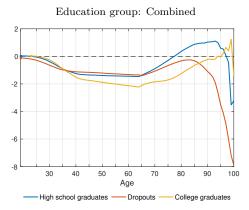
1 Policy: No age pension

Complete elimination of age pension

1.1 Simulated moment: Consumption

1.1.1 Policy change: Anticipated

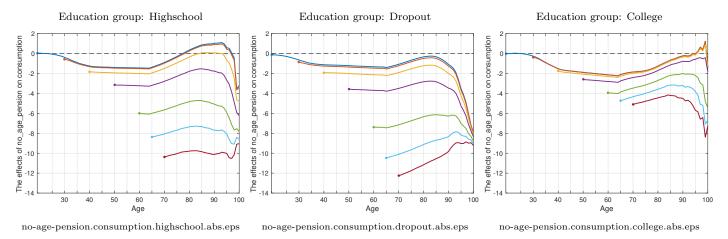
Plotted differences: Absolute

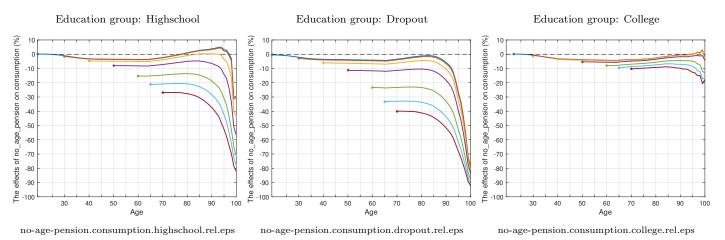


no-age-pension.consumption.antic.abs.eps

1.1.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



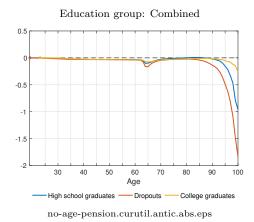


1.2 Simulated moment: Curutil

Note: Mean of current realized utility in by age plots. Discounted sum of realized utility in distribution plots.

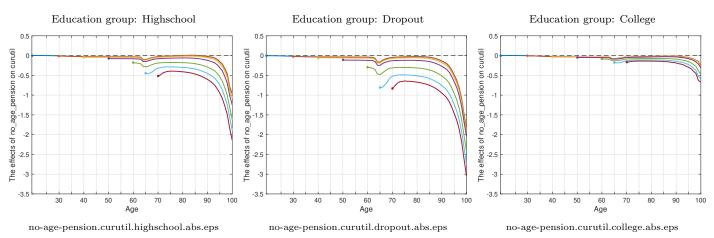
1.2.1 Policy change: Anticipated

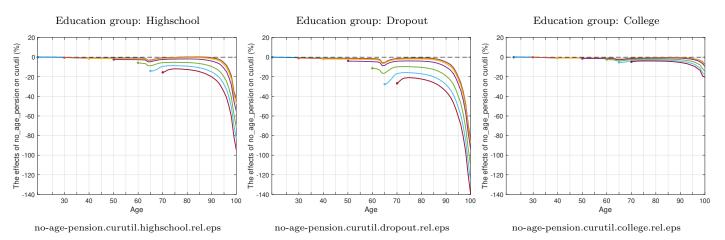
Plotted differences: Absolute



1.2.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

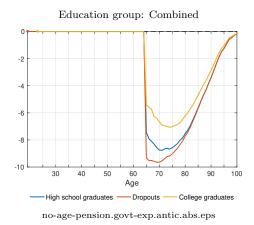




1.3 Simulated moment: Govt-exp

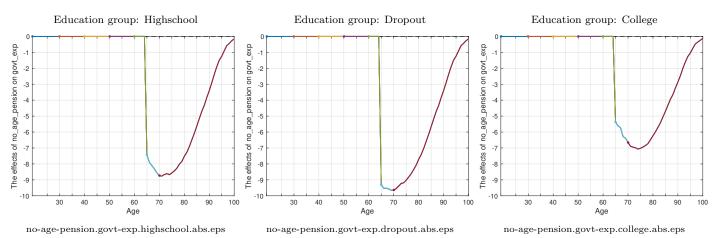
1.3.1 Policy change: Anticipated

Plotted differences: Absolute

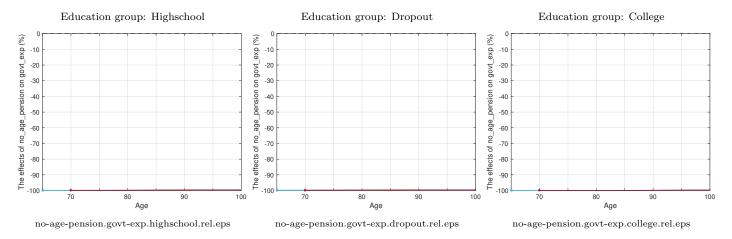


1.3.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

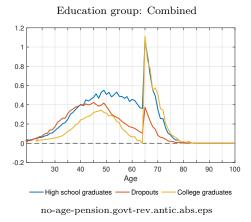


Plotted differences: Relative



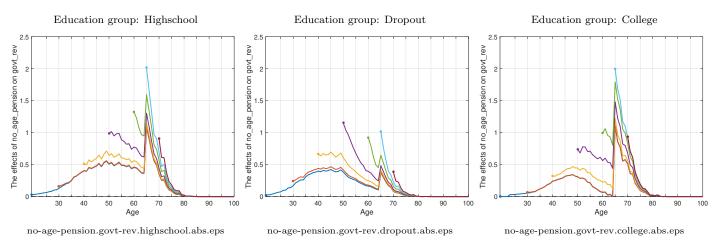
1.4 Simulated moment: Govt-rev

1.4.1 Policy change: Anticipated

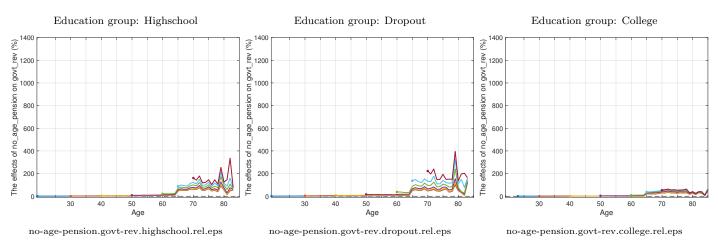


1.4.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



Plotted differences: Relative



1.5 Simulated moment: Govt

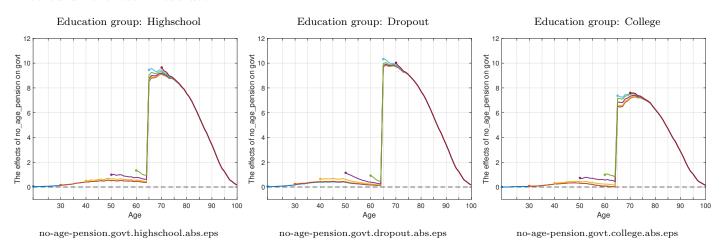
1.5.1 Policy change: Anticipated

Education group: Combined 10 8 6 4 2 30 40 50 60 70 80 90 100 Age High school graduates Proports College graduates

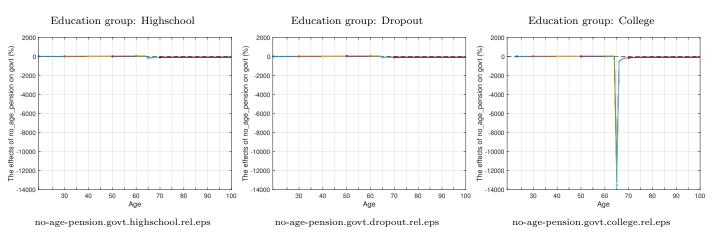
no-age-pension.govt.antic.abs.eps

1.5.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



Plotted differences: Relative



1.6 Simulated moment: Hours-working

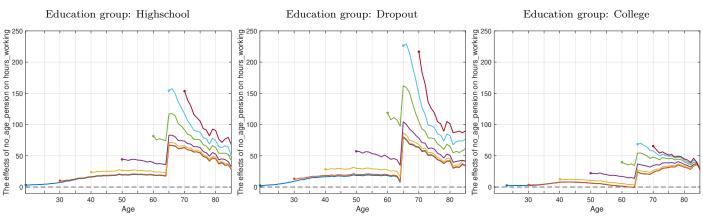
1.6.1 Policy change: Anticipated

Education group: Combined 80 70 60 50 40 30 20 Age High school graduates Dropouts

