

Pensions and Children of Civil War Veterans*

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1 Introduction

It is arguably a frustrating time for young participants in labor market nowadays. The continuous increase in human longevity over the past several centuries together with tremendous improvement in health care and sanitation have significantly affected the behavior of older workers on the issue of retirement and pension. On the one hand, insufficient savings and pensions would force them to work longer in order to generate enough income to cover health care expenditure, the price attached to greater life span. On the other hand, excessive pension would result in public finance crisis if there is not enough young workers in the market to pay for the cost of pension, a fact evident in many developed countries experiencing low birth rates.

To the young workers, this situation seems like a loss-loss one. Either they will be faced with tight job market with little opening positions and small room for promotion if a large fraction of old workers refuse to retire, or they will be lucky to take over the job from retired workers, but will end up having a large portion of their income redistributed away as social security tax to finance pension for the retirees.

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In a larger perspective, ones could also argue about the static nature of labor market with little entry and exit of participants. Although a large portion of the market consist of experienced workers, resistance to innovative approaches and slow rate of adoption of new technology would be more pervasive. Whether this leads to inefficient division of labor is an interesting question, the answer of which will played an important role in public policy debates of this era.

In the examination of these questions, economists, at the outset, are most likely the first to be labeled with the stigma of underanalyzing many non-market factors such as social rigidity, work culture and moral value. This is right to some extent. In a society that respect the wealth of experiences accumulated by the old, nobody probably felt frustrated by this situation. However, the answer ultimately depends on how the question is posted. If the scope of the analysis is enlarged to include not merely the benefits of old-age pension to the pensioners, but also the indirect benefits to the children living with the pensioners through intrahousehold cash transfer, perhaps it will not be surprising in the end to find that market factor alone can also lead to an equilibrium intergenerational labor market that is not as devastating to the young as it originally appears.

Literature

In order to address intrahousehold transfer, the traditional method of economic analysis need to be extended to study the total effects of pension income received by retirees, some of which were given to the young workers living in the same household as cash transfer, on labor market behavior of the young workers. Although such a transfer may not be large enough to restore the income of young workers to the level before social security tax, it can be sufficient to induce behavioral changes, moving the market in the direction of pre-intervention outcomes, and hence alleviating the burden of the young workers.

Developments along this line in theoretical economic modeling have already existed in the literature. Becker (1981) has introduced a model of intra-household resource allocation based on the concept of income pooling. Under this model, income of every household member are pooled together and allocated to each member by maximizing a household utility function, yielding the efficient

amount of transfer from parents to children.

Later development has subjected the income pooling hypothesis to criticism due to its strong implication that the impact of income contributed by father and mother on household consumption is the same. This implication has not been supported by many empirical analyses. For example, Thomas (1990) and Schultz (1990) have argued that there are differences in the household expenditure pattern paid for by contribution of each parent. These findings have motivated the collective model of household behavior which is largely divided into the game theoretic approach (Manser and Brown 1980, McElroy and Horney 1981, McElroy 1990), and an extension of the neoclassical approach with the assumption of Pareto efficiency of household allocations (Chiappori 1992, Bourguignon and Chiappori 1992, Browning and Chiappori 1998).

On the empirical front, the study of the impact of parental transfer on children behavior normally requires data from household records. Unfortunately, it is becoming difficult to obtain data needed to detect substantial impact in developed countries because of the increasing proportion of single families, combined with the lower birth rates and the lower age at which children move out of their parents' household. Currie (1994) and Mayer (1997), for instance, has shown that there is no impact of intrahousehold cash transfer on children in the US.

Other researches have resorted to analyze household data from developing countries, where ample data from extended family exist. There are a number of such analyses using the data from South African old age pension program. Case (2004) has reported that pension improves health-status of all members of the households that pool income. Duflo (2003) has discovered that pension received by women helps to improve their daughter health, as measured by weight and height, and argued that large effect is not surprising in developing countries due to credit constraint. Bertrand, Mullainathan, and Miller (2003) has found a reduction in the labor force participation of prime-age men. However, the magnitude of the impact depends on family size, education and power within the family.

Findings from other developing countries include Carvalho (2000), in particular, who has discovered that the reform of the Brazilian social security benefits that exogenously increase old-age

benefits of rural workers helps to increase school enrollment of children, especially for girls, and decrease labor force participation, especially for boys. Cox and Jimenez (1992) has also shown that without the social security program in Peru, private transfer from the young to the old would be 20 percent higher. This result is perhaps weaker compared to most studies which suggest that not only does the pension reduce private transfer from the young to the old but also reverse the transfer to the young to the extent that it alters their behavior significantly.

Data and Method

As an alternative approach to examine this issue, the vast longitudinal data of the Union Army veterans of the American Civil War provide an excellent source of data for the analysis of intra-household interactions within historical American families. In fact, this data is a good place to start because previous researches using this data has found that federal pension has strongly influenced the retirement behavior of the veterans. Analyses by Costa (1998, 1995, 1993) based on a sample of Union veterans has shown that the elasticity of the veterans' retirement with respect to pension is 0.47 in 1910, which is substantially larger than estimates based on contemporary data such as the social security program. This result is subsequently reaffirmed by Kanjanapipatkul (2003) in a study based on an expanded sample of the Union Army veterans.

