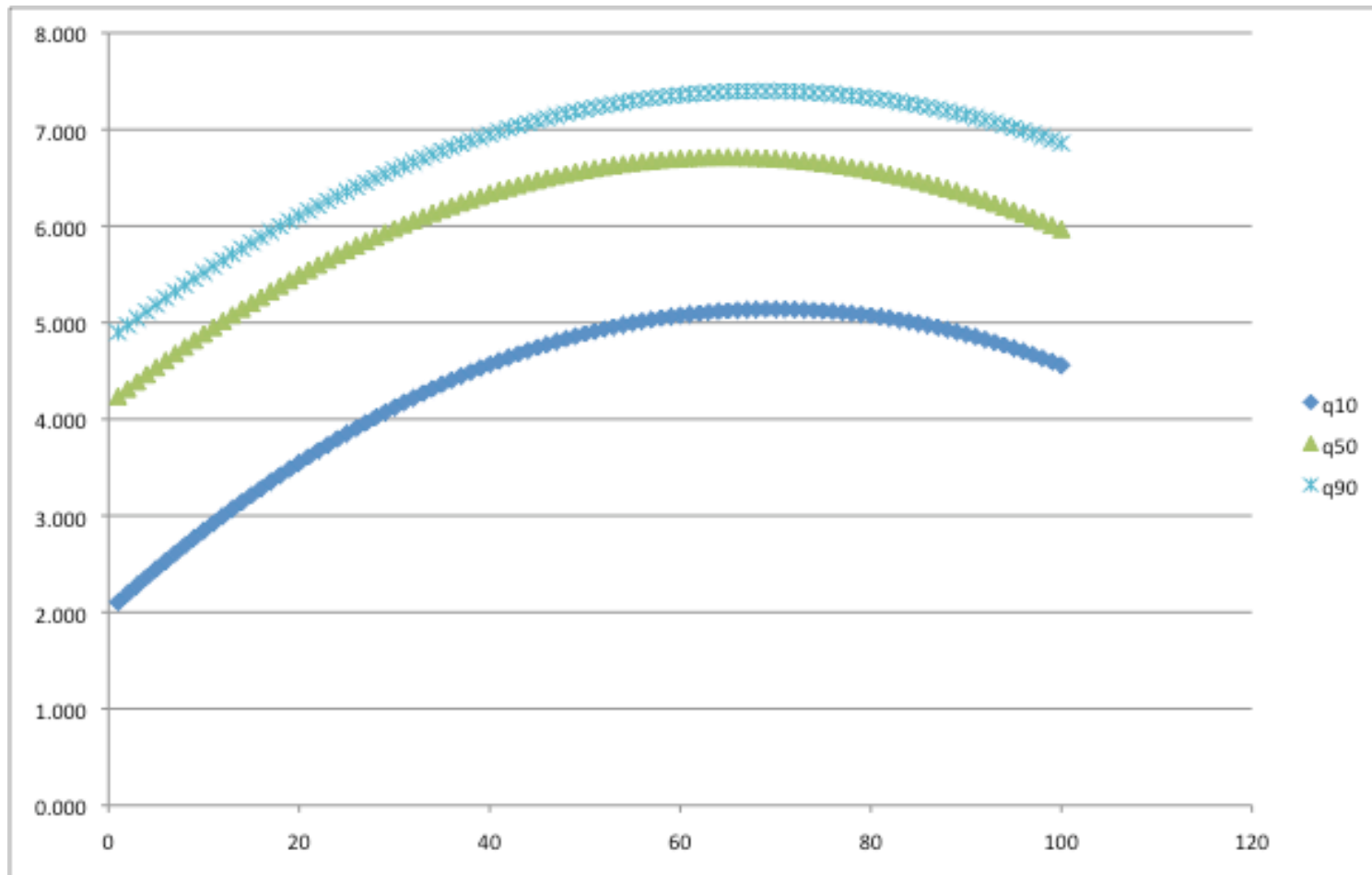
# Quantile Regressions

- Quantile: A value below which a given part of the data must fall. Eg. 0.2 quantile means 20 percent of observations below this value.
- Estimation: STATA 10, OLS, Simultaneous quantile regression
- Model
  - $\text{Ln}W_i = a_0 + a_1A + a_2A^2 + a_3Z_1 + \dots a_nZ_n + E_i$