 ${\it no-age-pension.} hours-working. antic. abs. eps$

1.6.2Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

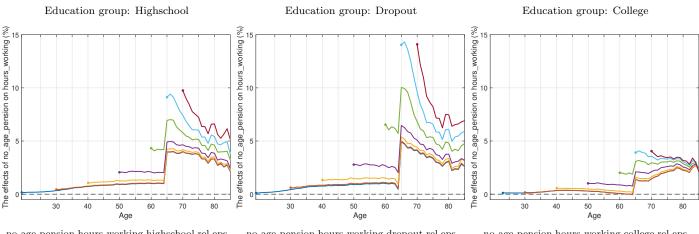


 ${\it no-age-pension.} hours-working.highschool.abs.eps$

 ${\it no-age-pension.} hours-working. dropout. abs. eps$

 ${\it no-age-pension.} hours-working. college. abs. eps$

Plotted differences: Relative



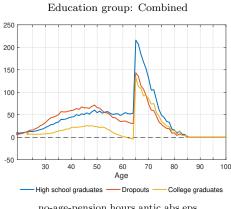
 ${\it no-age-pension.} hours-working.highschool.rel.eps$

 ${\it no-age-pension.} hours-working. dropout.rel.eps$

no-age-pension.hours-working.college.rel.eps

1.7 Simulated moment: Hours

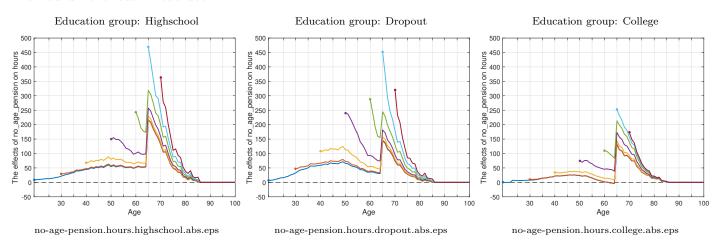
Policy change: Anticipated



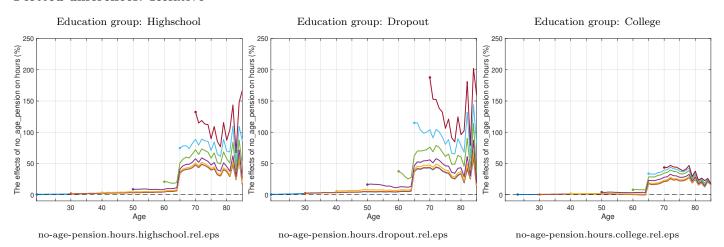
 ${\it no-age-pension.hours.antic.abs.eps}$

Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

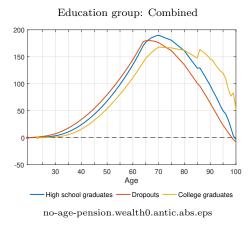


Plotted differences: Relative



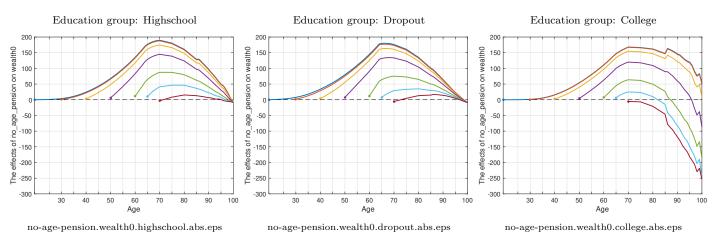
1.8 Simulated moment: Wealth0

Policy change: Anticipated

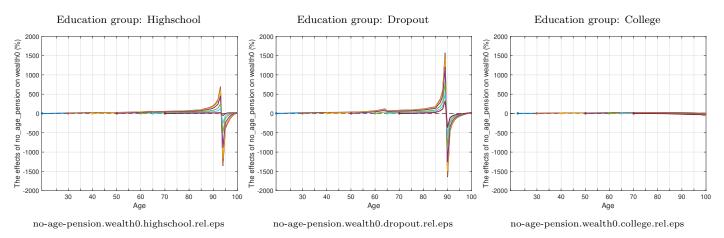


1.8.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



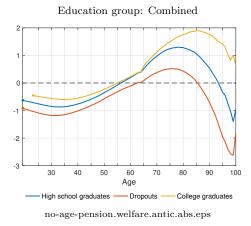
Plotted differences: Relative



1.9 Simulated moment: Welfare

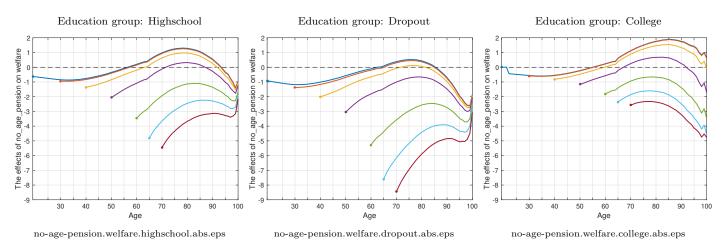
Note: Mean of value function at simulated points in by age plots. Expected lifetime utility at initial age in distribution plots.

1.9.1 Policy change: Anticipated

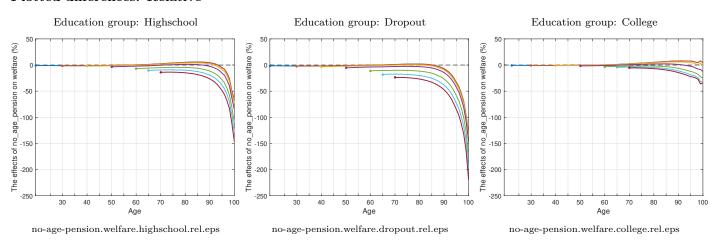


1.9.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



Plotted differences: Relative



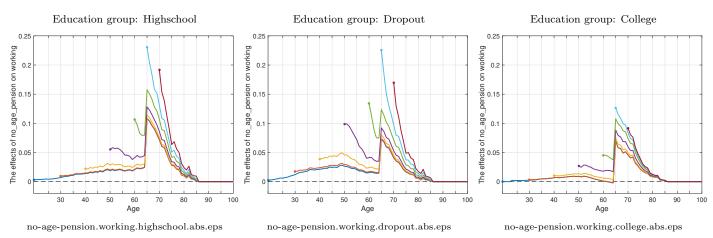
1.10 Simulated moment: Working

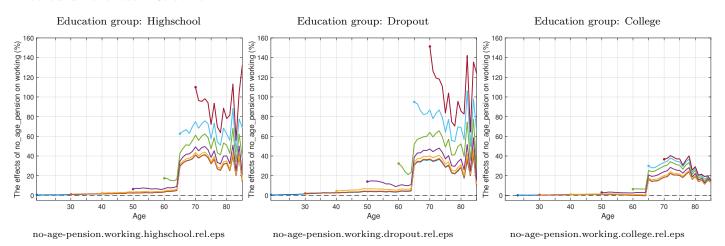
1.10.1 Policy change: Anticipated

Education group: Combined 0.12 0.1 0.08 0.06 0.04 0.02 0.02 30 40 50 60 70 80 90 100 Age High school graduates no-age-pension, working, antic.abs.eps

1.10.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute





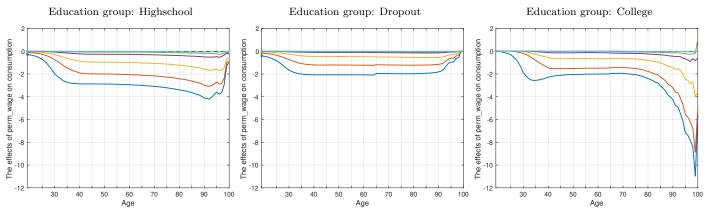
2 Policy: Perm wage

Permanent wage reduction (-10%)

2.1 Simulated moment: Consumption

2.1.1 Policy change: Anticipated

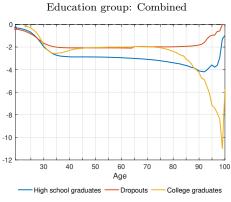
Plotted differences: Absolute



 ${\tt perm\text{-}wage.consumption.highschool.antic.abs.eps}$

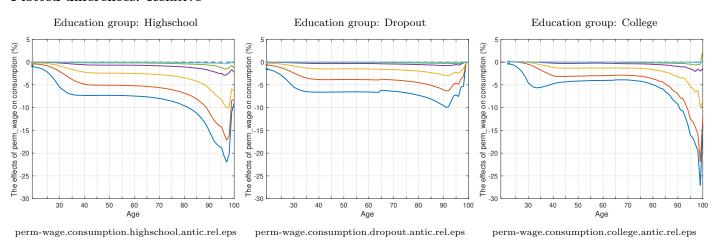
 $perm\hbox{-}wage.consumption.dropout.antic.abs.eps$