The natural next step is to extend this line of research from the analysis of the impact of federal pensions granted to Union Army veterans on their retirement decisions to the impacts on their children. The primary aim of this paper is to study two main behavioral variable available in the 1910 Census, namely labor force participation and school attendance in order to determine the extent of the impact of the veteran's pension income on children residing within their household. The paper will also examine variations of the effect by gender, the timing of the receipt of pension, and other characteristics of the households.

The Union Army data were collected from the pension records of the veterans together with their medical and military services records deposited at the National Archive in Washington D.C. Under the commission of the Early Indicator Project, these data were computerized and linked to

the federal Census. When merged together, it is possible to construct a sample of households with detailed information on the amount of pension income received by the veterans, the date of the receipt, their retirement status, labor force participation and education status of their children as well as other household characteristics.

This constructed sample consists of all household members of Union veterans who are eligible for federal pension. The composition of this sample is therefore determined by the eligibility criteria set by the Pension Commission. Originally, the pension is granted based on proof of disability related to the military services. However, the criteria had become more generous overtime. It has eventually become akin to old-age pension program with more than 90 percent of veterans receiving the pension in 1910. This inclusiveness has made the sample representative of the Northern white population.

In what follows, the main method of the analysis for this sample is to identify the behavioral effects of pension income through logistic estimation procedure. The dependent variables are labor force participation of veterans' children and their school attendance. The main parameter of interest is the differences in the probability of children behavior, as measured by these variables, among those who live within the household of veterans receiving various amount of pension income.

Eight measures of pension are employed in order to determine the robustness of estimates and to determine the influence of the timing of the receipt of pension income on children behavior. These measures include inflation-adjusted measures, lifetime measures, annual average measures as well as the monthly pension income received in 1910. Kanjanapitakul (2003) provides details on how each measure is constructed. The study has also shown that pension income exerts stronger influences on veteran's behavior in 1910. Therefore, this study will focus mainly in 1910 in order to explore effects of pension on children sample at the time when its influence is known to be strong for veterans sample.

This study will not attempt to explore the differential behavioral effect of children based on whether the pension beneficiaries are male or female. Not only was the pension income granted to only male veterans, but there was also a great deal of missing data on female income in the

Census, which is likely due to their lower rate of participation in labor market in the early part of the twentieth century. Nevertheless, this is an interesting and promising area of study. Several studies, particularly Case and Deaton (1998) and Dufló (2003), have already detected some evidences suggesting this phenomenon.

Finally, it is also possible to use the comparison between the behavior of Union and Confederate households from the Census data to identify the effect of treatment on the treated. However, this topic will be left for future researches.

2 Effects on Labor Force Participation

Table 1 reports summary statistics of labor force participation of children of veterans. In the sample of 3238 sons and daughters, 1132 (34.38%) of them are not in the labor market. When the sample is divided by gender, only 11.68% of sons are not in the market, while 57.70% of daughters are not. The low participation rate of female is not unexpected from the labor market data of 1910.

Summary statistics of independent variables in the logistic regressions are reported in Tables 2 and 3 along with the results of the regressions. These independent variables include veterans' pension income, children age, gender, marital status, and other veterans characteristics such as their body mass index.

Regressions are conducted with the labor force non-participation as dependent variable. This variable equals to 1 if the children do not participate in the labor force in 1910, and 0 otherwise. It is constructed from the recorded occupation of the children in the 1910 census. Other census variables such as the number of weeks employed in 1910 and the employment status as of April 15, 1910 are not employed because they contain a large number of missing value.

Interaction terms between pension income and characteristics of veterans are included in some regressions. Samples of sons, daughters, and the full sample are analyzed separately. In addition, the analysis is conducted for a subsample of unmarried children as well. Eight measures of pension

income are used in the analysis. The estimation produces a total of 96 regressions. However, the table only shows the results from regression with monthly pension income received in 1910.

Pension Effect

In general, the estimates suggest significant effects of the veteran's pension income on the propensity of sons of veterans to stay out of labor market. In the full sample without interaction terms, three coefficient estimates of pension income are positive and statistically significant. Consequently, sons' non-participation in the labor force appears to increase with the veterans' pension income. Nevertheless, the effect in the sample of daughters is not observed. Hence, the estimates only suggest that the pension income is related to the behavior of their sons. This asymmetry could result from the low rate of female participation in labor market in 1910.

Despite their statistical significance, the magnitude of the significant coefficient estimates of pension income is not large. The increased probability of sons not working varies between 0.0001-0.0002 for a dollar increase in monthly pension income of their fathers. When evaluated at the mean pension income, this is equivalent to a reduction in labor force participation rate by 1.85-3.86%. This estimate is smaller than the estimated effect on veterans themselves, which is about 6-14% (Kanjapipatkul 2003). In addition, only regressions using monthly pension income in 1910, average monthly nominal pension income, and average monthly real pension income produce significant coefficient estimates. This contrasts with the analysis of the effect on veterans themselves in which all 8 measures of pension income produce significant coefficient estimates.

