THE CROSS-COHORT DISTRIBUTION OF GOVERNMENT NON-RETIREMENT TRANSFERS AND ITS IMPACT ON WORKING AND EARNING

Jagadeesh Gokhale[*]

1. Introduction

During the last four decades, the composition of federal spending has shifted significantly from the provision of physical public goods – requiring government purchases for defense, public infrastructure etc. – to the provision of social insurance benefits that mainly involve tax transfer programs. Past expansion in federal retirement and health care programs has been studied extensively. Less attention has been devoted to growth in federal non-retirement transfers such as education and training subsidies, child-care benefits, unemployment support, and others. These transfers have more than doubled since the early Sixties from 1.9 per cent of GDP to 4.2 per cent today.

Federal non-retirement transfers could fulfill several roles. First, they constitute welfare payments meant to sustain the consumption of those affected by unforeseen economic shocks against which private insurance is not available or turns out to be inadequate *ex post*. This role of non-retirement transfers is often cited as the major motivation for undertaking them. Here, it is termed as a "defensive" role – to counter the loss of resources for current consumption from economic misfortunes.

Second, non-retirement transfers could fulfill an "offensive" role by improving the functioning of the economy and markets. This role, too, is a major motivation for some types of transfers. Their provision may help recipients and others to achieve better economic outcomes in the future such as higher employment and higher productivity and earnings.

Although no public transfers are motivated by a desire to worsen future economic outcomes, some non-retirement transfers may exert negative economic effects. Indeed, generous provision of welfare benefits could weaken economic performance by increasing dependency on public support, reducing labor force participation, and discouraging saving. Thus, a third possibility is that non-retirement transfers worsen future economic outcomes for recipients. This role of non-retirement transfers is termed "regressive."

The rationale for most government-provided transfers – unemployment insurance, child support, housing and energy assistance, health-care subsidies etc. is "defensive" – to support those suffering bad economic outcomes and misfortunes. In

---

[*] Senior Fellow, Cato Institute, Washington D.C. This paper was prepared for presentation at the Bank of Italy's conference on fiscal policy, March/April 2005. The author thanks William Niskanen and Doris Prammer for helpful comments and Arash Molavi Vassei and Roger D'Souza for excellent research assistance.

contrast federal education and training subsidies have an explicitly "offensive" rationale – to improve economic outcomes for their direct recipients and the operation of markets and the economy generally. However, transfers undertaken mainly for "defensive" purpose may also exert "offensive" effects. And those undertaken mainly for "offensive" reasons may not be very effective and may, indeed, exert "regressive" effects. The objective of this paper is to empirically examine whether federal transfers on account of unemployment insurance, child-care benefits, education and training subsidies and other non-retirement transfers exert mainly "offensive", "defensive" or "regressive" economic effects on recipients future economic outcomes.

To the author's knowledge, there have been no studies addressing the issues outlined above. The traditional literature has mostly tackled the question of whether government expenditures on public infrastructure and R&D outlays have productive effects. Most such studies examine whether that type of public spending affects the productivity of private firms.[1] Traditional public finance terminology does not attach the label of "productive" to public transfers because they are mainly intended to support recipients' consumption. Nevertheless, a useful distinction could be made between those non-retirement transfers that are fully consumed without any significant future repercussions versus those that exert positive (offensive) and negative (regressive) effects on recipients' future economic outcomes.

Whether or not public non-retirement transfers generate "offensive" effects is relevant for the ongoing debate on Social Security reform in the United States. One way to support the projected larger proportion of older individuals in the population is to save and invest ahead of their retirement. Amendments to U.S. Social Security laws in 1983 resulted in payroll tax surpluses that are expected to continue until the year 2017. However, those surpluses are invested exclusively in non-marketable U.S. Treasury securities and recent studies (Smetters, 2002; Nataraj and Shoven, 2004) suggest that not only does the federal government spend those surpluses but that their availability induces yet additional federal spending on non-Social Security federal operations. These studies imply that rather than saving those surpluses to help pay for the Social Security benefits of baby-boomers upon their retirement, the surpluses are being dissipated on other federal spending.

Because the share of federal spending on physical goods and services (investment in infrastructure, defense, R&D etc.) has been declining and the share of non-physical transfers has been increasing, one can deduce that any incremental resources available to the federal government – such as Social Security payroll tax surpluses – are directed toward the latter outlays.[2] That is, Social Security surpluses and the induced additional federal spending are used to finance the growth in federal transfers: Medicare and Medicaid benefits, unemployment support, education subsidies, child-care assistance and so on. Of these, retirement transfers would,

---

[1] For example, see Holtz-Eakin, D. (1992), *Public Sector Capital and the Productivity Puzzle*, National Bureau of Economic Research, Working Paper, No. 4122, July.

[2] The author gratefully acknowledges a discussion with Blair Comley on this point.

obviously, not improve markets and the economy directly, but non-retirement transfers could.

If non-retirement transfers, indeed, generate positive labor market outcomes for their recipients, the fact that Social Security surpluses are available for current government spending would not, in and of itself, imply that payroll tax surpluses are wastefully dissipated. On the contrary, such spending would constitute an effective "storage technology" – expanding economic output and the future tax base for meeting the government's future Social Security benefit obligations.

Federal non-retirement transfers and subsidy programs include education and job-training subsidies, unemployment insurance, and child support programs. These programs transfer resources to people during their working lifetimes, potentially assisting them to be more productive. In addition, they may have positive effects on non-recipients because higher education and lower unemployment among their direct recipients promotes better social and market environments.

It is well known that measuring the indirect effects of federal transfers on non-recipients is extremely difficult, if not impossible. Unfortunately, isolating the direct effects of particular federal expenditures on recipients' labor productivity is also very difficult because micro-survey datasets that track individuals and households over long periods of time do not contain adequate information on receipts from government non-retirement transfers. And micro-surveys that include detailed information on such federal transfers do not follow the same individuals over sufficiently long periods of time.[3]

Given these constraints, this paper's limited objective is to examine the distribution of federal non-retirement spending and to measure its direct impact on labor market outcomes at a *cohort* level of aggregation where cohorts are defined by single year of birth and gender of the family head. A dataset is constructed of cohort averages for earnings, labor-force participation, part-time/full-time status, demographic characteristics, and receipts of federal non-retirement transfers. The estimates are based on the Current Population Survey's March Supplement files spanning the years 1988 and 2001. This period is especially relevant for the Social Security reform debate because significant payroll tax surpluses began to accrue only by the late Eighties.

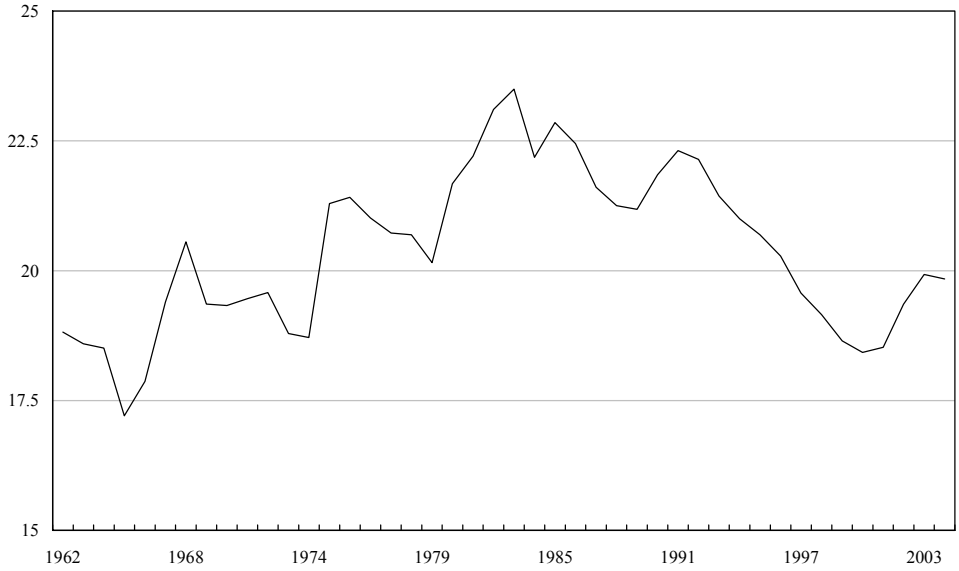
The first section below describes how the composition of federal expenditures has changed over the past four decades. It shows that along with retirement transfers, non-retirement transfers have also grown significantly as a share of GDP. Section 2 discusses the potential justifications for non-retirement transfers by classifying their objectives under "defensive," "offensive" and "regressive" categories. Section 3 describes the construction of the cohort dataset used to analyze the effects of

---

[3] The Survey of Income and Program Participation interviews households for a maximum of 32 months. Another potential data set is that of the University of Michigan's Panel Study of Income Dynamics which contains data on households between 1968 and 1999. However, that survey is known to over-sample relatively poorer households and does not contain detailed information on income on public transfers and subsidies.

Figure 1

Federal Outlays
(percent of GDP)



non-retirement transfers on cohort labor market outcomes. Section 4 describes the two-stage estimation method used to determine whether particular federal transfers exert any of the three effects described in Section 2. Section 6 provides details about the cohort data set used in the estimation; section 7 describes the findings; and Section 7 concludes the paper.

2. Changing composition of government spending

United States' federal spending as a percentage of U.S. GDP has remained stationary at about 20 per cent since the early Sixties (Figure 1). The constancy of the overall GDP share masks significant changes in its underlying components. Discretionary spending – that is directly determined by Congress via annual appropriations – has declined from 12.6 per cent of GDP in the early Sixties to about 6.5 per cent today (Figure 2). Almost all of that change can be explained by the decline in defense spending. This decline has accommodated a secular increase in mandatory spending – that is mainly determined by factors not within lawmakers' short-term control – such as demographics and business cycles (Figure 3).