 ${\tt perm\text{-}wage.consumption.college.antic.abs.eps}$

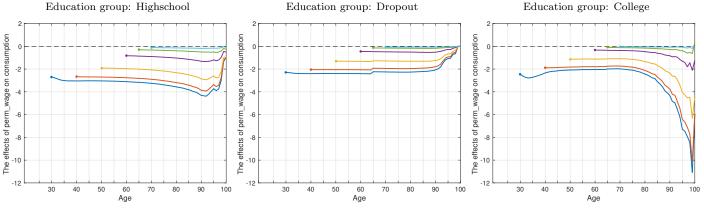


perm-wage.consumption.antic.abs.eps

Plotted differences: Relative



2.1.2 Policy change: Unanticipated

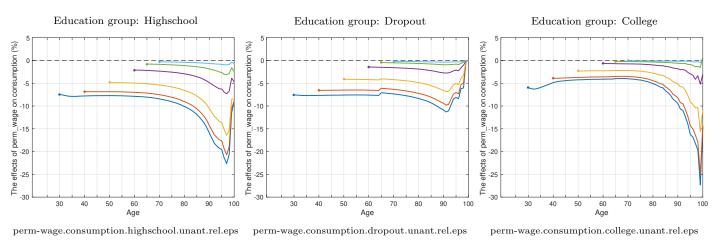


 ${\tt perm\text{-}wage.consumption.highschool.unant.abs.eps}$

 $perm\hbox{-}wage.consumption.dropout.unant.abs.eps$

 $perm\hbox{-}wage.consumption.college.unant.abs.eps$

Plotted differences: Relative

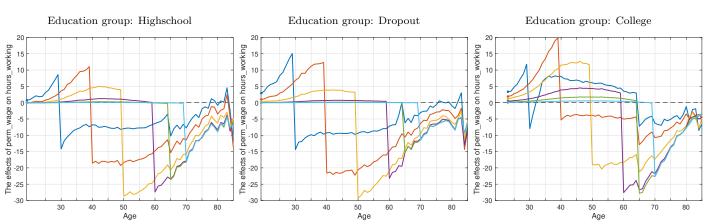


Simulated moment: Hours-working

2.2.1 Policy change: Anticipated

Plotted differences: Absolute

2.2



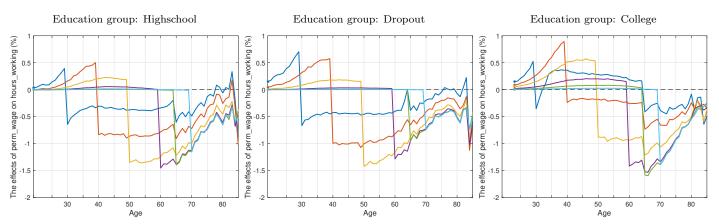
 $perm-wage.hours-working.highschool.antic.abs.eps\\ perm-wage.hours-working.dropout.antic.abs.eps\\$

perm-wage.hours-working.college.antic.abs.eps

Education group: Combined 20 15 10 5 10 5 10 40 50 60 70 80 High school graduates Dropouts College graduates

 ${\tt perm\text{-}wage.hours\text{-}working.antic.abs.eps}$

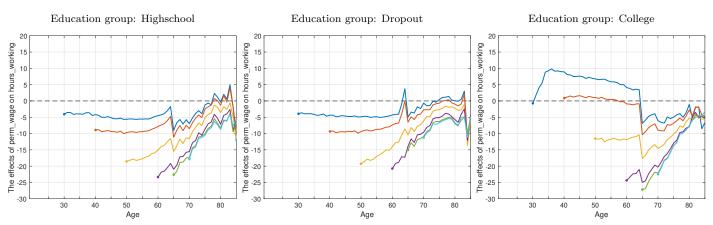
Plotted differences: Relative



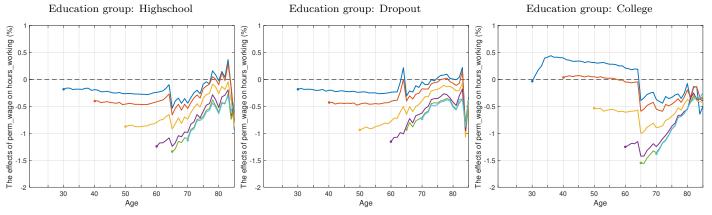
 $perm-wage.hours-working.highschool.antic.rel.eps \\ perm-wage.hours-working.dropout.antic.rel.eps \\ perm-wage.hours-working.dropout.antic.p$

2.2.2 Policy change: Unanticipated

Plotted differences: Absolute



 $perm-wage.hours-working.highschool.unant.abs.eps \hspace{0.2cm} perm-wage.hours-working.dropout.unant.abs.eps \hspace{0.2cm} perm-wage.hours-working.highschool.unant.abs.eps \hspace{0.2cm} perm-wage.hours-w$



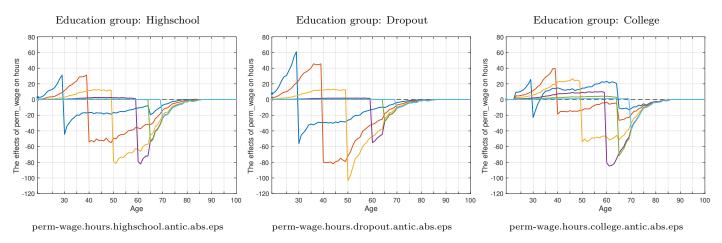
 $perm-wage.hours-working.highschool.unant.rel.eps\\ perm-wage.hours-working.dropout.unant.rel.eps\\$

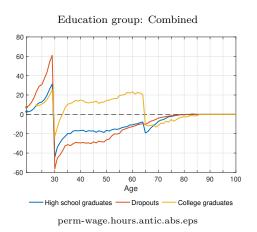
perm-wage.hours-working.college.unant.rel.eps