One plausible explanation of this divergence is that the timing of the receipt of pension also plays an important role in children behavior. The three measures which are significant in children regressions are the approximation of monthly pension income received in 1910, while insignificant measures approximate pension income received in a longer time span such as measure for 1900-1910, measure prior to 1910, and life-time measure. Therefore, the behavioral response of children seems to be limited to pension income received near 1910. This result provides some evidence that pension affects children behavior in the short-run near the point of data collection. In the longer run, the

change in the composition of household, particularly when the elder brothers and sisters start to move out, would cause this factor to cease to have any effect. In contrast, the veterans' behavior is influenced by the annuity feature of the stream of pension income that they received throughout their lives.

Health Effect

The regressions incorporate the effect of veterans' health in order to control for the possibility that children of sick veterans stay outside of the labor market to take care of their parents. This is implemented primarily by including as independent variables in the regressions veterans' body mass index (BMI) and the number of years veterans lived after 1910.

In the sample of sons, the estimates suggest significant effect of veterans' BMI. The linear terms are negative, while the quadratic terms are positive. This suggests a U-shaped pattern of non-participation with respect to the veterans' BMI. The BMI level with maximum participation occurs at 12-13. The further the BMI departs from this level, the more likely that the son will not work.

Veterans' health is also related to daughters behavior, although a different health measure captures this effect. The coefficient estimates of the number of years veterans lived after 1910 is negative and statistically significant. This result implies that daughters of veterans who lived longer, and hence healthier, are more likely to work.

Furthermore, recent studies sometimes argued that marital status is related to health. To study this possibility, the regressions include dummy if unmarried veterans and dummy if widowed veterans. Both estimates turn out to be positive and significant for daughters, suggesting that daughters of unmarried and widowed veterans are less likely to work. This result could stem from the need to care for their father.

Effect of Wealth, Age and Other Factors

The variables available in the Census data allow only type of residence to approximate the effect of wealth. Estimates of dummy for veterans having urban residence and dummy for veterans renting residence are negative and statistically significant in all regressions. Similarly, the estimates

for dummy if the veterans' house is mortgaged is negative, though this effect is significant for the sample of daughters. In short, children of unwealthy veterans who rent a place, or own a house not free of mortgage, in an urban area tend to work more.

Age of children is strongly significant in all regressions. The estimates for linear terms are negative, but the quadratic terms are positive. This suggests that children's labor force participation increases with age at the beginning, but decreases after a certain age is reached. This peak age occurs at approximately 47 years of age for sons and 31 years of age for daughter.

Coefficient estimates of dummy indicating unmarried children are positive for sons but negative for daughters. The magnitude of the effect is, however, much larger for daughters. Unmarried daughters are much more likely to work compared to married daughters, while married sons are more likely to work compared unmarried sons. This provides further evidence of the asymmetry between male-female behavior in the labor market at the time. Finally, the estimates of dummy for veterans living in non-farm household are positive for sons, but negative for daughters. This might reflect the nature of farming that requires greater proportion of males to females.

Unmarried Sample

Analysis on the unmarried sample were conducted in parallel to the full sample analysis. The estimation results are not reported because the estimates do not differ substantially from regressions on the sample of all children. The effect of pension income remains statistically significant in this sample. However, significant estimates of pension income was detected only for monthly pension income received in 1910. The magnitude of the effect is 0.0002 which is exactly the same as results from the full sample. This is not unexpected since unmarried children account for 84 percent of the total sample.

Estimates for other variables are consistent with the full sample in both the statistical significance and the direction. On top of this pattern, the magnitude of many significant estimates appears to be larger in the unmarried samples. This characteristic is observed in particular for coefficient estimates for age of children, veterans' BMI, the number of years veterans lived after 1910, dummy if urban

residence, dummy if rented house, and dummy if non-farm household, and dummy if unmarried veterans. These findings suggest that the labor market behavior of unmarried children interacts more intensively with veterans' health, and household wealth as measured by the characteristics of household residence.

Another difference between results from the full and unmarried samples is the significant and negative estimates of the dummy indicating that the veterans are retired in the sample of unmarried daughters. Unmarried daughters are more likely to work if they are living with a retired parents. This factor is probably one of the underlying factor leading to the observed opposite signs between sons and daughters in the full sample estimates of the dummy variable indicating unmarried children.

Effect of Interaction Terms

Table 3 presents the coefficient estimates for the logistic regressions with interaction terms between monthly pension income in 1910 and other variables. Regressions with interaction terms calculated from other measures of pensions are not shown because they produce similar results. In all regressions, the pension variable becomes insignificant whether or not the sample is restricted to unmarried children. This results from the collinearity between the interaction terms and the pension measures. However, several interaction terms are statistically significant, suggesting that pension income is still an important confounding variable.

Interaction terms which are significant in more than two regressions include terms with respect to dummy if retired veterans and dummy if non-farm household for the daughter samples. For the son samples, they include BMI and dummy if foreign born. Interaction term between pension and dummy if urban residence is significant in both samples. The reaction toward pension income of children who lived in urban area and non-farm household are larger than average, while the reaction is smaller for those who live with retired and foreign-born veterans. Nevertheless, the magnitude of the estimated slopes for these significant interaction terms is not large, which partly results from the large mean values of pension income.