As a share of GDP, federal mandatory spending increased from about 4.7 per cent during the early Sixties to 10.6 per cent by 1983, after which has remained in the vicinity of 10 per cent (Figure 3). This increase reflects the growing generosity

Figure 2

Components of Federal Spending – I
(percent of GDP)

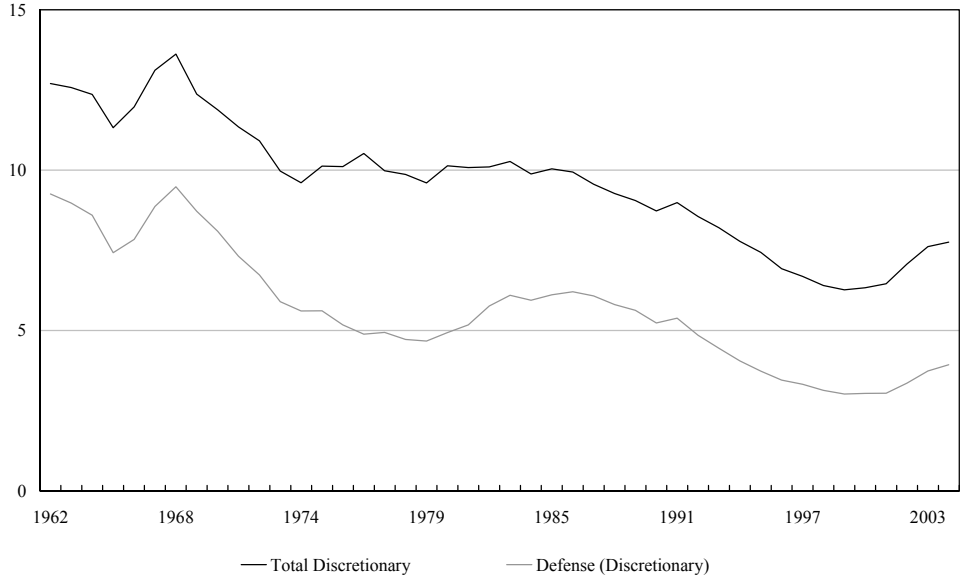
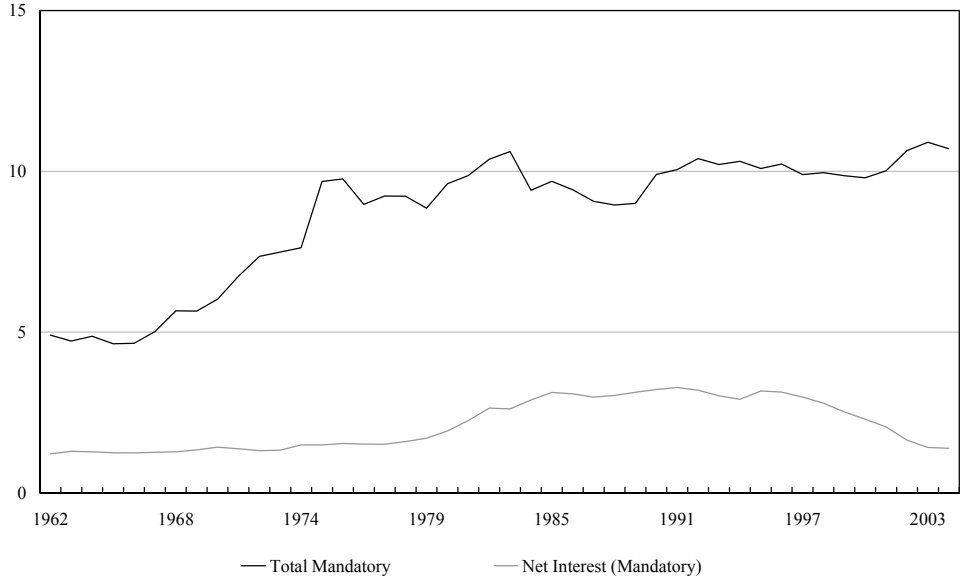


Figure 3

Components of Federal Spending – II
(percent of GDP)



of benefit payments – especially health care payments – and an increasingly longer-lived population requiring retirement and health care support.[4]

The fluctuations in federal payments to individuals over time closely match those in total federal mandatory outlays. Retirement transfers have increased from 3.2 per cent of GDP in 1962 to almost 8 per cent by 2004. Of the 4.7 percentage points increase in retirement transfers, 2.5 percentage points occurred due to growth in Medicare and Medicaid outlays.

Non-retirement payments to individuals have also increased: these transfers provide education subsidies, employment and training services, unemployment insurance, child-care assistance, community development, general welfare payments and so on.[5] The share of non-retirement transfers to individuals has more than doubled from 1.9 per cent of GDP in 1962 to 4.2 per cent today (see Table 6 in the Appendix).

The distribution of spending across retirement and non-retirement programs has shifted in favor of the former: In 1962, retirement transfers were 74 per cent larger than non-retirement transfers whereas they are larger by 91 per cent today. Again, most of this shift can be accounted for by rising federal outlays on retiree health care benefits.

Distributions of federal outlays per capita across male and female cohorts are shown in Figures 5 and 6. These include federal retirement benefits, non-retirement transfers, and non-transfer outlays. The Appendix provides details about the outlay categories and method used to estimate the distributions by age and gender. It is evident that total outlays on young cohorts have not increased significantly during the period considered, 1988 through 2001. Almost all of the increase over time in per capita outlays is concentrated among the oldest age groups. Again, increasing end-of-life health care expenses explain most of this increase.

Figures 7 and 8 contain distributions of federal non-retirement transfers – those outlays remaining after eliminating retirement benefits and non-transfer outlays from total federal outlays. The distribution of non-retirement transfers is considerably more volatile across male cohorts than across female ones. Middle-aged female cohorts receive significant amounts of non-retirement transfers on account of public assistance, child care, and other programs. Finally, for both genders, real non-retirement transfers appear to have increased substantially during the 1988-2001 period.

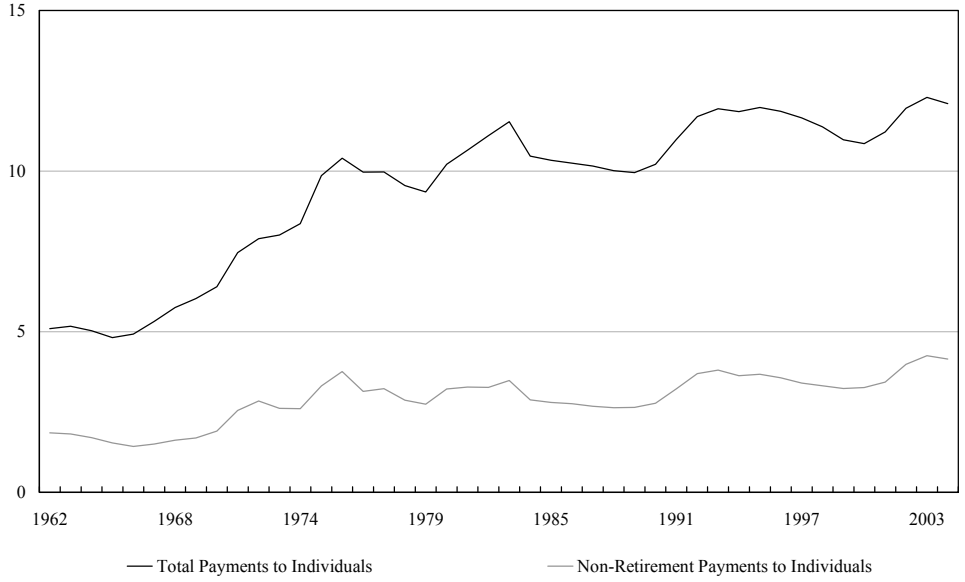
---

[4] Post-retirement life expectancy increased from 67.6 years in 1960 to 77.3 years in 2002 according to the life-tables of the U.S. National Center for Health Statistics.

[5] Non-retirement transfers include all programs except Social Security, Medicare, Federal Retirement (military and civil service), Supplemental Security Income (welfare payments for retirees with inadequate alternative income including Social Security benefits) and Veterans' pensions.

Figure 4

Transfer Payments to Individuals
(percent of GDP)



3. Federal non-retirement transfers: "defensive," "offensive," or "regressive?"

Federal non-retirement transfers have two potential (non mutually exclusive) motivations. One is simply to support the unfortunate and poor through welfare payments and the other is to improve the economy by subsidizing the acquisition of skills and provide services that increase workers' labor force participation. To what extent are government transfers successful in achieving the latter objective? And to what extent do they fail, that is produce undesirable economic outcomes?

This question appears to have drawn relatively little attention in the literature: Most studies focus on the impact of federal investment spending – infrastructure and R&D support – on private sector productivity. However, such federal spending constitutes only 2.5 per cent of GDP in 2004 whereas federal non-retirement payments to individuals (both, direct payments and through grants to State and Local governments) amounted to 4.2 per cent of GDP in the same year.

Diewert (2001) discusses the government's role as a provider of core and non-core services. The latter are defined as services that could be provided by the private sector but are provided by the government instead. Citing Bates (2001), Diewert's list of non-core services includes the provision of higher education, health services and insurance, pensions, income support to the poor, and unemployment insurance. Other services may also qualify – such as child care, nutrition, and housing assistance etc. The provision of non-core services by the government is

Figure 5

Federal Outlays Per Capita By Age, 1988-2001
(males)

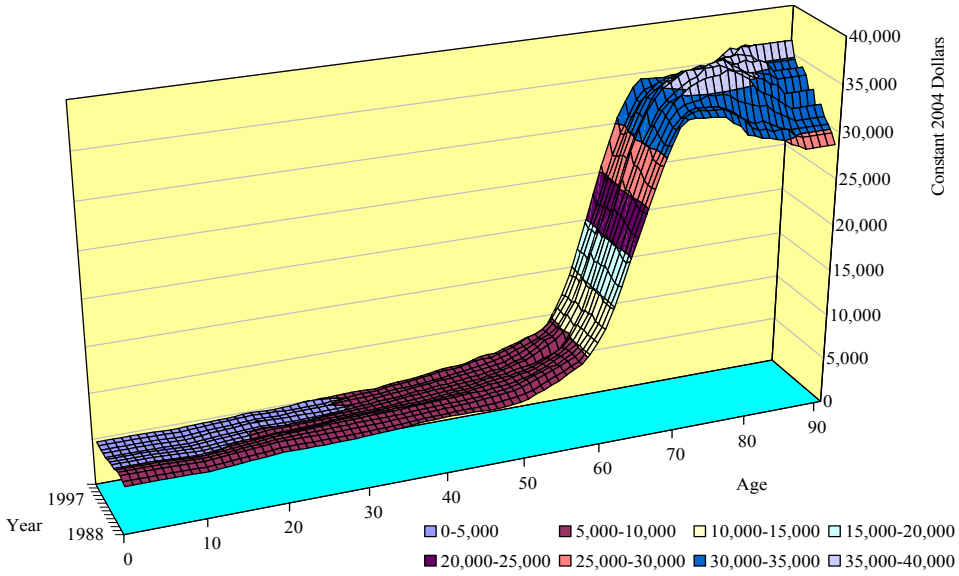


Figure 6

Federal Outlays Per Capita By Age, 1988-2001
(females)