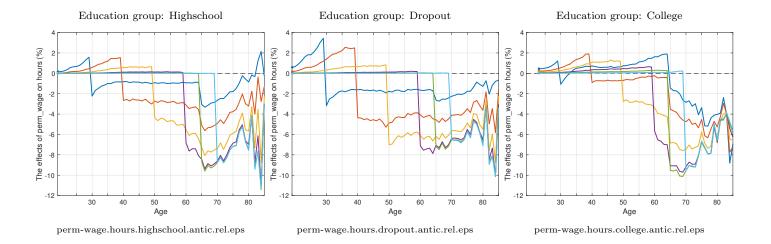
2.3 Simulated moment: Hours

2.3.1 Policy change: Anticipated

Plotted differences: Absolute

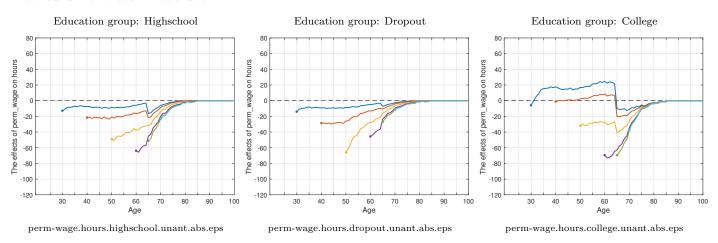




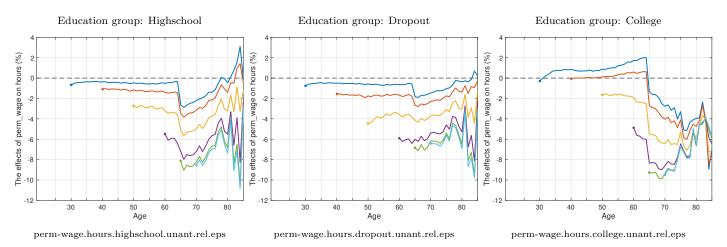


2.3.2 Policy change: Unanticipated

Plotted differences: Absolute

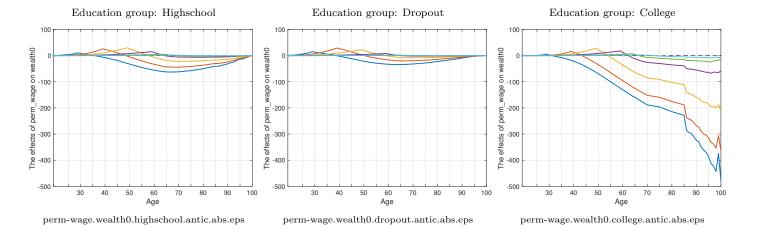


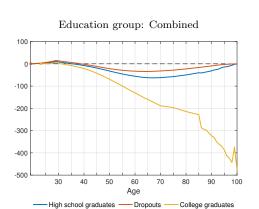
Plotted differences: Relative



2.4 Simulated moment: Wealth0

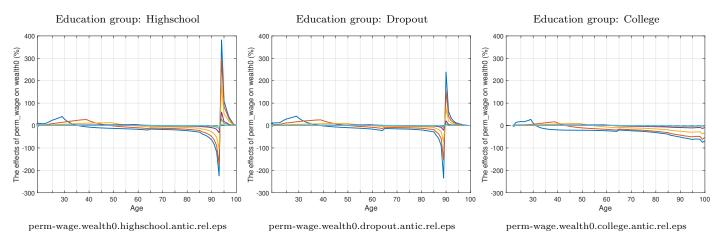
2.4.1 Policy change: Anticipated



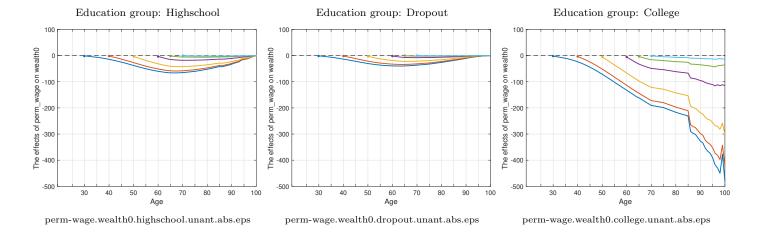


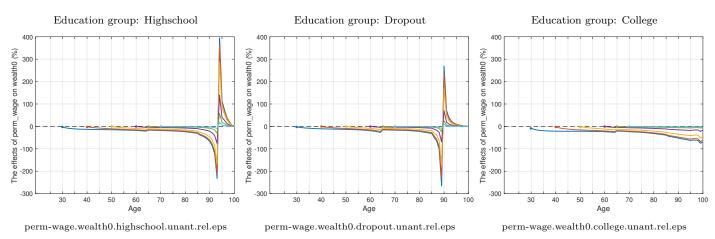
perm-wage.wealth0.antic.abs.eps

Plotted differences: Relative



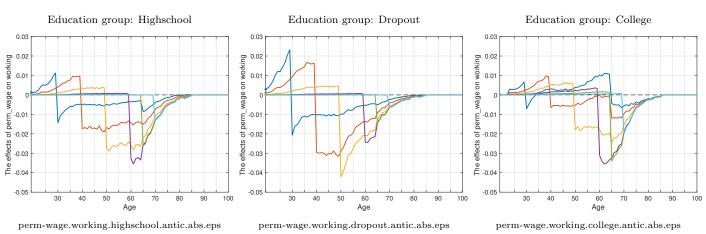
2.4.2 Policy change: Unanticipated

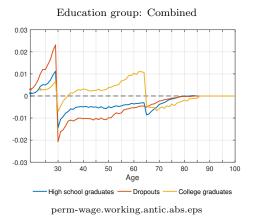


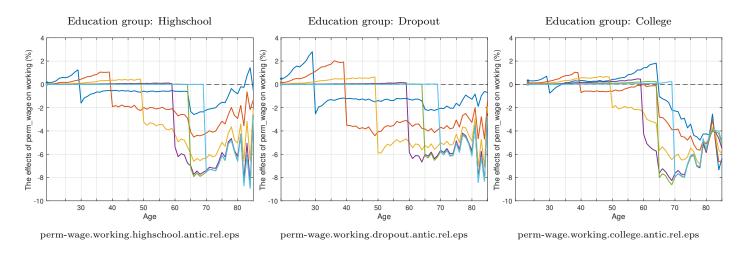


2.5 Simulated moment: Working

2.5.1 Policy change: Anticipated

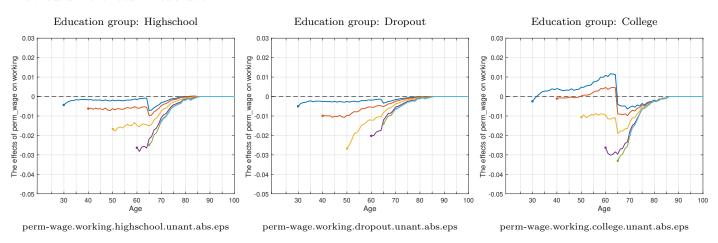


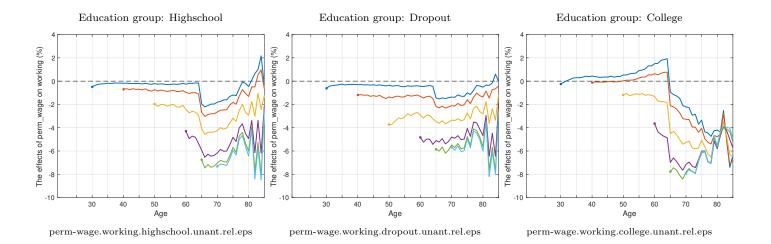




2.5.2 Policy change: Unanticipated

Plotted differences: Absolute





3 Policy: Revneutral

Note: Revenue neutral calibration is performed in the following way. Policy parameters are set to implement a combination of policies. The model is solved. Initial conditions for the simulation are set for nsim = 1000 individuals of each education and type: altogether 6*nsims simulated lifecycles which share 6 identical sets of idiosyncratic shocks. The unobserved types are integrated over when education specific moments are computed.

The policy simulations are done in the usual way to produce both anticipated and unanticipated effects at given policy change revelation ages. Along with the usual moments, government revenue and expenditure is also simulated for each of the 6 groups of individuals, and weighted by unobserved type membership probabilities to result in education specific values for each revelation age.

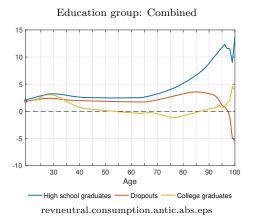
The computed scalar measure of government deficit/surplus is loosely based on the OLG framework using the observed structure of the population. Namely, the observed counts in each education by age cell are aggregated to represent the given set of revelation ages by education (as if population only consisted of cohorts at given revelation ages). The constructed discrete distribution is then converted into weights, which are applied to the simulated budget deficit/surplus. Simple summation is then used over all ages in the simulated lifecycles.

To calibrate RN policies, the anticipated variant of the aggregated measure is brought below a tolerance level (\$100 per capita annually) by moving the parameter of one of the policy.

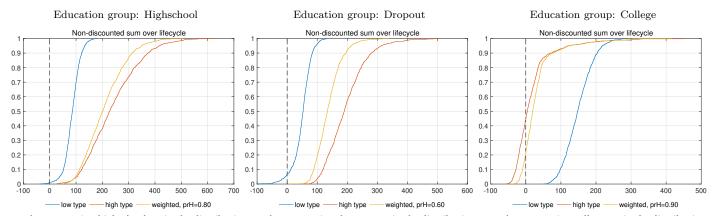
3.1 Simulated moment: Consumption

3.1.1 Policy change: Anticipated

Plotted differences: Absolute

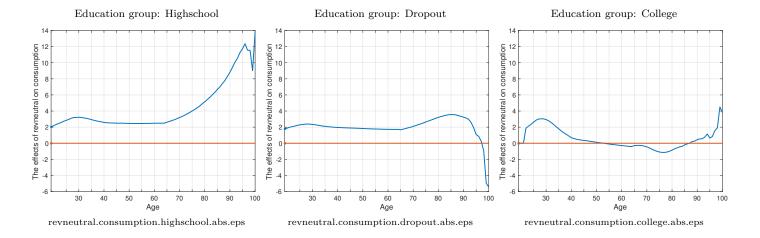


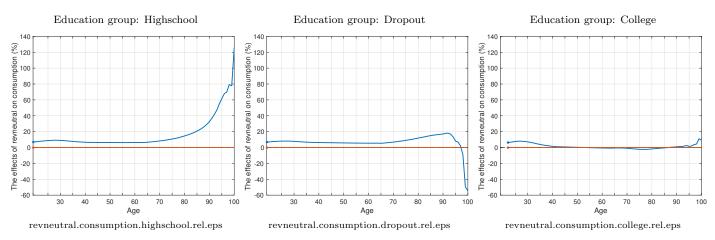
Distribution



 $revneutral. consumption. highs chool. antic. abs. distrib \verb"ute' ione ups al. consumption. dropout. antic. abs. distribution. eps al. consumption. dropout. All consumption. All consumption. All consumption. All consumption. dropout. All consumption. All consumption. All consumption. All$

3.1.2 Policy change: Combined anticipated and unanticipated



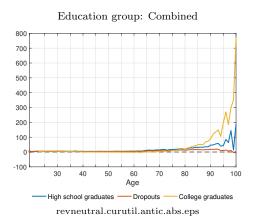


3.2 Simulated moment: Curutil

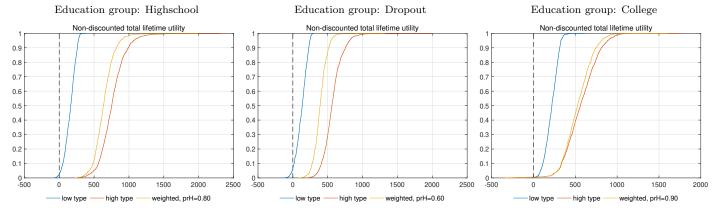
Note: Mean of current realized utility in by age plots. Discounted sum of realized utility in distribution plots.