3 Effects on School Attendance

Turning now to the effect of pension income on education of Union veterans' children. Table 1 reports summary statistics of their school attendance rate. Approximately 20 percent of both sons and daughters are not attending school, which is fundamentally different from the gender asymmetry in the participation rate found in labor market.

Results of the logistic regressions and summary statistics of independent variables are reported in Table 4 and 5. A total of 96 regressions have been implemented in a similar procedure with the previous section. Only regression with monthly pension income received in 1910 is shown for consistency in the comparison with the result on labor force participation. The dependent variable, school attendance, was obtained from the 1910 Census variable indicating school attendance since September 1, 1909. Its value is set to 1 if the children do not go to school, and 0 otherwise.

Pension Effect

The logistic regressions suggest that pension income increases the chance of school attendance. Coefficient estimates of seven measures of pension income are statistically significant and positive for the sample of daughters of veterans. However, none are significant for the sample of sons, suggesting that school attendance of daughters is related to the pension income of their father, while the school attendance of sons is not.

Similar to the results in the previous section, the magnitude of the effect on school attendance is relatively small. Coefficient estimates of average monthly nominal pension income, average monthly real pension income, and monthly pension income suggest that the propensity of daughters attending school increase by about 0.0001 for an increase in one dollar of pension. Other measures suggest an increase of smaller than 0.0001. The implied increase in school attendance is 1.88-2.24% at the mean value of pension.

It is interesting to note that these three measures of pension income which capture the largest effect on school attendance are the same three measures in regressions for sons' labor force partici-

pation which produce statistical significance. Since they are measures of pension income near 1910, this result further supports the contention in the previous section that pension income of veterans affect behavior of their children in the short-run. The veterans may have received generous pension throughout their life, but only pension received near the time when the behavior of children is observed exerted the most influences.

Health Effect

Veterans' health plays an important role in children education as well. Like the result from the previous section, health effect is captured differently in the sample of sons and daughters. For the sample of sons, coefficient estimates for veterans' BMI are significant and negative in the linear term, but positive in the quadratic term, suggesting a U-shaped relations between schooling and BMI. The minimal point on the U-shaped relations occurs at approximately 13-14. For the sample of daughters, the estimates for the number of years veterans lived after 1910 are negative and significant, while BMI are not significant predictors.

Generally speaking, these findings suggest that the propensity of children of unhealthy veterans to attending school is higher on average. This attendance pattern is in the opposite direction to the pattern of labor force participation. This contrast introduces the concept of a substitution between school attendance and labor force participation. In particular, results from the previous section suggest that daughters of veterans who have a longer life span tended to work more, while results in this section suggest that they are less likely to attend school. For sons, the further their father's BMI departs from 12-14, the more likely they will not work and attend school.

Effect of Wealth, Age and Other Factors

The dummy for renting residence is significant and negative in the sample of sons. This finding provides additional support for the wealth effect highlighted in the previous section. Other significant coefficient estimates include dummy if the veterans are head of household and dummy if the veterans are foreign-born. Taking these findings together, the estimates imply that the probability of school attendance of children declines if their fathers are head of household, foreign-born and they lived in

rented place.

Age of children are strongly and consistently significant in all regressions for both sons and daughters. The linear terms are negative and the quadratic terms are positive. The minimal point on the U-shaped relations between schooling and age occurs approximately at the age of 33. For school-aged children, this estimation suggests a decline in the likelihood of school attendance with respect to age.

Unmarried Sample

Analysis for the samples of unmarried children were implemented with respect to all measures of pension income, but the results are not reported here due to their similarity with the full sample. In short, all eight measures of pension income are statistically significant, and the magnitude of the slopes is approximately the same with estimates from the full sample. Various significant estimates in the full sample not only remain significant, but their slopes also become larger. The larger slope estimates suggest that unmarried children are more sensitive to health and socio-economic variables of their fathers.

For the sample of unmarried daughters, the dummy if rented house and the dummy if urban residence are negatively significant. These results are in the same direction with the estimates for sons in the full sample. When interpreted together with the findings on labor force participation, they provide further evidence supporting the substitution between children schooling and labor force participation. Children of household which lived in rented or mortgaged place in an urban area, presumably unwealthy household, are more likely to work and less likely to go to school, and vice versa.

Other notable significant estimates include, for the sample of daughters, dummy if veterans are head and the number of years veterans lived after 1910. For the sample of sons, they include dummy if rented house and veterans' BMI in linear and quadratic terms. Age of children in both samples not only remains significant in linear as well as quadratic terms but also produces larger slope.

Effect of Interaction Terms

Tables 5 presents coefficient estimates from regressions with interaction terms computed from monthly pension income received in 1910. Most estimates of interaction terms are not large, but significant estimates occur in all regressions. The smallness of the estimates partly results from the large mean value of the interaction variables. The degree of collinearity among pension and interaction variables is also substantial, and likely reduces the number of significant estimates of interaction terms. In some regressions, the maximum likelihood estimation do not converge. These regressions are not accounted for in the analysis.

Interaction terms which are statistically significant more than twice include those with respect to the number of years veterans lived after 1910, veterans' BMI, dummy if widowed veterans, dummy if rented house, dummy if urban residence, dummy if single and dummy if unmarried veterans. Of all these statistically significant variables, only the coefficient estimate for urban residence is negative. This implies that the increased propensity to attend school in response to pension income is more profound among unmarried children of widowed or unmarried veterans living in a rented house. However, the response is smaller than average for those who lived in urban area.