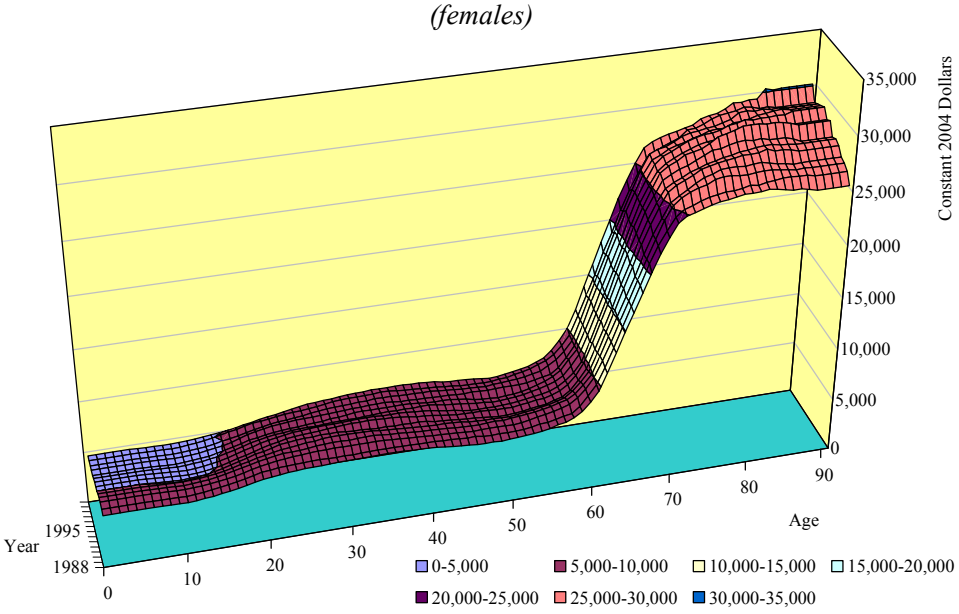


Figure 7

Non-retirement Transfers Per Capita By Age, 1988-2001
(males)

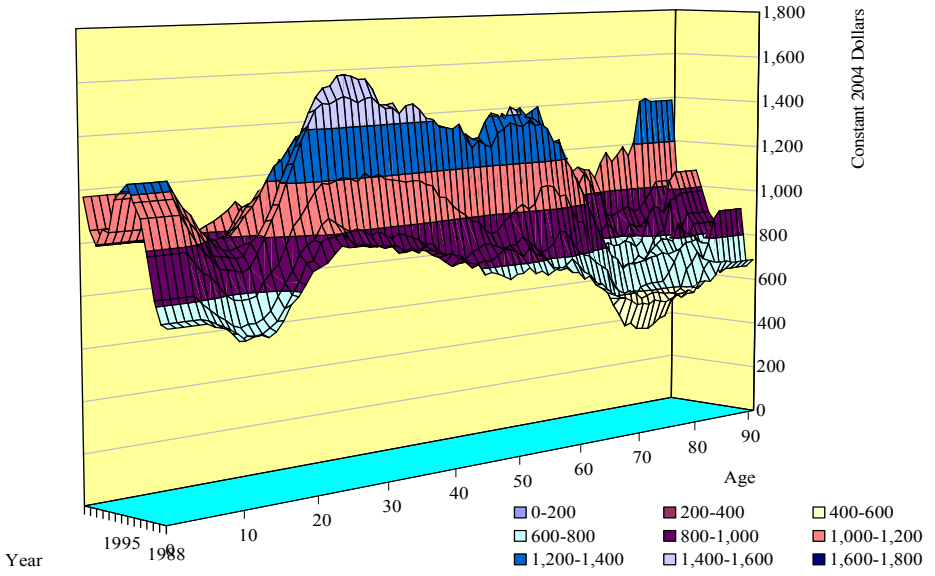
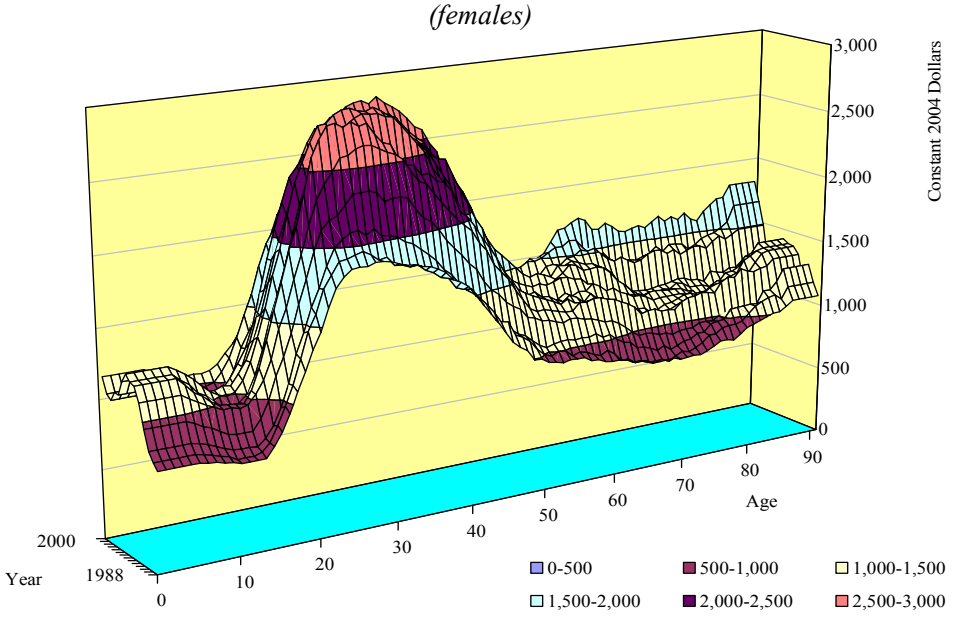


Figure 8

Non-retirement Transfers Per Capita By Age, 1988-2001
(females)



usually justified by citing a significant market failure in their provision. Such justifications usually allude to market failures in the provision of insurance against various kinds of economic risks – mainly reduced living standards from job losses caused by many potential factors – economic recessions, foreign competition, skill obsolescence, inability to work because of domestic constraints such as the lack of a home, child-care costs, lack of transportation, etc.

One could classify the provision of non-retirement transfers by the government under the labels "defensive," "offensive," and "regressive." Defensive transfers are those intended to insure against reduced consumption and living standards from market downturns – to protect the economically unfortunate by providing support during spells of unemployment, inadequate family support, child care for single parents, etc. In contrast, "offensive" non-retirement transfers are those intended to improve the operation of the economy and markets by providing services not adequately provided by the private sector – education and job-training subsidies, employment services, transportation subsidies, youth and adult education programs etc. Transfers of the offensive type should expand labor market opportunities and outcomes for their direct recipients and, if they generate significant positive externalities, for non-recipients as well.

There need not be a sharp dividing line between defensive versus offensive transfers. Indeed, some transfers may operate in both ways: For example, child-care subsidies obviously improve household living standards but may also enable household adults to spend more time at work – increasing their employment and earnings. Unemployment insurance benefits obviously support consumption after job losses but may also enable longer employment searches to improve the employer/employee matches – again improving labor market outcomes.

However, some non-retirement transfers may also exert negative economic effects. Increased dependency on welfare and health-care subsidies may reduce recipients' willingness to work and save. Some may have negative social effects – promoting divorce and out-of-wedlock births. These "regressive" effects may be so severe that they may negate the "defensive" rationale. The perception that this was increasingly the case prompted Congress to pass welfare reform legislation during the mid-Nineties that introduced time limits on eligibility to welfare benefits and required recipients to actively seek employment.

What are the observable effects of non-retirement transfers on future labor market outcomes of recipients? First, more individuals would be protected from the consequences of economic misfortunes – resulting in a lower incidence of poverty. Second, cohorts that receive larger non-retirement transfers could experience less frequent job losses, longer spells of employment, and more rapid earnings growth. Alternatively, recipients may experience the opposite – lower wages, longer spells of unemployment and smaller incomes because they are more dependent on non-retirement transfers.

This paper attempts to analyze whether different types of federal non-retirement transfers exert "offensive," or "regressive" economic effects on

recipients' future economic outcomes – in addition to the "defensive" effect that is assumed to exist by default. To do so, it exploits the cross-cohort variation in such transfers and cross-cohort variation in labor market outcomes – specifically, changes in the fraction of the cohort that does not work, works full-time, and works part-time; changes in average wage of those in the cohort working full- and part-time; and changes in total earnings of those in the cohort working full-time and part-time. The variation examined is in changes in cohort averages over time as computed from different years of CPS data that do not necessarily refer to the same individuals across years.

4. Construction of the cohort dataset from the CPS

The Bureau of Labor Statistic's Current Population Survey is widely used to draw inferences about demographic and economic trends in the United States. The survey's March Supplement files provide information on individual workers' earned and unearned incomes, including income from federal and state transfer programs.[6] Survey participants are asked whether household members received any of several types of public retirement and non-retirement transfers. CPS data on non-retirement transfers include income from veterans' survivors, education, and other benefits, Medicaid benefits, unemployment insurance receipts, family support benefits, TANF, general welfare payments, the earned income tax credit, student assistance, housing assistance, food stamps and other nutrition assistance and child-care assistance. The CPS collected individual level information using a consistent set of questions between 1988 and 2004 – the period selected for analysis.

Household surveys generally contain deficiencies that preclude analysis of the impact of federal transfers on labor market outcomes at the individual or household level. Unlike the Panel Survey of Income Dynamics (PSID) and other panel data surveys, the CPS does not follow the same households each year.[7] Unfortunately, micro-surveys that follow the same households over time do not contain sufficiently detailed information on federal non-retirement income transfers (PSID) or do not cover the entire population (Health and Retirement Survey [HRS] and National Longitudinal Surveys [NLS]) or do not interview each household for a sufficiently long period of time (Survey of Income and Program Participation [SIPP]). Hence, this paper constructs a cohort data set based on the CPS consisting of weighted cohort-specific averages of transfer receipts and cohort-specific demographic characteristics, where cohorts are distinguished by single year of birth and gender.