# Table 3: Quantile Wealth Regressions

	q10	q20	q50	q75	q90	q95
Age	<b>0.0893</b>	<b>0.0824</b>	<b>0.0788</b>	<b>0.0740</b>	<b>0.0750</b>	<b>0.0709</b>
Age Squared	<b>-0.0007</b>	<b>-0.0006</b>	<b>-0.0006</b>	<b>-0.0006</b>	<b>-0.0005</b>	<b>-0.0005</b>
Male	-0.0648	-0.0157	0.0013	0.2320	0.7701	1.2232
English	-0.1206	-0.0718	<b>-0.0924</b>	<b>-0.1061</b>	-0.0959	0.0285
Irish	0.0107	-0.0072	<b>-0.1530</b>	<b>-0.1839</b>	<b>-0.1501</b>	-0.0570
Scottish	0.1352	-0.0019	-0.0264	-0.0707	-0.0427	0.0507
USA	-0.3036	<b>-0.2961</b>	-0.2380	-0.0018	-0.0114	0.2243
Other Birthplace	-0.2512	<b>-0.3389</b>	<b>-0.3352</b>	<b>-0.2992</b>	-0.1820	-0.1841
occ1	<b>1.6806</b>	<b>1.6401</b>	<b>1.7294</b>	<b>2.0090</b>	<b>2.5374</b>	<b>2.3104</b>
occ2f	<b>1.7545</b>	<b>1.5601</b>	<b>1.5276</b>	<b>1.4608</b>	<b>1.5139</b>	<b>1.1880</b>
occ2nf	<b>1.2382</b>	<b>1.1360</b>	<b>1.2753</b>	<b>1.5084</b>	<b>1.7503</b>	<b>1.6645</b>
occ3	<b>0.6966</b>	<b>0.5767</b>	<b>0.6660</b>	<b>0.6702</b>	<b>0.8032</b>	<b>0.7039</b>
occ4	0.2293	0.1151	<b>0.3613</b>	<b>0.4381</b>	<b>0.6608</b>	0.2386
occ6	0.4623	0.2698	0.4464	<b>0.7957</b>	<b>1.5571</b>	<b>1.7321</b>
Roman Catholic	-0.0069	-0.0748	-0.1069	<b>-0.2211</b>	<b>-0.2603</b>	-0.1653
Baptist	0.0930	0.0342	-0.1531	<b>-0.2353</b>	-0.1111	-0.1264
Presbyterian	0.1390	0.0944	0.0134	-0.0315	<b>-0.1649</b>	-0.1733
Methodist	0.0529	0.0031	-0.0550	<b>-0.1949</b>	<b>-0.2306</b>	<b>-0.2181</b>
Other Religion	-0.0405	-0.1151	-0.1173	-0.0975	-0.1880	-0.0317
Literate	<b>0.3114</b>	<b>0.3847</b>	<b>0.3598</b>	<b>0.2943</b>	<b>0.2476</b>	<b>0.4036</b>
Number of Children	<b>0.0517</b>	<b>0.0682</b>	<b>0.0590</b>	<b>0.0525</b>	<b>0.0499</b>	<b>0.0430</b>
Married	0.2174	0.0431	-0.0432	-0.0538	-0.0740	-0.0492
Married but Spouse Deceased	0.0951	-0.0602	<b>-0.1185</b>	-0.0400	-0.1073	-0.0579
Northern	-0.3562	<b>-0.3249</b>	<b>-0.4312</b>	<b>-0.5201</b>	<b>-0.7224</b>	<b>-0.7594</b>
Western	-0.0952	-0.0878	<b>-0.1473</b>	<b>-0.1433</b>	<b>-0.3694</b>	<b>-0.4614</b>
Huronian	-0.0104	-0.0526	<b>-0.2150</b>	<b>-0.2853</b>	<b>-0.5170</b>	<b>-0.5467</b>
Eastern	-0.1682	-0.0979	<b>-0.1787</b>	<b>-0.1477</b>	<b>-0.3336</b>	<b>-0.3918</b>
Urban	0.0335	<b>0.1169</b>	<b>0.2321</b>	<b>0.3698</b>	<b>0.4316</b>	<b>0.5138</b>
Year1902	-0.1071	-0.0683	-0.0320	-0.0344	-0.0554	-0.0753
Constant	<b>2.0161</b>	<b>2.9661</b>	<b>4.1582</b>	<b>4.7361</b>	<b>4.8264</b>	<b>4.8984</b>
R squared	0.134	0.146	0.150	0.138	0.161	0.195