Furthermore, interactions between pension and health are consistently significant. Children of veterans who lived longer reacted less to pension income. The interaction between BMI and pension produces the opposite effect by gender. For sons, the interaction is negative with linear terms, and positive with quadratic terms, and vice versa for daughters. Hence, sons' reaction toward their fathers BMI are stronger than daughter. On the contrary, the effect of veterans' health on daughter's behavior is consistently captured via the number of years veterans lived, the interaction term of which is nevertheless not significant.

4 Conclusion

This paper has demonstrated that pension income of Union Army veterans has significant effect on their children behavior. Sons' participation rate in labor market declines by 1.85-3.86%, while daughters' school attend increases 1.88-2.24%. The effect is nevertheless smaller than the direct effect on veterans' labor force participation. The timing of pension income also exerts influence on behavior. Pension income received near the time when the behavior of children is observed has greater influence on their behavior. In contrast, the effect on veterans' behavior is affected by pension income received throughout their life.

The differences in the effect of pension income on sons and daughters may partly be related to the low labor force participation of women in 1910. However, this is unlikely to be the only underlying factor. The persistent differences could also suggest the substitution between labor force and education of children. Children living within the household of veterans earning a large amount of pension are more likely to attend school instead of participating in labor force. Health status of the veterans could also play a role. Children living with healthy veterans are more likely to work than attending school. This finding could reflect the need to stay close to home to care for their fathers.

These results demonstrate the complex interaction among household members of the veterans. Apparently, pension income not only benefits the veterans as intended. The proceed also finds its way back into the hand of their children. Although this is not unexpected in a pension system as generous as the federal civil war pension, the findings serve to remind policy makers how complicated it is to create a welfare system or a pension scheme that achieve precalculated objectives. Fully accounting for the transfer of the extra income through all the channels of intrahousehold resource allocation is not simple. A dollar taken away from one member in order to compensate for another may be recompensated to the former, hence nullifying the original public good. Further research are called for in order to provide a comprehensive and indept foundation for such policies. Without these

researches, perhaps good public policies still need to rely on laissez faire economic growth, through its effect on health and income stimulation, as a mechanism that will bring about higher education and prolong the age at which children enter labor market.

Table 1: Labor Force Participation and School Attendance of Children of Veterans by Gender

Gender	Total	Work/Attend	Not Work/Attend	Percent
Labor Force Participation				
Sons	1669	1474	195	11.68
Daughters	1624	687	937	57.70
Both	3238	2161	1132	34.38
School Attendance				
Sons	1940	1557	383	19.74
Daughters	1940	1538	402	20.72
Both	3880	3095	785	20.23

Table 2: Coefficient Estimates of Labor Force Non-Participation of Children of Veterans with Monthly Pension Income in 1910 as Independent Variable

Variables	Sons			Daughters			Sons and Daughters		
	Means	Estimates	Slope	Means	Estimates	Slope	Means	Estimates	Slope
Intercept	.	1.9442†	.	.	7.0424*	.	.	3.3851*	.
Monthly Pension Income in 1910	185.15	0.0017‡	0.0001	189.04	0.0000	0.0000	187.07	0.0006	0.0001
Age	26.89	-0.2991*	-0.0185	27.93	-0.3072*	-0.0756	27.40	-0.2738*	-0.0522
Age Squared	790.27	0.0032*	0.0002	849.51	0.0049*	0.0012	819.49	0.0038*	0.0008
Dummy if non-farm missing	0.10	-0.5154	-0.0305	0.09	-0.8547	-0.2104	0.09	-0.7274	-0.1276
Dummy if female	0.00	.	.	1.00	.	.	0.49	2.5599*	0.4907
Dummy if single	0.86	1.1014*	0.0568	0.82	-1.0266*	-0.2229	0.84	-0.5660*	-0.1234
Veterans' BMI in 1910	18.63	-0.0448†	-0.0031	18.45	-0.0086	-0.0021	18.54	-0.0200	-0.0040
Veterans' BMI squared	436.54	0.0018†	0.0001	431.49	0.0003	0.0001	434.05	0.0008	0.0002
Dummy if foreign-born veterans	0.17	0.0206	0.0015	0.18	-0.0590	-0.0143	0.17	0.0292	0.0059
Dummy if veteran is head	0.91	-0.1582	-0.0117	0.92	-0.3464	-0.0806	0.92	-0.2832	-0.0603
Dummy if non-farm household	0.55	0.7357*	0.0508	0.65	-0.8160*	-0.1892	0.60	-0.2268‡	-0.0465
Dummy if house mortgaged	0.18	-0.2513	-0.0165	0.15	-0.4074*	-0.1000	0.17	-0.3509*	-0.0675
Dummy if unmarried veterans	0.02	0.0565	0.0041	0.02	0.9338‡	0.1951	0.02	0.6532‡	0.1478
Dummy if ownership missing	0.10	0.5770	0.0493	0.09	-0.8152	-0.2009	0.10	-0.1878	-0.0368
Dummy if house rented	0.20	-1.0317*	-0.0568	0.19	-0.3102‡	-0.0758	0.19	-0.4503*	-0.0857
Dummy if widowed veterans	0.16	-0.0089	-0.0006	0.19	0.9666*	0.2124	0.18	0.6347*	0.1389
Dummy if retired veterans	0.36	-0.0145	-0.0010	0.38	-0.1833	-0.0443	0.37	-0.2009‡	-0.0403
Dummy if urban residence	0.30	-0.4481‡	-0.0293	0.36	-0.2892‡	-0.0700	0.33	-0.3318*	-0.0656
Number of years veterans lived after 1910	10.18	0.0017	0.0001	10.25	-0.0242*	-0.0058	10.22	-0.0174*	-0.0035
Observations	.	1669.00	.	.	1624.00	.	.	3293.00	.
R-Squared	.	0.1975	.	.	0.1723	.	.	0.3742	.