---

[6] This paper focuses exclusively on federal transfer programs although the authors acknowledge that state transfer programs are equally important and merit a similar analysis. However, implementing such an analysis is beyond the scope and capacity of the datasets available to the authors.

[7] Madrian and Lefgren (1999) have developed computer programs to match a subset of CPS households into a longitudinal data set. However, the matching procedure excludes the years 1994 and 1995 due to revisions in household identifies. This makes the longitudinal length of the individual-level time series of very limited duration.

Very young individuals' labor force experience is relatively much less stable compared to middle-aged individuals. And, those older than 55 face a variety of public and private retirement incentives, which could impart considerable variability in labor market behavior and experience unrelated to non-retirement transfer receipts. Hence, the cohort dataset constructed here includes only cohorts within the age range of 25 through 55.

The CPS asks households a consistent battery of questions on earnings and receipts from federal transfers between 1988 and 2004. The questions on transfer of various types do not distinguish between receipts from federal programs and those from state and local programs. Hence, these data reflect all transfers by function – whether for child care, unemployment benefits, education subsidies, etc. – and from all sources.

To accommodate 5 lagged terms of first differences in the regressions implemented, cohort-specific time series data spanning 10 years (1995 through 2004) are constructed. Hence, the oldest cohort in the dataset consists of those born in 1949 (aged 55 in 2004) and the youngest cohort is of those born in 1970 (aged 25 in 1995).

5. Estimation method

In attempting to estimate the "offensive" and "regressive" effects of government non-retirement transfers, it is necessary to address a simultaneity problem in determining the size of the transfers directed toward any cohort. Specifically, the transfers are determined by cohorts' economic conditions and, in turn, affect that condition. Hence, this paper devises a two-step estimation method by postulating, first, that government non-retirement transfers in period t produce a contemporaneous "defensive" impact but exert "offensive" or "regressive" effects only in period $t+1$ and later. A second assumption is that the existing policy on the size of transfers and economic activity are in equilibrium and only transfers that represent a deviation from that policy (the unexpected component of transfers) would exert positive or negative economic effects.

Under these assumptions, a two-step regression strategy can be employed to isolate the "offensive" or "regressive" impact of transfers on economic outcomes – as described below. Finally, regressions are implemented on annual *changes* in cohort-specific transfers and labor market outcomes to deal with the fact that both types of variables are non-stationary.

The cohort-specific annual change in the average of the specific federal non-retirement transfer to be examined, γ, in period t is first decomposed into two parts: the first component refers to the component of transfer growth undertaken in response to each cohort's "needs" – that is, it represents the "defensive" motivation. This component is estimated using the following regression specification:

$$\gamma i,t = \gamma(\phi i;\ Xi,t \ldots Xi,t-k;\ \omega t \ldots \omega t-k;\ \Gamma i,t \ldots \Gamma i,t-k;\ \gamma i,t-1,\ \gamma i,t-2) + ui,t \qquad (1)$$

Here, i indexes cohort birth years, t indexes calendar years, and k indexes annual lags. In equation (1), $\gamma_{i,t}$ is regressed on cohort fixed effects, ϕ_I; cohort demographic characteristics, $X_{i,t}$; cohort labor market characteristics, $\omega_{i,t}$; contemporaneous changes in other transfers to the cohort, $\Gamma_{i,t}$ (excluding γ); and a second-order autocorrelation component to take account of inertia in the change in federal non-retirement transfers directed at particular cohorts.

The resulting "explained" component of cohort-specific transfer growth, $\hat{\gamma}_{i,t}$, is interpreted as the "defensive" component. The residuals estimated from this regression, $\hat{u}_{i,t}$, are interpreted as the "policy change" or "unexpected" transfer component – the component unrelated to cohort-specific welfare needs or prior expectations regarding the change in $\gamma_{i,t}$. The residual $\hat{u}_{i,t}$, could potentially exert "offensive" or "regressive" cohort economic effects.

The matrix ω includes cohort-specific changes in labor market characteristics: the wage rate for full-time workers; wage rate for part-time workers; the fraction of the cohort not working; the fraction working full-time; the fraction working part-time; cohort earnings for those working full-time; earnings for those working part-time. The matrix X represents cohort demographic characteristics (in levels) such as birth year dummy variables (to capture cohort fixed effects); the cohort's age, age-squared, and gender; the fraction of cohort members who are married; the fraction non-white; the average number of children per family; average educational attainment of family head and spouse; the fraction of families with income below the official poverty limit; the cohort's average effective marginal income tax rate; and variables representing occupational composition according to wage growth across different occupations for those working full-time and part-time (described below).

When implementing the "first stage" regressions specified in equation (1), the changes in labor market variables, ω, are interacted with cohort age and gender variables. Note that current (year t) values of Γ, ω, and X are included as explanatory variables in the regression to estimate the "defensive" component of transfer growth, $\gamma_{i,t}$.

Occupational composition variables are useful as explanatory variables in determining the size of "defensive" government transfers in the "first stage" regression described above. They are also needed to distinguish between the cohort's wage growth and labor market participation variables arising from shifts in occupational composition and from "offensive" government transfers in the second stage regressions described below.

The occupational wage-growth variables for full-time and part-time workers are constructed in 3 steps: first, growth in within occupation average wages is calculated from the CPS for all occupations in each year compared to the previous year. Year-specific average wages and salaries are calculated for all occupations distinguished by 3-digit codes across all workers (regardless of cohort affiliation or age) in each year. Next, occupations are ranked according to the growth in average

wages and each CPS individual who participates in the labor market is assigned a number ρ ranging between 1 and 10 depending on the growth rate decile of the occupation he or she works in. Finally, the cohort average for ρ, $\overline{\rho}$, is taken to represent each CPS cohort's occupational composition. Thus, an increase in a cohort's $\overline{\rho}$ value from one year to the next would reflect a shift of its members from low-growth to high-growth occupations. Cohort averages, $\overline{\rho}$, are used to control for this source of cohort-specific changes in average wage rates when attempting to estimate the effects of past government transfers on workers' productivity and earnings.

The residuals $\hat{u}_{i,t}$ from estimating equation (1) are taken to represent the "offensive" policy components of government transfers. Cohorts with positive values of $\hat{u}_{i,t}$ received more transfers of type $\gamma_{i,t}$ than would be explained by their "defensive" need or expectations based on current economic conditions and past transfer growth. If the unanticipated change in transfers results in better future economic outcomes (higher wage growth, lower fraction non-working, higher fraction working full-time etc.), the transfer in question fulfills an "offensive" function. If government transfers, indeed, improve workers' labor market performance in future periods, lagged values $\hat{u}_{i,t-k}$ should enter significantly and with coefficients of the appropriate sign in "second stage" regressions of the following type:

$$\omega_{i,t} = \omega(\phi_i\ ;\ \gamma_{i,t}\ ;\ \Gamma_{i,t} \ldots \Gamma_{i,t-k}\ ;\ \hat{u}_{i,t-1} \ldots \hat{u}_{i,t-k}\ ;\ X_{i,t} \ldots X_{i,t-k}) + e_{i,t}, \qquad (2)$$

Up to 4 lagged innovations in transfers $\hat{u}_{i,t-k}$ are used in equation (2) because the "offensive" effects of extra transfers could arise after more than just 1 year. Demographic variables, $X_{i,t}$, cohort fixed effects, ϕ_i, and other contemporaneous transfers, $\gamma_{i,t}$ and $\Gamma_{i,t}$, are included as explanatory variables in the second stage regressions. Finally, current GDP growth, the current unemployment rate, the current inflation rate, and a 0-1 dummy for the recession year 2001, are also included as regressors in equation (2) to control for current macroeconomic conditions.[8]

6. Cohort CPS data

Figures 9 and 10 depict cohort-specific profiles of average real earnings by age derived from the CPS between 1993 and 2004.[9] Average earnings trajectories rise rapidly for younger cohorts compared to older cohorts and earnings growth is slower for females than for males. The cohort profiles exhibit much more volatility

---

[8] The macroeconomic variables are taken from the *2005 Economic Report of the President*.

[9] Annual earnings reported are deflated by the Bureau of Labor Statistics' Consumer Price Index for All Urban Consumers.