3.2.1 Policy change: Anticipated

Plotted differences: Absolute



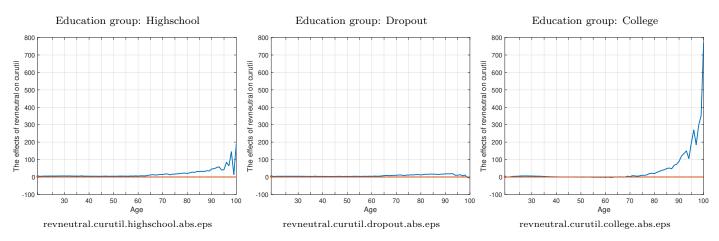
Distribution



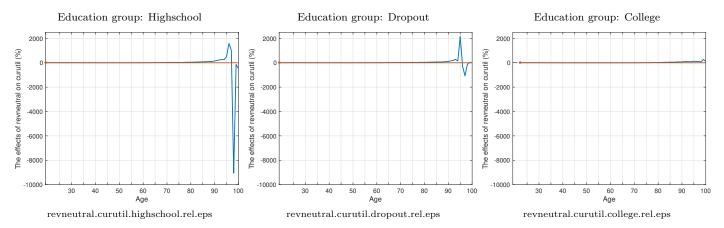
revneutral. curutil. high school. antic. abs. distribution. eps vneutral. curutil. dropout. antic. abs. distribution. eps vneutral. curutil. college. antic. abs. distribution. abs. distributi

3.2.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

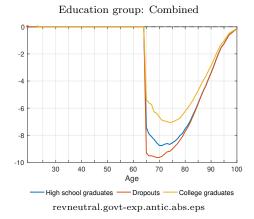


Plotted differences: Relative

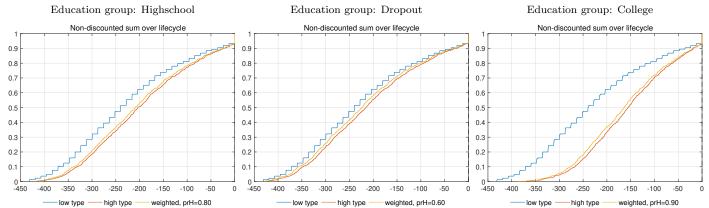


3.3 Simulated moment: Govt-exp

3.3.1 Policy change: Anticipated



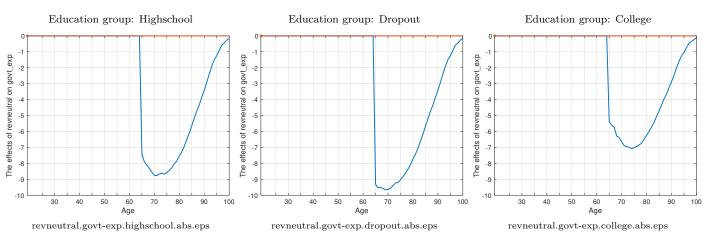
Distribution

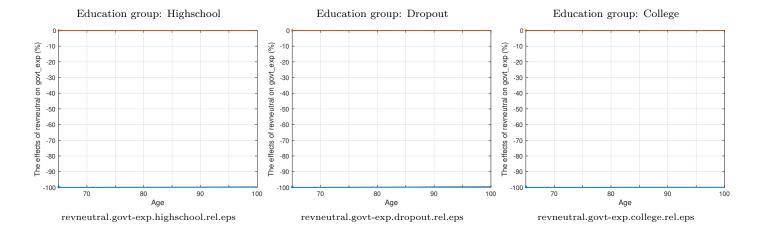


 $revneutral.govt-exp.highschool.antic.abs.distribution \textbf{\textit{exps}} utral.govt-exp.dropout.antic.abs.distribution.\textbf{\textit{exps}} neutral.govt-exp.college.antic.abs.distribution.\textbf{\textit{exps}} neutral.govt-exp.college.antic.abs.distribution.exps neutral$

3.3.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

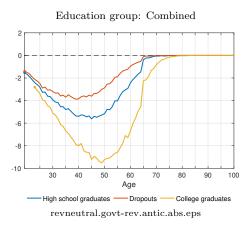




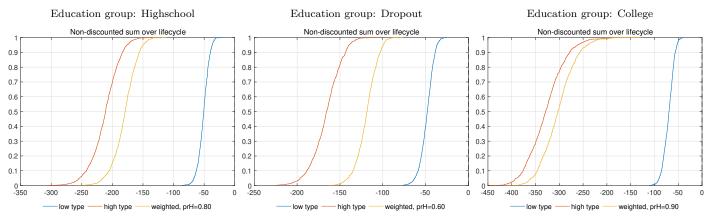
3.4 Simulated moment: Govt-rev

3.4.1 Policy change: Anticipated

Plotted differences: Absolute

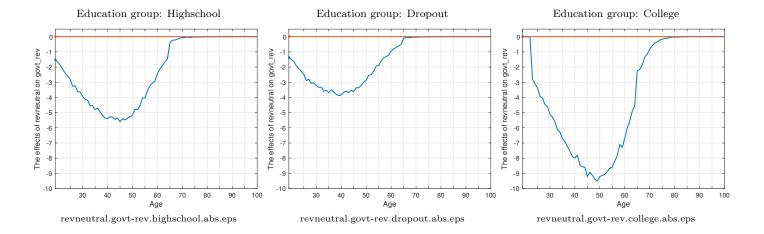


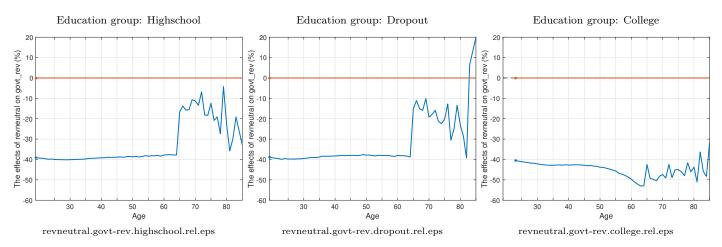
Distribution



 $revneutral.govt-rev.highschool.antic.abs.distribution. \textbf{\textit{eps}} neutral.govt-rev.college.antic.abs.distribution. \textbf{\textit{eps}} neutral.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.college.antic.abs.distribution.govt-rev.colle$

${\bf 3.4.2}\quad {\bf Policy\ change:\ Combined\ anticipated\ and\ unanticipated}$

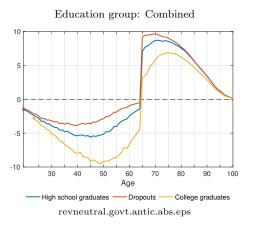




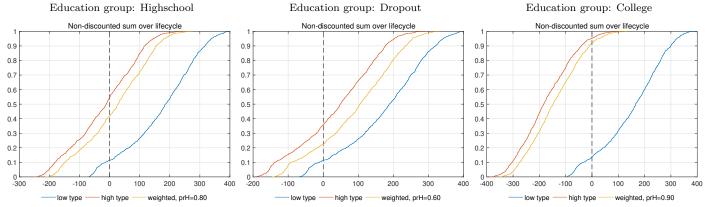
3.5 Simulated moment: Govt

3.5.1 Policy change: Anticipated

Plotted differences: Absolute



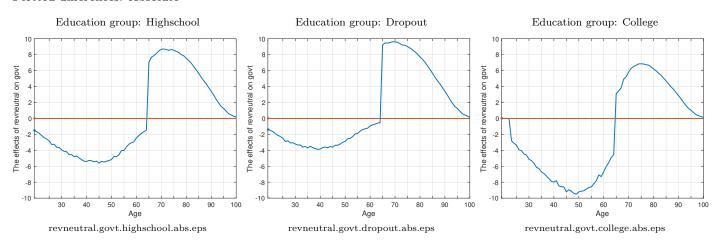
Distribution



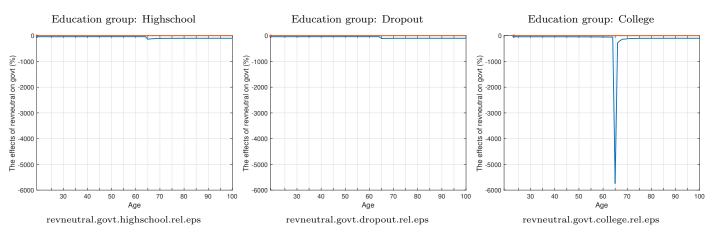
revneutral.govt. high school. antic. abs. distribution. epse vneutral.govt. dropout. antic. abs. distribution. epse vneutral.govt. distribution. epse vneutral.govt. distribution. epse vneutral.govt. dropout. Antic. abs. drop