## Wealth-Age Profiles (Source: Table 3)

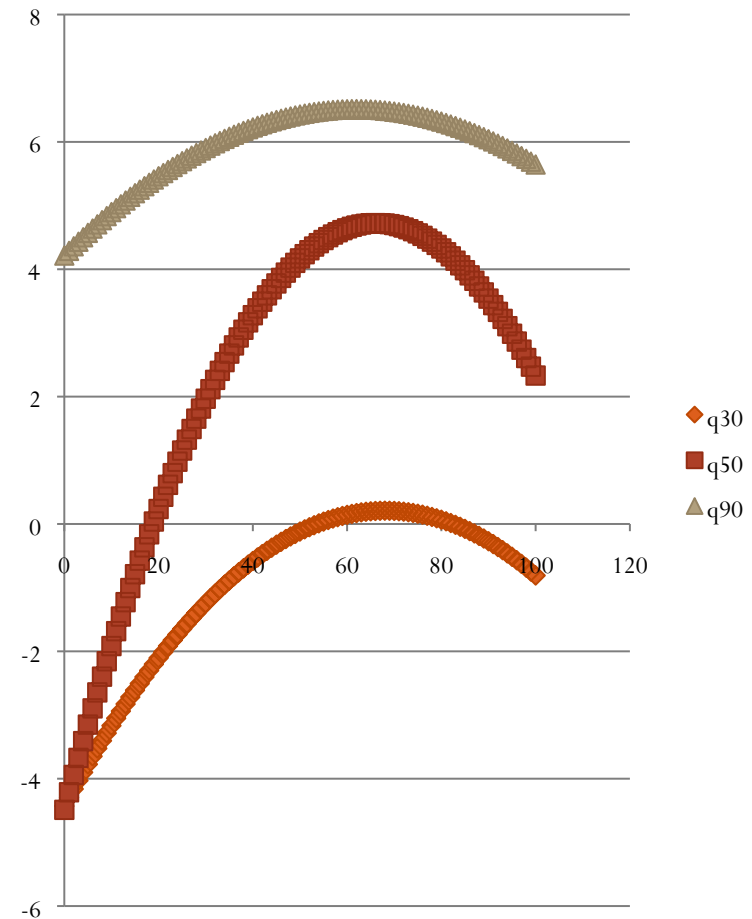
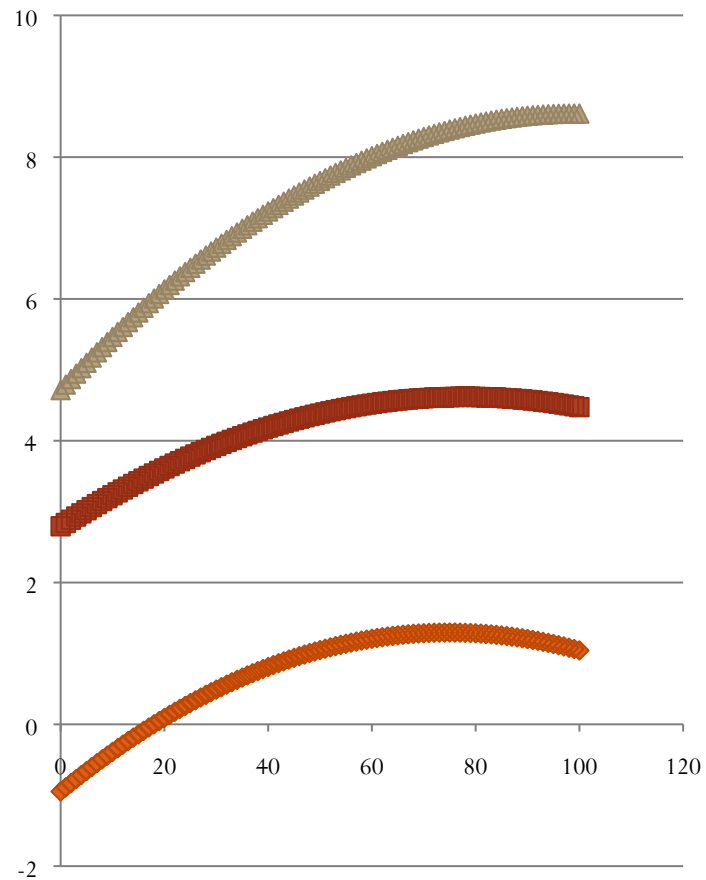