Figure 9

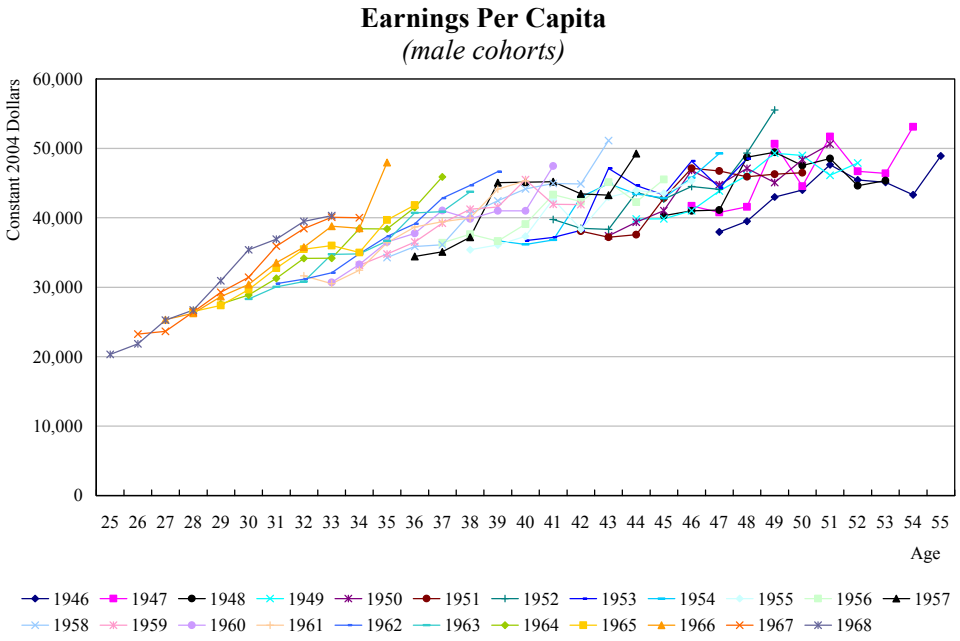
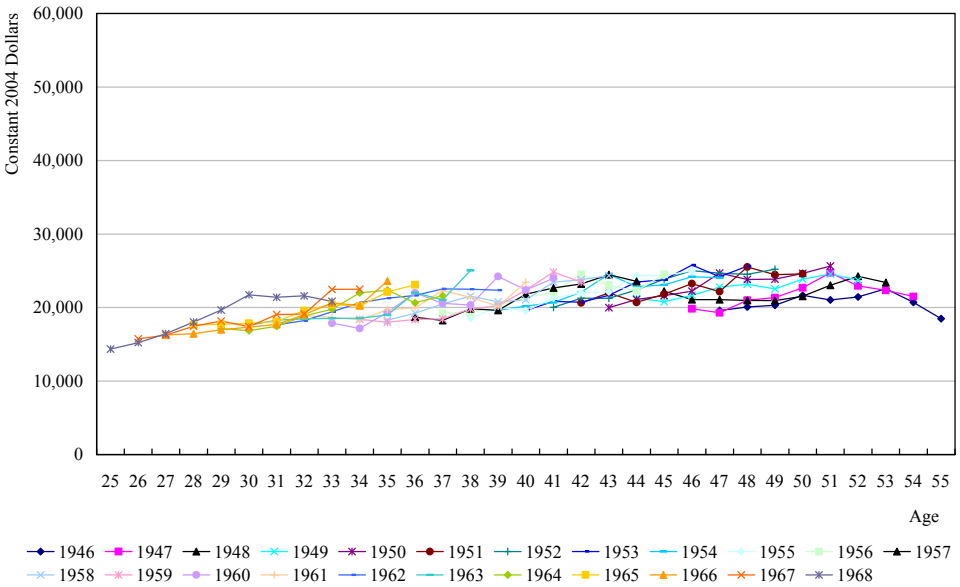


Figure 10



because unlike the data shown in Figures 7 and 8, these profiles are not smoothed (as described in the Appendix). Figures 11 and 12 contain average transfer receipts for the sample of cohort earnings. Transfer levels for females are approximately twice as large for younger females as for younger males. They decline with age for females and almost achieve parity with those awarded to males older than 50.

Figures 13 and 14 depict the fraction of males and females that are not working by cohort. For males, the fraction not working begins to creep up after age 40 and the cohort profiles exhibit considerable volatility, especially at older ages. A much larger percentage of females stay out of the labor force compared to males. However, the fraction of non-working females trends downward until their late Forties and begins to rise for women aged 50 and older.

Figures 15 and 16 report the percentages of males and females in each cohort that work part-time. Younger male cohorts experience steep declines in part-time labor force participation – presumably because many of them migrate to full-time jobs. About one quarter of middle-aged males appear to be part-timers. The percentage of female part-timers is twice that of males and within-cohort cross-year volatility in female part-time labor-force participation appears to be much smaller than that for males.

7. Findings

7.1 Demographic and labor market statistics

Table 1 shows averages across years and ages for all variables – dependent and explanatory – used in the regressions implemented in Tables 2 through 5. Averages of demographic variables appear to accord with well known facts.

Among labor market variables, real earnings growth along cohort trajectories has been very low. Males working full-time experienced zero growth in real wages and growth for females and males working part-time was just 1 per cent per year. The percent of the cohort not working was stable for males and declined by 1 per cent per year for females. For cohorts studies, the percent of those working full-time declined whereas the percent of those working part-time increased between 1995 and 2004.

Among transfers, growth in education and other government transfers per capita has been negative since 1995. In contrast, growth in child-care transfers was quite substantial, especially for females. That is not surprising as new programs for pregnant women and children were initiated during the late Nineties – notably as part of the Medicaid program. Growth in inflation adjusted unemployment transfers is modest for both males and females.