3.5.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



Plotted differences: Relative



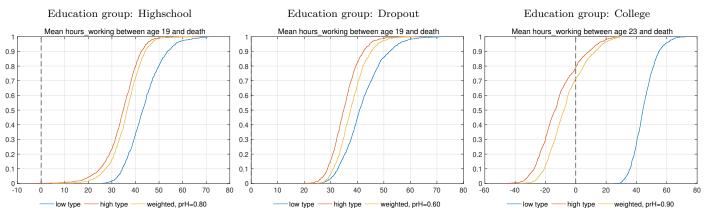
3.6 Simulated moment: Hours-working

3.6.1 Policy change: Anticipated

Education group: Combined 100 80 40 20 -40 30 40 50 Age High school graduates Dropouts College graduates

revneutral.hours-working.antic.abs.eps

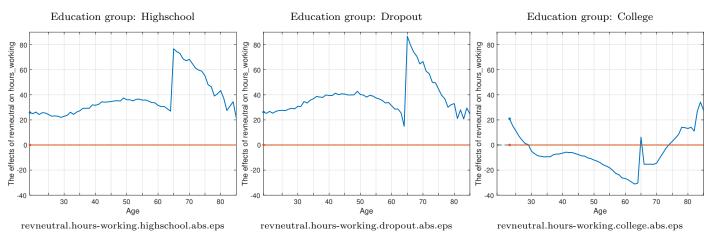
Distribution

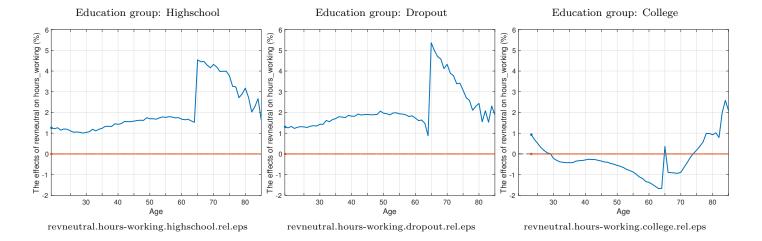


 $revneutral. hours-working. high school. antic. abs. distrib \textbf{\textit{utivineutiqual}}. hours-working. dropout. antic. abs. distrib \textbf{\textit{utivinequal}} \textbf{\textit{a}} l. hours-working. college. antic. abs. distribution. eps. distributi$

3.6.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

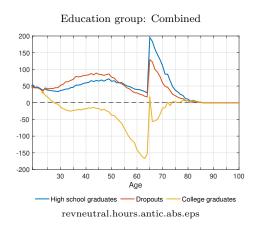




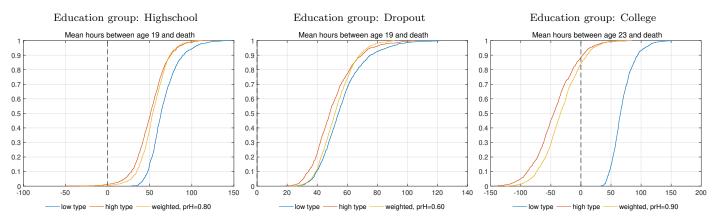
3.7 Simulated moment: Hours

3.7.1 Policy change: Anticipated

Plotted differences: Absolute

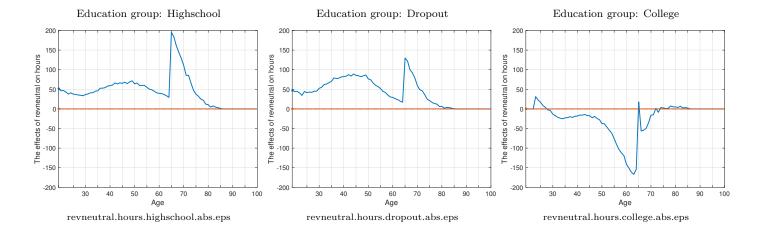


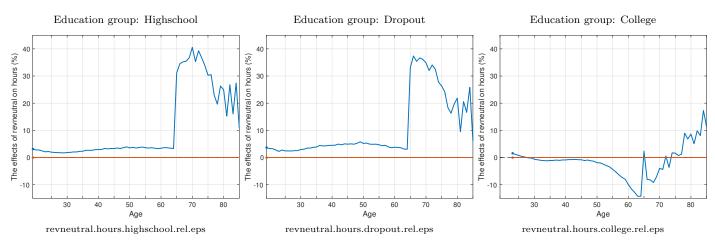
Distribution



revneutral. hours. high school. antic. abs. distribution. epsevneutral. hours. dropout. Antic. abs. dropout. Ant

3.7.2 Policy change: Combined anticipated and unanticipated

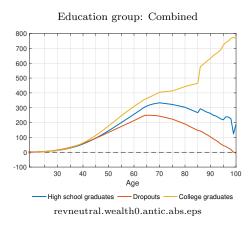




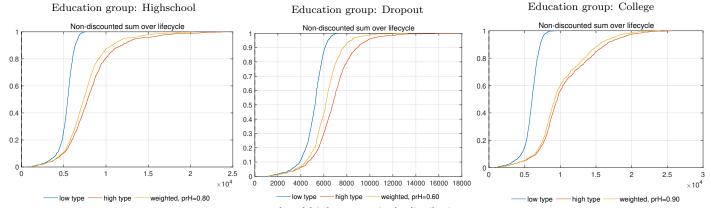
3.8 Simulated moment: Wealth0

3.8.1 Policy change: Anticipated

Plotted differences: Absolute



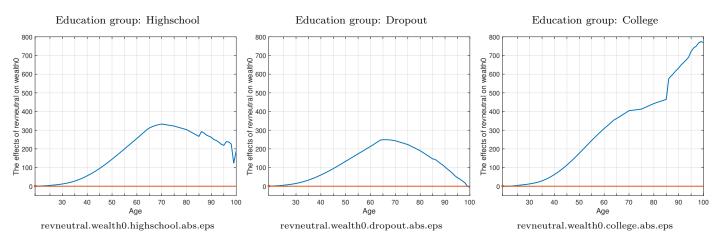
Distribution



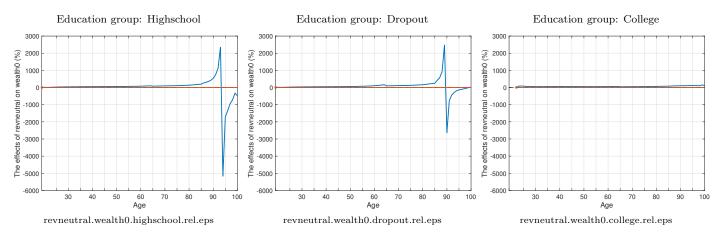
 $revneutral. we alth 0. high school. antic. abs. distribution. \ref{eq:constraint} abs. distribution. eps when the distribution and the$

3.8.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute



Plotted differences: Relative

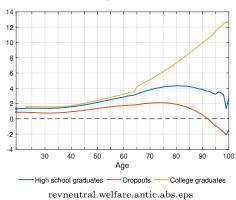


3.9 Simulated moment: Welfare

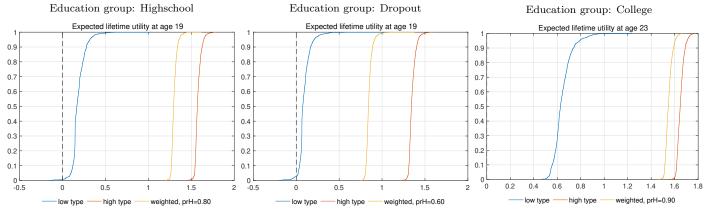
Note: Mean of value function at simulated points in by age plots. Expected lifetime utility at initial age in distribution plots.