Note: The symbols *, ‡ and † represent statistical significance at 1, 5 and 10 percent, respectively. For estimates and slopes less than 0.0001 in magnitude, only degrees of significance are indicated.

Table 3: Coefficient Estimates of Labor Force Participation of Children of Veterans with Monthly Pension Income in 1910 and Interaction Terms as Independent Variables

Variables	Sons			Daughters			Sons and Daughters		
	Means	Estimates	Slope	Means	Estimates	Slope	Means	Estimates	Slope
Intercept	.	4.9148‡	.	.	9.4697*	.	.	5.0158*	.
Monthly Pension Income in 1910	185.15	-0.0118	-0.0008	189.04	-0.0141	-0.0034	187.07	-0.0083‡	-0.0017
Interaction with non-farm missing	21.93	0.0123	0.0008	18.72	0.0156	0.0038	20.35	0.0099	0.0020
Interaction with single	158.44	0.0039	0.0003	154.91	0.0016	0.0004	156.70	0.0021	0.0004
Interaction with veterans' BMI	3459.49	-0.0002	-0.0000	3462.68	0.0000	0.0000	3461.06	-0.0000	-0.0000
Interaction with BMI squared	80460.02	0.0000	0.0000	80717.00	-0.0000	-0.0000	80586.76	0.0000	0.0000
Interaction with foreign born veterans	31.74	-0.0067‡	-0.0004	35.43	-0.0013	-0.0003	33.56	-0.0022‡	-0.0005
Interaction with veteran is head	166.25	0.0031	0.0002	171.17	0.0141	0.0034	168.68	0.0060	0.0012
Interaction with non-farm household	99.97	0.0028	0.0002	121.28	0.0003	0.0001	110.48	0.0007	0.0001
Interaction with house mortgaged	32.30	-0.0008	-0.0001	27.79	0.0017	0.0004	30.07	0.0005	0.0001
Interaction with unmarried veterans	3.46	-0.0057	-0.0004	3.87	-0.0075	-0.0018	3.66	-0.0021	-0.0004
Interaction with ownership missing	23.09	-0.0083	-0.0005	19.57	0.0013	0.0003	21.36	-0.0027	-0.0005
Interaction with house rented	32.56	-0.0074	-0.0005	33.10	0.0010	0.0002	32.83	-0.0008	-0.0002
Interaction with widowed veterans	32.58	0.0008	0.0001	39.44	-0.0007	-0.0002	35.96	0.0005	0.0001
Interaction with retired veterans	74.72	0.0033	0.0002	81.88	-0.0023	-0.0005	78.25	0.0000	0.0000
Interaction with urban residence	53.11	0.0072‡	0.0005	62.97	-0.0005	-0.0001	57.97	0.0023‡	0.0005
Interaction with years veterans lived after 1910	1780.03	0.0000	0.0000	1856.31	0.0001	0.0000	1817.65	0.0000	0.0000
Age	26.89	-0.3199*	-0.0185	27.93	-0.3189*	-0.0785	27.40	-0.2783*	-0.0529
Age Squared	790.27	0.0035*	0.0002	849.51	0.0051*	0.0012	819.49	0.0039*	0.0008
Dummy if non-farm missing	0.10	-3.2046	-0.0913	0.09	-3.3062	-0.5961	0.09	-2.5269	-0.2943
Dummy if female	0.00	.	.	1.00	.	.	0.49	2.5766*	0.4929
Dummy if single	0.86	0.3237	0.0195	0.82	-1.3422*	-0.2786	0.84	-0.9584*	-0.2158
Veterans' BMI in 1910	18.63	-0.0069	-0.0005	18.45	-0.0233	-0.0056	18.54	-0.0181	-0.0037
Veterans' BMI squared	436.54	-0.0012	-0.0001	431.49	0.0013	0.0003	434.05	0.0006	0.0001
Dummy if foreign-born veterans	0.17	1.2815‡	0.1243	0.18	0.1860	0.0442	0.17	0.4639‡	0.0997
Dummy if veteran is head	0.91	-0.9955	-0.0944	0.92	-2.5377	-0.3927	0.92	-1.3194	-0.3081
Dummy if non-farm household	0.55	0.2601	0.0171	0.65	-0.8467‡	-0.1958	0.60	-0.3219	-0.0661
Dummy if house mortgaged	0.18	-0.1508	-0.0096	0.15	-0.7341‡	-0.1807	0.17	-0.4600	-0.0867
Dummy if unmarried veterans	0.02	0.8352	0.0783	0.02	2.3217‡	0.3504	0.02	1.0498	0.2459
Dummy if ownership missing	0.10	2.2398	0.3064	0.09	-1.1425	-0.2777	0.10	0.3108	0.0662
Dummy if house rented	0.20	0.1778	0.0123	0.19	-0.4865	-0.1193	0.19	-0.3225	-0.0625
Dummy if widowed veterans	0.16	-0.1189	-0.0076	0.19	1.1027*	0.2380	0.18	0.5496‡	0.1191
Dummy if retired veterans	0.36	-0.6318	-0.0391	0.38	0.2375	0.0568	0.37	-0.2096	-0.0420
Dummy if urban residence	0.30	-1.7775*	-0.0937	0.36	-0.2216	-0.0536	0.33	-0.7538*	-0.1435
Number of years veterans lived after 1910	10.18	-0.0001	-0.0000	10.25	-0.0404‡	-0.0098	10.22	-0.0232	-0.0047
Observations	.	1669.00	.	.	1624.00	.	.	3293.00	.
R-Squared	.	0.2254	.	.	0.1824	.	.	0.3796	.