Figure 11

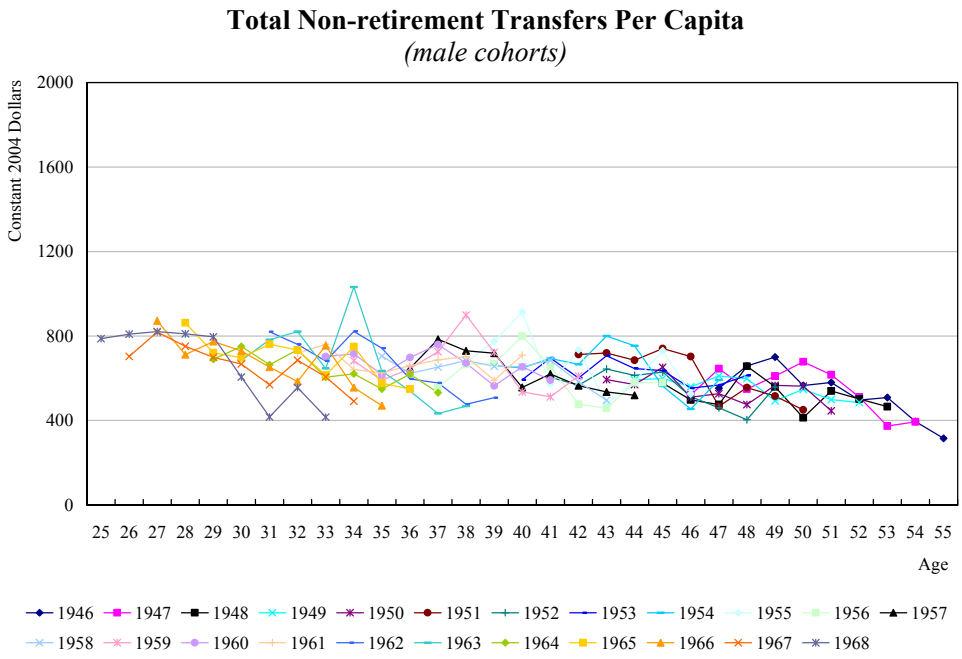


Figure 12

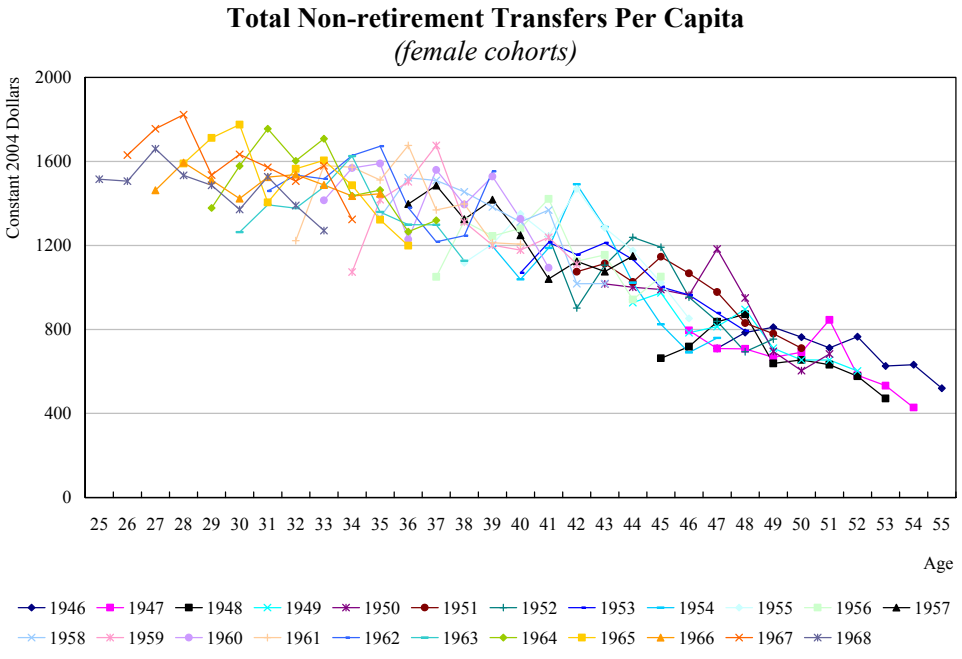


Figure 13

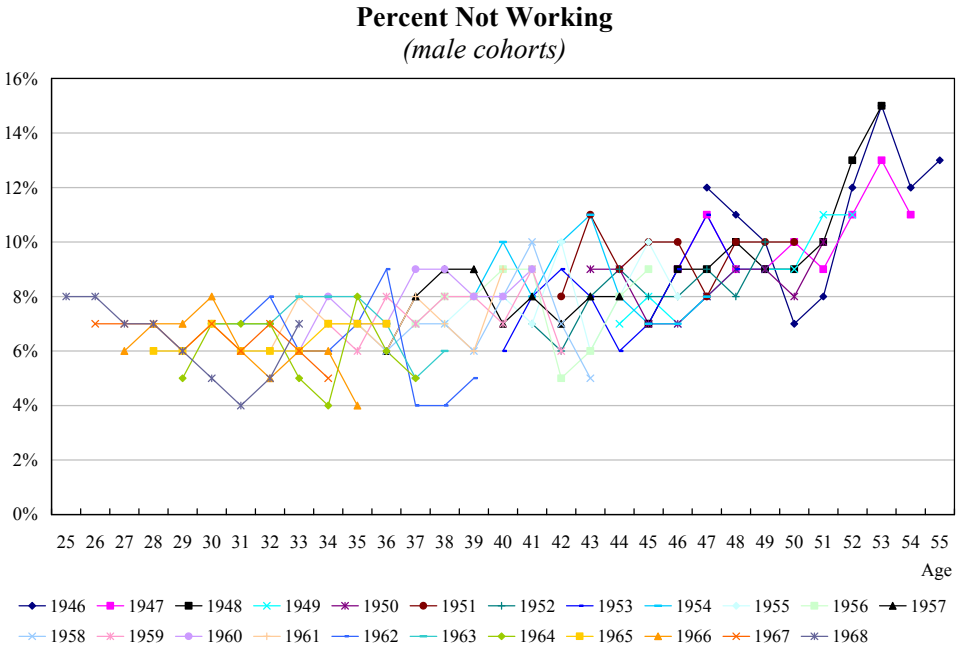


Figure 14

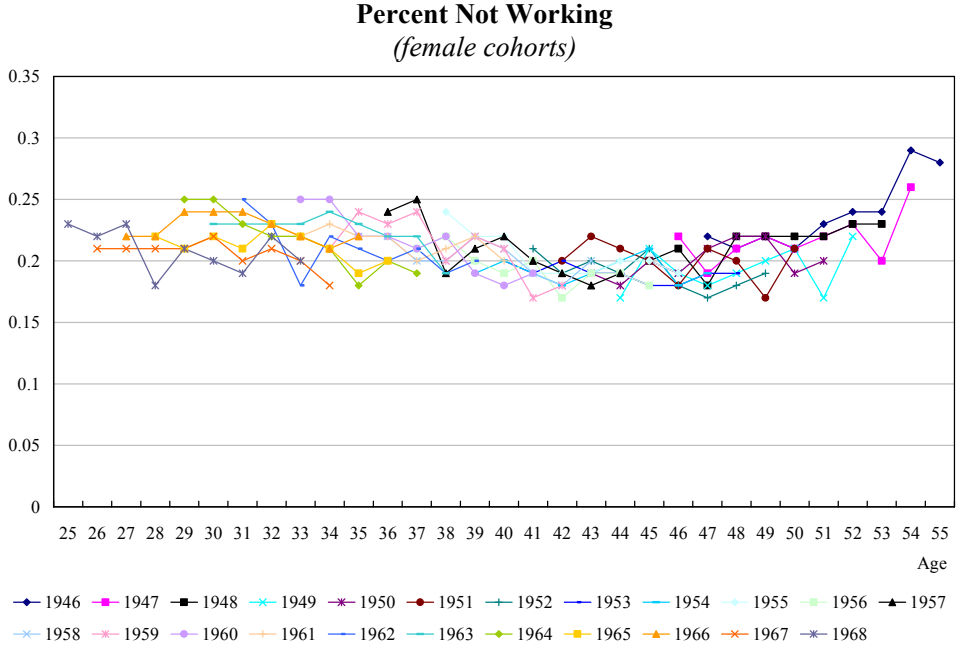


Figure 15

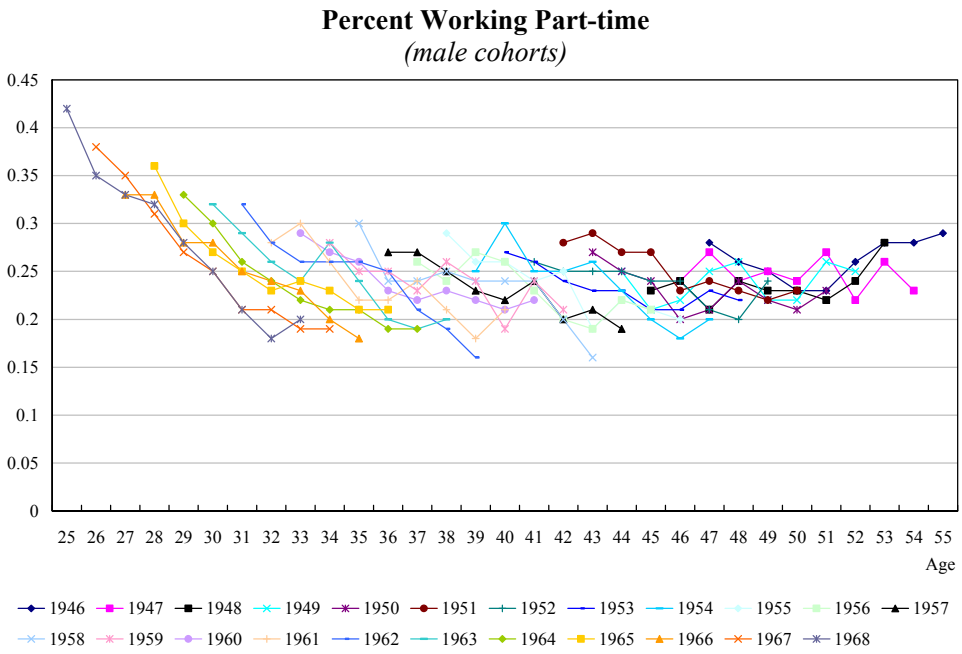


Figure 16

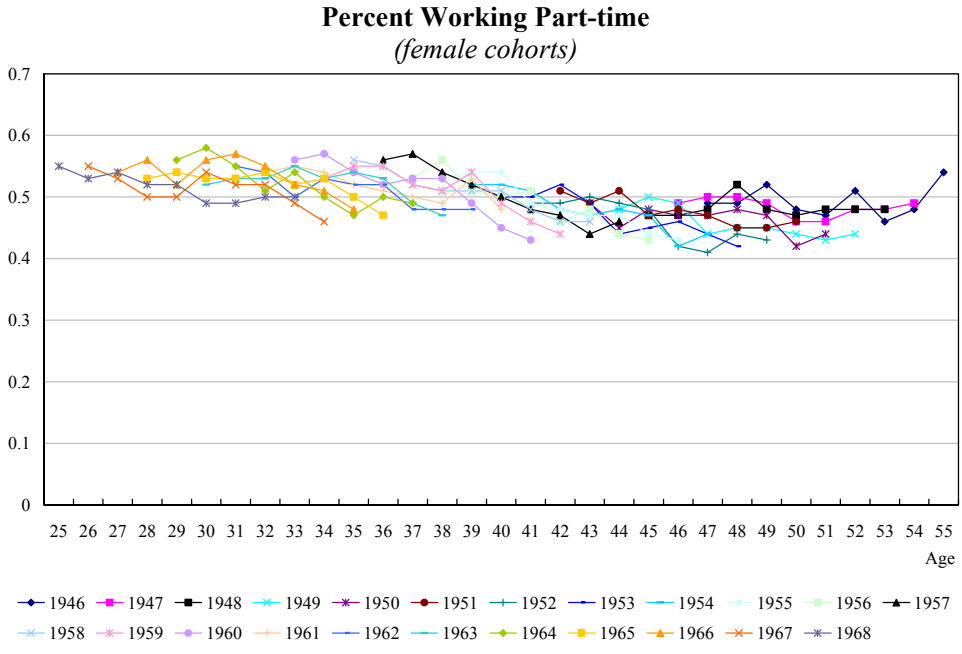


Table 1

Demographic Characteristics

Variable	Males		Females	
	Average Across All Ages and Years	Gross Growth Rate	Average Across All Ages and Years	Gross Growth Rate
Married *(percent)*	65.7	-	66.4	-
White *(percent)*	83.4	-	81.2	-
With Child(ren) *(percent)*	49.0	-	57.5	-
Completed High-School or More *(percent)*	87.5	-	89.0	-
With Earnings <= Poverty Limit *(percent)*	10.8	-	14.3	-
Average Marginal Tax Rate	13.0	-	6.8	-
Wages/week (full-time workers)*	-	1.00	-	1.01
Wages/week (part-time workers)*	-	1.01	-	1.01
Not Working** *(percent)*	-	1.00	-	0.99
Working Full Time** *(percent)*	-	0.99	-	0.99
Working Part Time** *(percent)*	-	1.02	-	1.02
Unemployment Insurance*	-	1.01	-	1.01
Child Care*	-	1.00	-	1.17
Education Benefits*	-	0.99	-	0.98
Other Government Transfers*	-	0.99	-	1.00

* In constant 2004 dollars.
** Growth rate refers to within-cohort growth in variable with advancing age.
Source: Authors' calculations.

7.2 Regression results

Tables 2 through 5 show the results from the second stage regression specified in equation (2).[10] The tables examine the impact of various types of federal non-retirement transfers on five variables of interest: cohorts' average weekly wage rate calculated only for its full-time workers (dwg_ft), the weekly wage rate for part-time workers (dwg_pt), the fraction of the non-working members in the cohort (dnw), the fraction of members working full-time (dft), and the fraction working part-time (dpt). Cohort fixed-effect coefficients are omitted from the tables.

Table 2 shows the impact of unemployment insurance transfers on cohort labor market variables. That is, the $\hat{u}_{\_k}$ (where k indicates the number of annual lags) refer to residuals from regressing cohort unemployment insurance transfers on the explanatory variables specified in equation (1). The Table shows that macroeconomic control variables (gdp growth, the unemployment rate and the

[10] Results from the first-stage regressions are available from the author upon request.

Table 2

Impact of Unemployment Insurance Transfers on Future Cohort Labor-force Outcomes

	dwg_ft	**dwg_pt**	**dnw**	**dft**	**dpt**
Intercept	0.820 ***	3.313 **	0.865	–2.977	4.650 **
Macro GDP growth	0.002	0.007	–0.009	–0.028 **	0.028 ***
Macro unemployment rate	0.005	–0.121	0.029	0.311 **	–0.281 **
Macro inflation rate	0.000	0.016 *	–0.001	–0.059 ***	0.049 ***
Change in other government transfers	–0.039	–0.707	–0.649	–1.516	1.596
Change in other government transfers x sex	–0.002	0.108	–0.081	0.480	–0.338
Change in other government transfers x age	0.001	0.010	–0.001	0.052	–0.038
Change in unemployment benefits	–0.055	0.138	–0.154	0.367	–0.180
Change in unemployment benefits x sex	–0.004	0.003	0.202 *	0.247 *	–0.307 ***
Change in unemployment benefits x age	0.001	–0.002	0.001	–0.008	0.006
Change in education benefits	0.009	–0.134	0.240	–0.250	0.008
Change in education benefits x sex	–0.005	0.008	–0.070 **	0.053	0.011
Change in education benefits x age	0.000	0.003	–0.004	0.005	0.000
Change in child–care benefits	0.013	0.048	0.037	0.035	–0.081
Change in child–care benefits x sex	–0.017	–0.034	0.000	–0.019	0.044
Change in child–care benefits x age	0.000	0.000	–0.001	0.000	0.001
Recession year dummy (2001)	0.005	0.187 *	–0.045	–0.548 **	0.482 ***
Age	0.003	–0.060 *	–0.007	0.109	–0.092 *
Age–Squared	0.000	0.000	0.000	0.000	0.000
Sex	0.022	–0.085	–0.079	–0.682	0.535
Fraction married	0.035	–0.013	0.049	0.013	–0.121
Fraction white	0.006	0.156	0.213	0.139	–0.161
Fraction with children	–0.037 **	–0.012	0.086	–0.083	0.023
Fraction with HS education or more	0.075	0.067	0.870 **	–0.483	–0.348
Fraction Poor	0.069	–0.052	–0.948 **	1.458 ***	–0.431
Average Marginal Income Tax Rate	0.001	0.000	0.001	–0.007	0.006
Occupational wage–growth: Full–time workers	0.005 ***	–0.001	–0.009	0.005	0.002
Occupational wage–growth: Part–time workers	0.002	0.007	0.004	0.004	–0.006
$\hat{u}$_1	**0.004**	**0.011**	**–0.049**	**–0.098**	**0.107**
$\hat{u}$_2	**0.000**	**0.031**	**–0.053**	**0.027**	**0.040**
$\hat{u}$_3	**0.000**	**0.048**	**–0.016**	**0.060**	**–0.025**
$\hat{u}$_4	**0.000**	**0.002**	**–0.080**	**0.048**	**0.048**
Number of observations	266	266	266	266	266
R–Squared	0.307	0.141	0.258	0.324	0.197
Root Mean Square Error	0.008 ***	0.036 **	0.064 *	0.073 *	0.058 *

* = Significant at the 10 percent confidence level; ** = Significant at the 5 percent confidence level; *** = Significant at the 1 percent confidence level.