3.9.1 Policy change: Anticipated

Education group: Combined



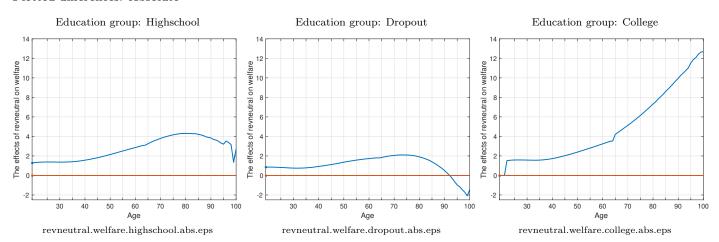
Distribution

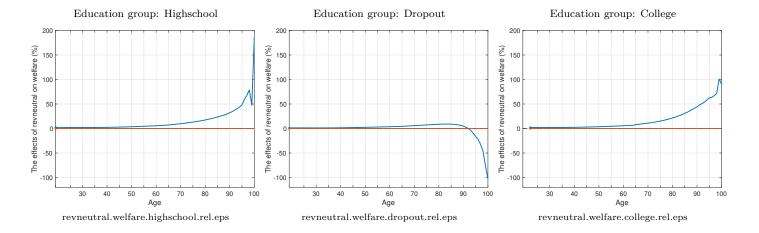


 $revneutral. welfare. high school. antic. abs. distribution. \textbf{\textit{eps}} neutral. welfare. dropout. antic. abs. distribution. abs. dropout. antic. abs. dropout. abs. dropo$

3.9.2 Policy change: Combined anticipated and unanticipated

Plotted differences: Absolute

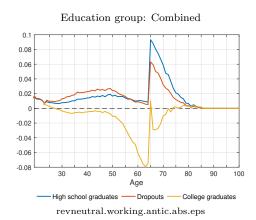




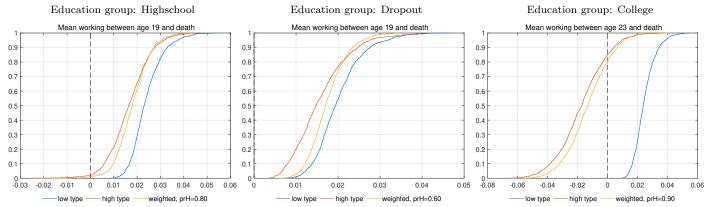
3.10 Simulated moment: Working

3.10.1 Policy change: Anticipated

Plotted differences: Absolute

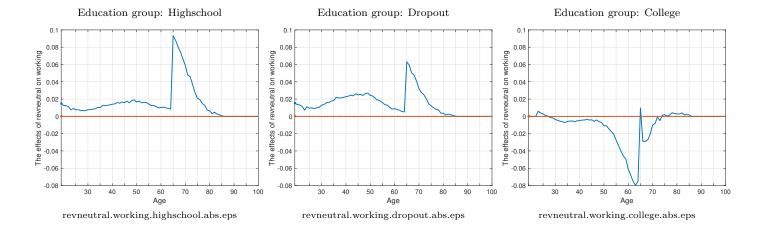


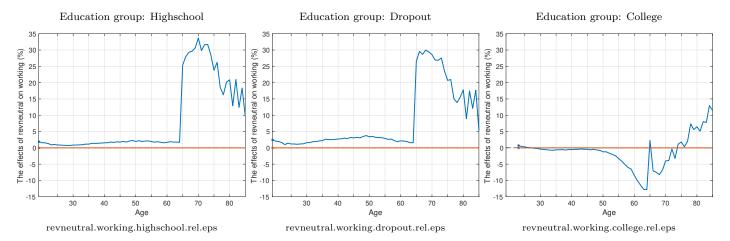
Distribution



revneutral. working. high school. antic. abs. distribution reps eutral. working. dropout. antic. abs. distribution. eps vneutral. working. college. antic. abs. distribution. eps vneutral. working. dropout. Antic. abs. dropout. Antic

3.10.2 Policy change: Combined anticipated and unanticipated





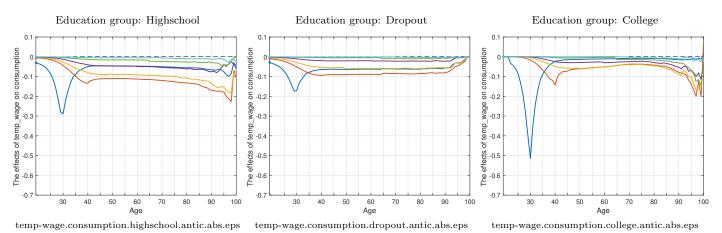
4 Policy: Temp wage

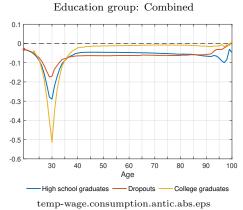
Temporary wage reduction (-10%)

4.1 Simulated moment: Consumption

4.1.1 Policy change: Anticipated

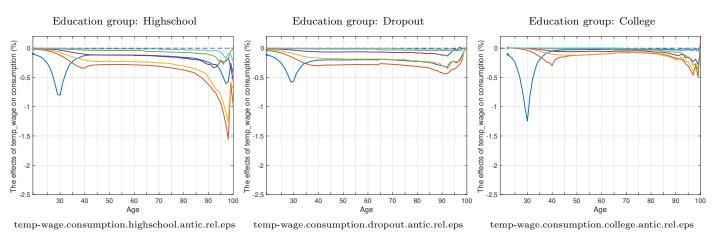
Plotted differences: Absolute



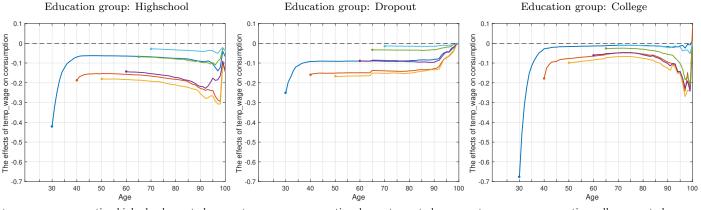


temp wagereensamptionanticassisps

Plotted differences: Relative



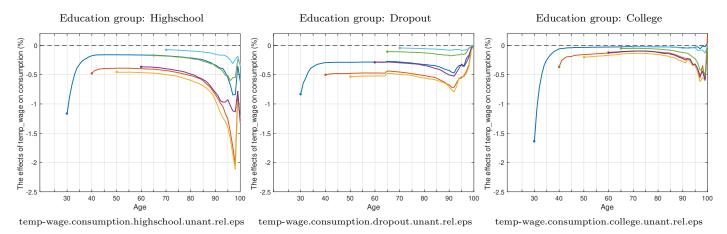
4.1.2 Policy change: Unanticipated



 $temp-wage.consumption.highschool.unant.abs.eps \\ temp-wage.consumption.dropout.unant.abs.eps \\$

temp-wage.consumption.college.unant.abs.eps

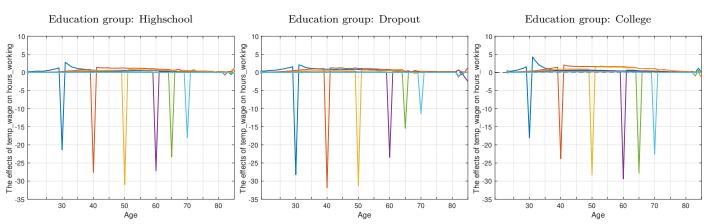
Plotted differences: Relative



4.2 Simulated moment: Hours-working

4.2.1 Policy change: Anticipated

Plotted differences: Absolute



 $temp-wage.hours-working.highschool.antic.abs.eps \\ temp-wage.hours-working.dropout.antic.abs.eps \\ temp-wage.hours-working.d$

temp-wage.hours-working.college.antic.abs.eps

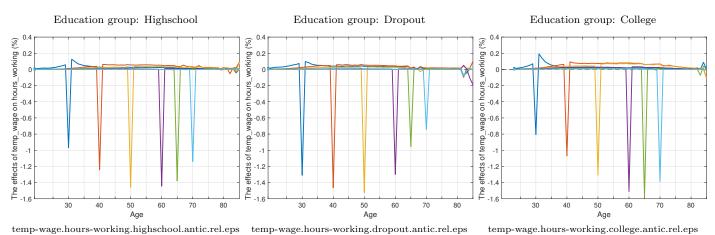
Education group: Combined

— High school graduates — Dropouts — College graduates temp-wage.hours-working.antic.abs.eps