Note: The symbols *, ‡ and † represent statistical significance at 1, 5 and 10 percent, respectively. For estimates and slopes less than 0.0001 in magnitude, only degrees of significance are indicated.

Table 4: Coefficient Estimates of School Attendance of Children of Veterans with Monthly Pension Income in 1910 as Independent Variables

Variables	Sons			Daughters			Sons and Daughters		
	Means	Estimates	Slope	Means	Estimates	Slope	Means	Estimates	Slope
Intercept	.	9.7334*	.	.	12.6799*	.	.	10.6800*	.
Monthly Pension Income in 1910	188.38	0.0007	0.0000	188.85	0.0030*	0.0001	188.61	0.0015‡	0.0001
Age	25.10	-0.7036*	-0.0195	25.86	-0.8249*	-0.0199	25.48	-0.7235*	-0.0180
Age Squared	709.68	0.0067*	0.0003	755.52	0.0089*	0.0003	732.60	0.0069*	0.0002
Dummy if non-farm missing	0.14	0.6542	0.0311	0.13	0.3284	0.0128	0.13	0.7442	0.0334
Dummy if female	0.00	.	.	1.00	.	.	0.50	0.1645	0.0057
Dummy if single	0.87	0.5665	0.0178	0.84	0.4219	0.0129	0.86	0.4840	0.0143
Veterans' BMI in 1910	18.70	-0.0695‡	-0.0025	18.35	-0.0413	-0.0014	18.53	-0.0570*	-0.0019
Veterans' BMI squared	438.42	0.0025‡	0.0001	428.20	0.0009	0.0000	433.31	0.0018‡	0.0001
Dummy if foreign-born veterans	0.16	-0.5172‡	-0.0168	0.18	0.0338	0.0012	0.17	-0.2364	-0.0076
Dummy if veteran is head	0.88	-0.2134	-0.0087	0.87	-1.6375†	-0.1051	0.87	-0.8226	-0.0383
Dummy if non-farm household	0.52	-0.0319	-0.0012	0.60	0.3416	0.0115	0.56	0.1085	0.0037
Dummy if house mortgaged	0.18	-0.0991	-0.0036	0.15	0.0523	0.0018	0.16	-0.0387	-0.0013
Dummy if unmarried veterans	0.02	0.7791	0.0421	0.03	-0.0855	-0.0029	0.02	0.3504	0.0141
Dummy if ownership missing	0.14	-1.1805	-0.0314	0.14	-1.7297	-0.0368	0.14	-1.6325	-0.0353
Dummy if house rented	0.20	-0.5424‡	-0.0178	0.19	-0.3986	-0.0124	0.19	-0.4845*	-0.0146
Dummy if widowed veterans	0.18	0.2762	0.0113	0.21	-0.3255	-0.0104	0.20	-0.0400	-0.0014
Dummy if retired veterans	0.36	0.2436	0.0095	0.39	-0.2411	-0.0082	0.37	0.0316	0.0011
Dummy if urban residence	0.30	-0.2279	-0.0083	0.35	-0.3069	-0.0102	0.32	-0.2664†	-0.0088
Number of years veterans lived after 1910	10.15	-0.0071	-0.0003	10.26	-0.0150	-0.0005	10.21	-0.0103	-0.0004
Observations	.	1940.00	.	.	1940.00	.	.	3880.00	.
R-Squared	.	0.6231	.	.	0.6935	.	.	0.6554	.

Note: The symbols *, ‡ and † represent statistical significance at 1, 5 and 10 percent, respectively. For estimates and slopes less than 0.0001 in magnitude, only degrees of significance are indicated.