Table 3

Impact of Education and Training Transfers on Future Cohort Labor-force Outcomes

	dwg_ft	dwg_pt	dnw	dft	dpt
Intercept	0.767 ***	3.235 **	1.438	–3.659	4.524 **
Macro GDP growth	0.002	0.006	–0.007	–0.025 *	0.024 **
Macro unemployment rate	0.009	–0.124 *	–0.008	0.381 ***	–0.293 **
Macro inflation rate	0.000	0.019 **	0.002	–0.064 ***	0.050 ***
Change in other government transfers	–0.042	–0.609	–0.723	–1.891	1.961 *
Change in other government transfers x sex	–0.001	0.084	–0.087	0.629	–0.442
Change in other government transfers x age	0.002	0.008	0.001	0.060 *	–0.047 *
Change in unemployment benefits	–0.057	0.166	–0.136	0.328	–0.159
Change in unemployment benefits x sex	–0.005	0.015	0.211 *	0.243 *	–0.310 ***
Change in unemployment benefits x age	0.001	–0.003	0.001	–0.006	0.004
Change in education benefits	0.008	–0.129	0.270 *	–0.271	–0.004
Change in education benefits x sex	–0.004	0.010	–0.075 ***	0.067 **	0.006
Change in education benefits x age	0.000	0.003	–0.005	0.005	0.000
Change in child–care benefits	0.013	0.052	0.022	0.036	–0.063
Change in child–care benefits x sex	–0.017	–0.033	0.010	–0.021	0.033
Change in child–care benefits x age	0.000	0.000	–0.001	0.000	0.001
Recession year dummy (2001)	–0.001	0.198 *	0.000	–0.625 ***	0.490 ***
Age	0.004	–0.058 *	–0.023	0.126 *	–0.088
Age–Squared	0.000	0.000	0.000	0.000	0.000
Sex	0.023	–0.073	–0.095	–0.834 **	0.664 *
Fraction married	0.043	–0.022	0.047	0.070	–0.174
Fraction white	0.009	0.161	0.197	0.122	–0.143
Fraction with children	–0.040 **	–0.007	0.101	–0.133	0.053
Fraction with HS education or more	0.071	0.084	0.853 **	–0.349	–0.421
Fraction Poor	0.067	–0.058	–0.931 **	1.403 ***	–0.407
Average Marginal Income Tax Rate	0.001	0.000	0.003	–0.009	0.006
Occupational wage–growth: Full–time workers	0.005 ***	–0.001	–0.009	0.009	–0.001
Occupational wage–growth: Part–time workers	0.002	0.005	0.004	0.004	–0.006
$\hat{u}$_1	**–0.002** *	**–0.001**	**0.008**	**–0.011**	**0.003**
$\hat{u}$_2	**0.000**	**0.005**	**0.003**	**–0.019**	**0.012**
$\hat{u}$_3	**0.001**	**–0.002**	**0.013**	**–0.008**	**–0.004**
$\hat{u}$_4	**0.001**	**–0.002**	**–0.007**	**0.021** **	**–0.010**
Number of observations	266	266	266	266	266
R–Squared	0.323	0.138	0.260	0.340	0.198
Root Mean Square Error	0.008 ***	0.036 **	0.063 *	0.072 *	0.058 *

* = Significant at the 10 percent confidence level; ** = Significant at the 5 percent confidence level; *** = Significant at the 1 percent confidence level.

Table 4

Impact of Child-care Transfers on Future Cohort Labor-force Outcomes

	dwg_ft	**dwg_pt**	**dnw**	**dft**	**dpt**
Intercept	0.848 ***	3.657 ***	2.869	–3.366	3.165
Macro GDP growth	0.002	0.004	–0.002	–0.029 **	0.024 **
Macro unemployment rate	0.007	–0.135 *	–0.112	0.315 **	–0.171
Macro inflation rate	0.000	0.019 *	0.019	–0.060 ***	0.035 **
Change in other government transfers	–0.077	–0.786	–0.502	–1.443	1.658
Change in other government transfers x sex	–0.007	0.048	–0.205	0.477	–0.230
Change in other government transfers x age	0.002	0.012	–0.005	0.052	–0.041
Change in unemployment benefits	–0.051	0.249	–0.132	0.385	–0.210
Change in unemployment benefits x sex	–0.004	0.037	0.229 *	0.221	–0.308 ***
Change in unemployment benefits x age	0.001	–0.005	0.001	–0.008	0.005
Change in education benefits	0.008	–0.177 **	0.280 *	–0.314 *	0.024
Change in education benefits x sex	–0.005	0.015	–0.071 ***	0.060 *	0.009
Change in education benefits x age	0.000	0.004 **	–0.005	0.007 *	–0.001
Change in child–care benefits	0.005	0.032	0.113	0.065	–0.137
Change in child–care benefits x sex	–0.015	–0.022	–0.002	–0.048	0.059
Change in child–care benefits x age	0.000	0.000	–0.002 *	–0.001	0.002
Recession year dummy (2001)	0.004	0.201 *	0.156	–0.555 **	0.330 *
Age	0.002	–0.072 **	–0.054	0.107	–0.048
Age–Squared	0.000	0.000	0.000	0.000	0.000
Sex	0.024	–0.082	0.004	–0.617	0.423
Fraction married	0.027	–0.042	0.153	–0.048	–0.160
Fraction white	0.014	0.195	–0.003	0.277	–0.152
Fraction with children	–0.037 *	0.000	0.102	–0.102	0.038
Fraction with HS education or more	0.074	0.079	0.704 *	–0.120	–0.524
Fraction Poor	0.084	–0.128	–0.946 **	1.237 ***	–0.255
Average Marginal Income Tax Rate	0.001	0.000	0.004	–0.010	0.006
Occupational wage–growth: Full–time workers	0.004 ***	–0.001	–0.008	0.008	0.000
Occupational wage–growth: Part–time workers	0.002	0.007	–0.001	0.005	–0.004
$\hat{u}$ **_1**	**0.000**	**–0.002**	**–0.001**	**–0.009**	**0.008**
$\hat{u}$ **_2**	**0.001**	**0.001**	**0.002**	**0.004**	**–0.004**
$\hat{u}$ **_3**	**0.000**	**0.000**	**0.001**	**0.012** **	**–0.009** **
$\hat{u}$ **_4**	**0.000**	**0.002** *	**0.004** **	**–0.003**	**–0.001**
Number of observations	255	255	255	255	255
R–Squared	0.301	0.163	0.300	0.337	0.216
Root Mean Square Error	0.008 ***	0.036 **	0.061 *	0.073 *	0.058 *

* = Significant at the 10 percent confidence level; ** = Significant at the 5 percent confidence level; *** = Significant at the 1 percent confidence level.

Table 5

Impact of Other Non-retirement Transfers on Future Cohort Labor-force Outcomes

	dwg_ft	dwg_pt	dnw	dft	dpt
Intercept	0.854 ***	3.271 **	1.352	–3.320	4.331 **
Macro GDP growth	0.002	0.007	–0.010	–0.022	0.024 **
Macro unemployment rate	0.001	–0.109	0.042	0.321 **	–0.282 **
Macro inflation rate	0.000	0.016 *	–0.003	–0.058 ***	0.048 ***
Change in other government transfers	–0.023	–0.725	–1.416	–1.238	1.967 *
Change in other government transfers x sex	–0.008	0.172	–0.058	0.610	–0.441
Change in other government transfers x age	0.001	0.008	0.014	0.045	–0.045 *
Change in unemployment benefits	–0.053	0.118	–0.202	0.407	–0.174
Change in unemployment benefits x sex	–0.003	0.002	0.168	0.281 **	–0.309 ***
Change in unemployment benefits x age	0.001	–0.002	0.003	–0.009	0.005
Change in education benefits	0.013	–0.159 *	0.255 *	–0.266	–0.001
Change in education benefits x sex	–0.006	0.014	–0.067 **	0.063 **	0.004
Change in education benefits x age	0.000	0.003 *	–0.005	0.005	0.000
Change in child–care benefits	0.011	0.066	0.071	0.028	–0.089
Change in child–care benefits x sex	–0.016	–0.041	–0.031	–0.004	0.048
Change in child–care benefits x age	0.000	–0.001	–0.001	–0.001	0.001
Recession year dummy (2001)	0.009	0.186 *	–0.073	–0.527 **	0.467 ***
Age	0.001	–0.052	–0.010	0.115 *	–0.089
Age–Squared	0.000	0.000	0.000	0.000	0.000
Sex	0.027	–0.144	–0.054	–0.868 **	0.657 *
Fraction married	0.039	–0.024	0.114	–0.020	–0.148
Fraction white	0.016	0.100	0.139	0.125	–0.110
Fraction with children	–0.034 *	–0.020	0.039	–0.069	0.052
Fraction with HS education or more	0.076	0.029	0.795 **	–0.418	–0.333
Fraction Poor	0.065	–0.072	–0.860 **	1.369 ***	–0.438
Average Marginal Income Tax Rate	0.001	0.000	0.003	–0.008	0.004
Occupational wage–growth: Full–time workers	0.005 ***	–0.001	–0.005	0.005	–0.001
Occupational wage–growth: Part–time workers	0.002	0.007	0.003	0.005	–0.006
$\hat{u}$_1	**0.025**	**–0.212**	**–0.524** **	**0.224**	**0.204**
$\hat{u}$_2	**0.017**	**–0.238** *	**0.122**	**–0.418**	**0.218**
$\hat{u}$_3	**0.004**	**0.097**	**0.176**	**0.019**	**–0.094**
$\hat{u}$_4	**0.036**	**–0.012**	**–0.133**	**0.173**	**–0.029**
Number of observations	266	266	266	266	266
R–Squared	0.313	0.160	0.276	0.331	0.195
Root Mean Square Error	0.008 ***	0.035 **	0.063 *	0.073 *	0.058 *

* = Significant at the 10 percent confidence level; ** = Significant at the 5 percent confidence level; *** = Significant at the 1 percent confidence level.

inflation rate and the recession-year dummy variable) enter significantly in explaining cohort labor market characteristics – especially the fractions working full-time and part-time. However, none of the $\hat{u}_{\_k}$ variables are significant. That implies that providing larger unemployment insurance transfers (that are unanticipated) do not result in higher future wages or employment. Thus, such transfers perform a purely "defensive" role.