50 Age

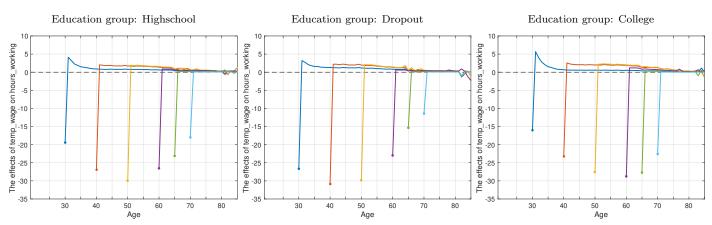
Plotted differences: Relative

-5 -10 -15 -20 -25

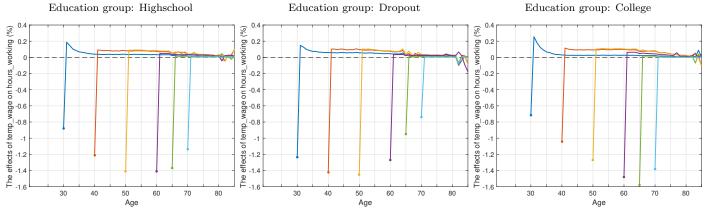


4.2.2 Policy change: Unanticipated

Plotted differences: Absolute



 $temp-wage.hours-working.highschool.unant.abs.eps \ temp-wage.hours-working.dropout.unant.abs.eps \ temp-wage.hours-working.d$



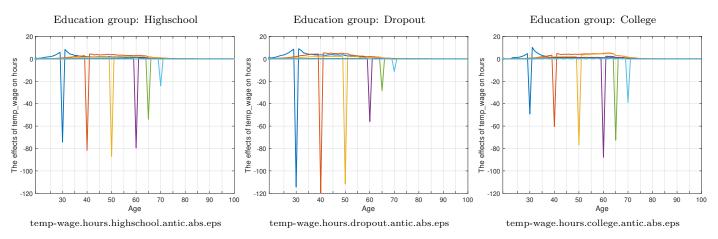
 $temp-wage.hours-working.highschool.unant.rel.eps \\ temp-wage.hours-working.dropout.unant.rel.eps \\$

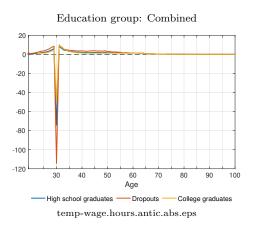
temp-wage.hours-working.college.unant.rel.eps

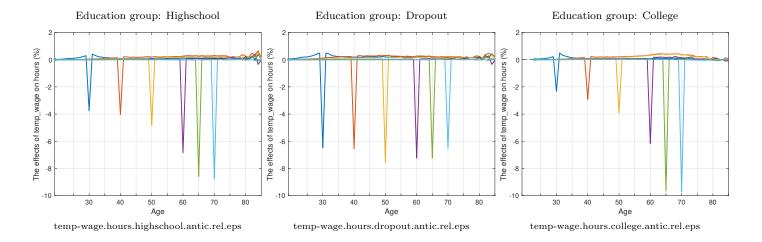
4.3 Simulated moment: Hours

4.3.1 Policy change: Anticipated

Plotted differences: Absolute

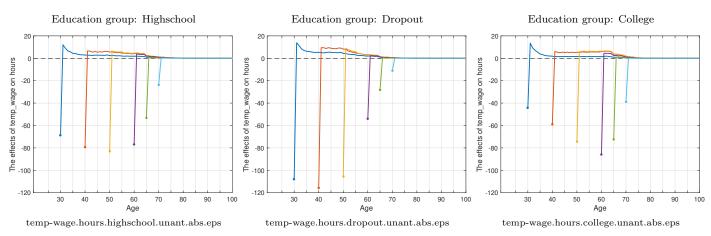




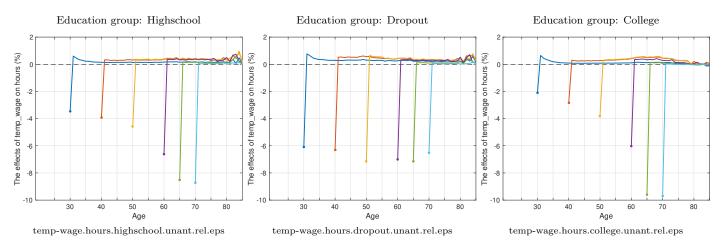


4.3.2 Policy change: Unanticipated

Plotted differences: Absolute

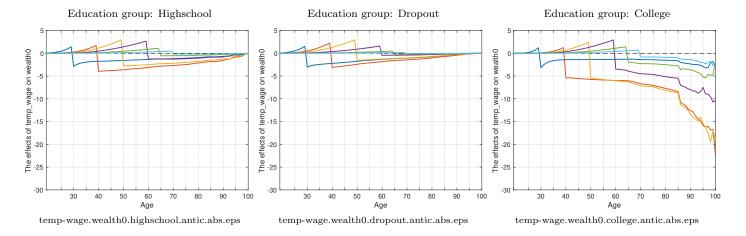


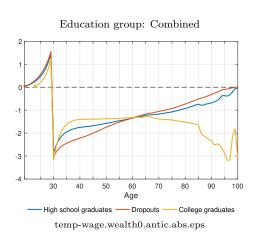
Plotted differences: Relative

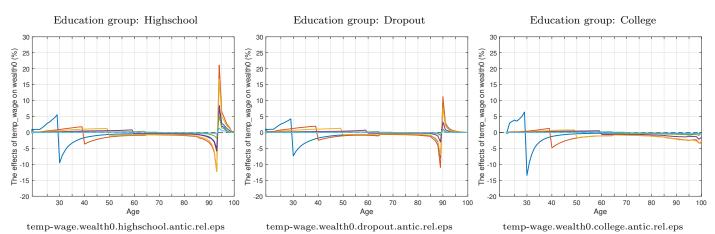


4.4 Simulated moment: Wealth0

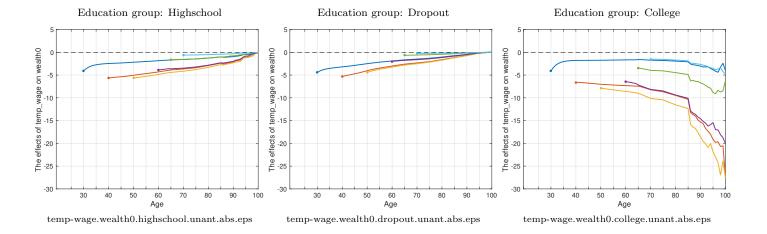
4.4.1 Policy change: Anticipated

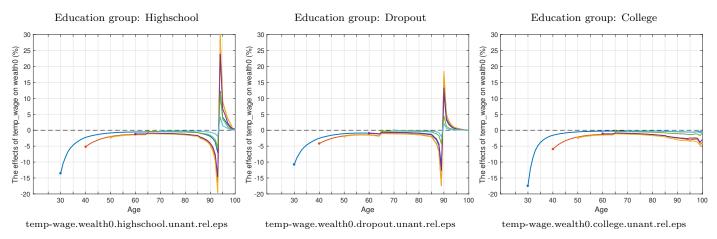






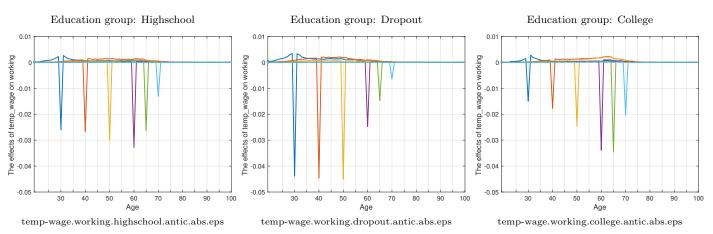
4.4.2 Policy change: Unanticipated

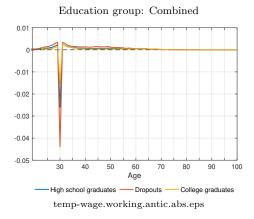


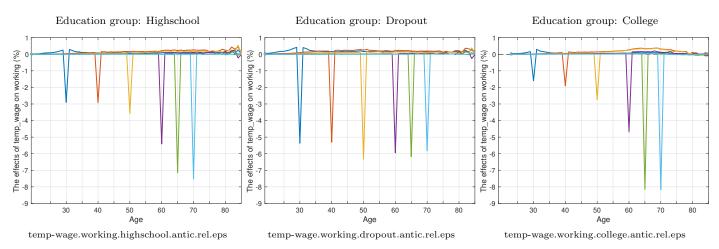


4.5 Simulated moment: Working

4.5.1 Policy change: Anticipated







4.5.2 Policy change: Unanticipated

Plotted differences: Absolute