# Table 4: Real Estate & Financial Assets

	Financial Assets			Real Estate		
	q30	q50	q90	q30	q50	q90
Age	<b>0.0599</b>	<b>0.0468</b>	<b>0.0709</b>	<b>0.1362</b>	<b>0.2782</b>	<b>0.0743</b>
Age Squared	<b>-0.0004</b>	<b>-0.0003</b>	<b>-0.0004</b>	<b>-0.0010</b>	<b>-0.0021</b>	<b>-0.0006</b>
Male	-0.1214	-0.2996	0.4651	1.1971	0.4282	0.2019
English	0.0301	0.1283	-0.1454	<b>-0.3171</b>	<b>-0.2171</b>	-0.0719
Irish	<b>-0.3843</b>	<b>-0.2283</b>	<b>-0.3792</b>	0.0539	-0.0809	-0.0596
Scottish	0.1468	0.1555	-0.1029	-0.1095	<b>-0.2392</b>	-0.0981
USA	-0.1562	-0.3832	-0.0067	<b>-0.5094</b>	-0.4781	-0.0068
Other Birthplace	0.3127	<b>0.4850</b>	-0.0601	<b>-0.8987</b>	<b>-0.9288</b>	-0.2342
occ1	<b>4.9667</b>	<b>2.3434</b>	<b>1.9212</b>	<b>3.9879</b>	<b>1.5429</b>	<b>2.2306</b>
occ2f	0.5013	0.4291	<b>0.6299</b>	<b>5.3195</b>	<b>2.1341</b>	<b>2.0175</b>
occ2nf	<b>4.1262</b>	<b>1.9038</b>	<b>1.2147</b>	0.1166	<b>0.9925</b>	<b>1.8861</b>
occ3	<b>2.2418</b>	0.7942	<b>0.3933</b>	<b>2.8317</b>	<b>0.8716</b>	<b>1.0488</b>
occ4	1.2997	0.6724	0.2890	0.9042	-0.0195	<b>0.4663</b>
occ6	<b>2.5885</b>	0.5050	0.7790	0.2269	0.1485	<b>1.2811</b>
Roman Catholic	<b>-0.3960</b>	<b>-0.4513</b>	<b>-0.3816</b>	0.0486	0.1101	<b>-0.1461</b>
Baptist	-0.3685	-0.1013	<b>-0.5201</b>	0.0548	-0.0443	-0.0696
Presbyterian	0.2387	0.2082	-0.0678	-0.0723	-0.0192	<b>-0.1549</b>
Methodist	-0.0169	-0.0179	-0.1583	-0.1960	-0.1586	<b>-0.1838</b>
Other Religion	0.4020	0.0454	0.0135	-0.0616	<b>-0.2310</b>	-0.2285
Literate	<b>0.4466</b>	<b>0.8930</b>	<b>0.3999</b>	0.2457	<b>0.3595</b>	<b>0.3056</b>
Number of Children	-0.0484	-0.0173	0.0152	<b>0.1004</b>	<b>0.0854</b>	<b>0.0577</b>
Married	<b>-1.3479</b>	<b>-0.7530</b>	<b>-0.3680</b>	<b>0.6942</b>	<b>1.1571</b>	<b>0.1607</b>
Married but Spouse Deceased	<b>-0.7946</b>	<b>-0.4360</b>	<b>-0.2261</b>	0.0791	<b>1.0327</b>	0.0951
Northern	-0.1525	0.0013	-0.1944	<b>-0.7806</b>	<b>-1.0040</b>	<b>-0.7896</b>
Western	-0.1874	<b>-0.2116</b>	<b>-0.3086</b>	-0.0043	<b>-0.2278</b>	<b>-0.2599</b>
Huronia	-0.2358	-0.0387	<b>-0.2521</b>	<b>-0.2499</b>	<b>-0.4846</b>	<b>-0.4416</b>
Eastern	0.1172	0.1441	-0.1399	<b>-0.3133</b>	<b>-0.4336</b>	<b>-0.2783</b>
Urban	<b>1.3236</b>	<b>0.7490</b>	<b>0.6419</b>	-0.0423	<b>0.2431</b>	<b>0.3009</b>
Year1902	<b>0.6539</b>	<b>0.3272</b>	0.0270	-0.1640	<b>-0.1776</b>	-0.1086
Constant	-0.9475	<b>2.7937</b>	4.7141	<b>-4.4291</b>	<b>-4.4892</b>	<b>4.2151</b>
R squared	0.12	0.06	0.08	0.24	0.12	0.09

# Financial & Real Estate – Age Profiles

(Source: Table 4)



# Summary

- Statistically significant wealth-age profiles but low rate of decline – more consistent with bequest motive or life-cycle with substantial uncertainty.
- Life-cycle transition process still early.
- Tendency to “hump-shaped profile” greater at lower wealth levels
- Religious affiliation & birthplace matter more at higher wealth levels