Table 5: Coefficient Estimates of School Attendance of Children of Veterans with Monthly Pension Income in 1910 and Interaction Terms as Independent Variables

Variables	Sons			Daughters			Sons and Daughters		
	Means	Estimates	Slope	Means	Estimates	Slope	Means	Estimates	Slope
Intercept	.	7.7834	.	.	18.1160*	.	.	12.8358*	.
Monthly Pension Income in 1910	188.38	0.0130	0.0005	188.85	-0.0307*	-0.0009	188.61	-0.0109	-0.0004
Interaction with non-farm missing	31.59	-0.0083	-0.0003	28.00	0.0685*	0.0022	29.79	0.0222	0.0007
Interaction with single	164.85	0.0222‡	0.0008	158.00	0.0025	0.0001	161.42	0.0084	0.0003
Interaction with veterans' BMI	3536.47	-0.0003	-0.0000	3446.52	0.0004	0.0000	3491.49	0.0002	0.0000
Interaction with BMI squared	82093.11	0.0000	0.0000	80184.33	-0.0000	-0.0000	81138.72	-0.0000	-0.0000
Interaction with foreign born veterans	31.35	-0.0014	-0.0000	34.27	0.0036	0.0001	32.81	0.0024	0.0001
Interaction with veteran is head	159.21	-0.0344	-0.0012	161.48	0.0309*	0.0010	160.35	0.0049	0.0002
Interaction with non-farm household	95.80	0.0003	0.0000	112.77	0.0060†	0.0002	104.29	0.0042†	0.0001
Interaction with house mortgaged	31.61	-0.0015	-0.0001	27.42	-0.0029	-0.0001	29.51	-0.0021	-0.0001
Interaction with unmarried veterans	3.51	-0.0016	-0.0001	4.57	-0.0016	-0.0000	4.04	-0.0006	-0.0000
Interaction with ownership missing	32.59	-0.0240	-0.0008	28.79	-0.0306	-0.0009	30.69	-0.0136	-0.0004
Interaction with house rented	32.81	-0.0007	-0.0000	31.43	-0.0037	-0.0001	32.12	-0.0030	-0.0001
Interaction with widowed veterans	39.65	-0.0014	-0.0001	44.08	-0.0036	-0.0001	41.87	-0.0023	-0.0001
Interaction with retired veterans	77.72	0.0010	0.0000	83.84	-0.0062	-0.0002	80.78	-0.0030	-0.0001
Interaction with urban residence	54.31	0.0015	0.0001	60.57	-0.0010	-0.0000	57.44	0.0005	0.0000
Interaction with years veterans lived after 1910	1792.35	-0.0001	-0.0000	1853.18	-0.0002	-0.0000	1822.77	-0.0002‡	-0.0000
Age	25.10	-0.7436*	-0.0186	25.86	-0.8350*	-0.0178	25.48	-0.7328*	-0.0175
Age Squared	709.68	0.0076*	0.0003	755.52	0.0088*	0.0003	732.60	0.0071*	0.0002
Dummy if non-farm missing	0.14	2.1398	0.1650	0.13	-9.8551*	-0.1086	0.13	-2.6682	-0.0448
Dummy if female	0.00	.	.	1.00	.	.	0.50	0.1778	0.0059
Dummy if single	0.87	-2.8623‡	-0.2874	0.84	-0.1191*	-0.0038	0.86	-0.9131	-0.0418
Veterans' BMI in 1910	18.70	-0.0094	-0.0003	18.35	-0.1188	-0.0035	18.53	-0.0988†	-0.0031
Veterans' BMI squared	438.42	-0.0002	-0.0000	428.20	0.0030	0.0001	433.31	0.0032	0.0001
Dummy if foreign-born veterans	0.16	-0.2567	-0.0082	0.18	-0.7136	-0.0180	0.17	-0.7053†	-0.0191
Dummy if veteran is head	0.88	5.5811	0.0693	0.87	-6.2244†	-0.8664	0.87	-1.6303	-0.1003
Dummy if non-farm household	0.52	-0.0352	-0.0012	0.60	-0.7076	-0.0237	0.56	-0.5879	-0.0204
Dummy if house mortgaged	0.18	0.1304	0.0047	0.15	0.5137	0.0189	0.16	0.3138	0.0115
Dummy if unmarried veterans	0.02	1.0335	0.0582	0.03	0.3133	0.0111	0.02	0.4992	0.0208
Dummy if ownership missing	0.14	2.7433	0.2593	0.14	2.5479	0.2061	0.14	0.3257	0.0121
Dummy if house rented	0.20	-0.4532	-0.0139	0.19	0.2252	0.0074	0.19	-0.0033	-0.0001
Dummy if widowed veterans	0.18	0.4833	0.0195	0.21	0.3264	0.0110	0.20	0.3777	0.0139
Dummy if retired veterans	0.36	0.0893	0.0031	0.39	0.8657	0.0298	0.37	0.5649	0.0202
Dummy if urban residence	0.30	-0.5214	-0.0166	0.35	-0.0964	-0.0029	0.32	-0.3329	-0.0105
Number of years veterans lived after 1910	10.15	0.0145	0.0005	10.26	0.0171	0.0005	10.21	0.0231	0.0008
Observations	.	1940.00	.	.	1940.00	.	.	3880.00	.
R-Squared	.	0.6284	.	.	0.7020	.	.	0.6594	.

Note: The symbols *, ‡ and † represent statistical significance at 1, 5 and 10 percent, respectively. Estimates for daughters do not converged. They are reported here only for consistency of presentation. For estimates and slopes less than 0.0001 in magnitude, only degrees of significance are indicated.

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