Table 3 shows the impact of education and training transfers on cohort labor market characteristics. It shows $\hat{u}_{\_1}$ to be a small negative number significant at the 10 per cent confidence level in the regression for wage rate for full-time workers (dwg-ft). That is, providing additional education transfers results in a very small *decline* in the weekly wage after 1 year. In addition, $\hat{u}_{\_4}$ is positive and significant at the 5 per cent level in the regression for the fraction working full-time (dft). Thus, unanticipated increases in education transfers appear to have a small positive impact in the fraction of full-time workers after a lag of 4 years. However, most of the $\hat{u}_{\_k}$ coefficients are not significantly different from zero, suggesting, contrary to popular belief, that marginally higher education transfers would not significantly improve future labor market outcomes.

Table 4 examines the impact of child-care transfers on cohort labor market behavior. Extra child-care benefits appear to have no statistically and economically significant impact on wage rates. They exert a statistically, but not economically, significant positive impact on the fraction of non-working cohort members after a lag of 4 years. Child-care transfers appear to have small and offsetting effects on the fractions of cohort members working full-time and part-time after a long time lag of 3 years. Additional and unanticipated child-care transfers induce cohort members to shift from part-time to full-time work, suggesting the presence of a small "offensive" long-term employment effect.

Table 5 shows that other government non-retirement transfers (the sum of items such as veterans benefits, housing assistance, food stamps, earned income credit, health care assistance, etc.) reduces the fraction of cohort members that remain out of the labor force. The employment impact of government transfers is not surprising. Unexpectedly high government transfers are known to stimulate economic activity. However, as the results show, the impact is short-lived. Curiously, larger than expected government transfers also reduce the weekly wages of part-time workers: the coefficient on $\hat{u}_{\_2}$ is negative and significant at the 10 per cent level of confidence.

In summary, government transfers on unemployment insurance are predominantly "defensive." Those on education exert a marginally "offensive" role but the effects are small and offsetting. Other government transfers exert a significant "offensive" effect on employment, but a "regressive" effect on wage rates of part-time workers.

8. Conclusion

That retirement transfers have grown considerably is well known. Less appreciated is that non-retirement transfers have also increased as a share of GDP. Such transfers could be justified on "defensive" or "offensive" grounds. The former implies that transfers are made to protect and support the needy and those experiencing bad economic outcomes. The latter implies an effort to improve the functioning of the economy and markets. It is not possible to theoretically classify non-retirement transfers as being defensive or offensive in their effects. Indeed, some transfers may exert both types of effects and others may be predominantly "regressive".

This paper attempts to empirically estimate the impact of government non-retirement transfers at the cohort level. It develops a cohort dataset based on the Current Population Survey to study whether non-retirement transfers primarily fulfill a defensive or offensive role in the economy. This analysis bears on the current Social Security debate: if such transfers could be shown to fulfill a significant offensive role, it could be argued that the Social Security Trust Fund operates as an effective storage technology for saving and investing payroll tax surpluses despite the fact that such surpluses are invested in non-marketable Treasury securities and spent on federal non-Social Security outlays. Trends in federal spending during the last two decades suggest that much of the surpluses are being spent on transfers.

Estimates of the impact of federal non-retirement transfers on labor market outcomes at the cohort level suggest that they play a predominantly "defensive" role – that is finance recipients' consumption and maintain current labor market outcomes rather than improve upon them. However, this conclusion should be viewed with caution because, rather than individual or household level data, they are based on cohort averages of economic and demographic variables – data that are considerably noisy. It could also be the case that the results arise from the joint determination of transfers and labor market outcomes due to changes in other unobserved variables. Nonetheless, the results provide little support to the idea that non-retirement transfers improve the functioning of labor markets and the economy: observed "offensive" effects from some transfers on some labor market outcomes are small and appear to be neutralized by "regressive" effects on other economic outcomes.

APPENDIX
THE METHOD FOR DISTRIBUTING FEDERAL OUTLAYS BY AGE AND GENDER

The distribution of total federal outlays and its components is estimated by using data on aggregate transfers from the U.S. Budget (published by Office of Management and Budget), Area Population tables by age and gender provided by the Social Security Administration, and profiles of transfer receipts by age and gender developed from the Current Population Survey's March Supplement files for the years 1988 through 2001. Federal transfers to individuals are divided into 16 categories, of which 14 are distributed by age and gender using CPS profiles and 2, comprising of non-transfer discretionary outlays such as defense, administration, international affairs etc. and other health care outlays, are distributed equally across all individuals. Table 6 shows government spending on individuals and their share in GDP for 1962 and 2004.

Table 6

Federal Retirement and Non-retirement Transfers to Individuals: 1962 and 2004
(percent of GDP)

Federal Outlay Category	1962	2004
Federal Transfers to Individuals	**5.1**	**12.1**
Retirement Transfers	**3.2**	**7.9**
Social security and railroad retirement*	2.6	4.3
Federal employees retirement and insurance*	0.4	0.8
Medicare*	0.0	2.6
Supplemental Security Income	0.0	0.3
Veterans' Pensions and Disability	0.6	0.3
Non-retirement Transfers	**1.9**	**4.2**
Veterans' Survivors, Education, and Other Benefits	0.5	0.3
Medicaid	0.0	1.5
Unemployment Assistance	0.6	0.4
Family Support, TANF, and Other Public Assistance	0.4	0.3
Earned Income Tax Credit	0.0	0.3
Student Assistance	0.0	0.2
Housing Assistance	0.0	0.3
Food Stamps	0.0	0.3
Child Care Assistance	0.0	0.4
Other Health Services	0.2	0.3
Federal Non-transfer Outlays	**13.7**	**7.7**

Each item is distributed using relative age/sex profiles from the Current Population Survey. The age/gender profiles are generated using weighted mean receipt of transfer payments by age and sex in constant 2004 dollars. The Bureau of Labor Statistic's Consumer Price Index for All Urban Consumers (CPI-U) is used to convert nominal amounts into real ones. CPS sample weights for the March Supplement files are used (variable *wgt* divided by 100) to derive weighted averages. The resulting profiles display considerable volatility by age. A centered moving average is used across 9 age categories by gender to smooth the age/gender profiles. The profiles are then normalized to the per capita transfer of 40-year-old males (except for Federal Employee Retirement category, which is normalized to the value for 60-year-old males).

These relative profiles are used to distribute each of the 14 aggregates listed above by age and gender according to the following procedure. Let the $t^i_{a,t,x}$ represent the per capita transfer of type *i* to a person of age *a* and gender *x*, in period *t*. Let $T^i_{a,t}$ represent the corresponding aggregate federal transfer, and let $p_{a,t,z}$ represent the population of persons aged *a* in period *t*. Let $r^i_{a,t,x}$ represent the relative profile value defined earlier for transfer of type *i*. We first derive the per capita value of transfers received by *N*-year-old males, were *N* is the age to which the profiles are normalized. The procedure for doing so is:

$$t^i_{N,t,x} = \frac{T^i_{a,t}}{\sum_x \sum_a p^i_{a,t,x} r^i_{a,t,x}}$$

The transfer per capita for all other ages is simply the product $t^i_{N,t,x} r^i_{40,t,x}$. The sum of all per capita transfers and the per capita values of the equally distributed categories of federal outlays are shown in Figures 5 and 6. Figures 7 and 8 contain the distributions of non-retirement transfers by age, gender, and year.

REFERENCES

Bates, W. (2001), "How Much Government?: Do High Levels of Spending and Taxing Harm Economic Performance?", draft report commissioned by the New Zealand Business Roundtable, Wellington.

Diewert, E.W. (2001), "Productivity and the Role of Government", University of British Columbia, Department of Economics, Discussion Paper, No. 01-13, Vancouver, available at http://www.econ.ubc.ca/discpapers/dp0113.pdf

Dupor, B., L. Lochner, C. Taber and M.B. Wittekind (1996), "Some Effects of Taxes on Schooling and Training", *American Economic Review*, No. 86, pp. 340-46, May.

Gruber, J. and D. Wise (eds). (1999), *Social Security and Retirement Around the World*, Chicago, University of Chicago Press.

Haltiwanger, J. (2000), "Aggregate Growth: What Have We Learned from Microeconomic Evidence?", OECD, Economics Department, Working Paper, No. 267, Paris.

Harberger, A. (1998), "A Vision of the Growth Process", A*merican Economic Review*, No. 88, pp. 1-32.

Harris, R.G. (1999), "Making a Case for Tax Cuts", paper prepared for the *Business Council on National Issues Global Agenda Initiative*.

Harris, R.G. (2001), "Determinants of Canadian Productivity Growth: Issues and Prospects", forthcoming in A. Sharpe and S. Rao (eds.), *Productivity Issues in a Canadian Context*, Montreal, McGill-Queen's Press.

Kesselman, J.R. (1993a), "Squeezing Universities, Students, or Taxpayers? Issues in Designing a Canadian Income-Contingent Loan Program", in S.T. Easton (ed.), *Ending the Squeeze on Universities*, Montreal, Institute for Research on Public Policy.

———— (1993b), "Ends and Means in Recasting UI, Welfare, Training, and Job Programs", in E.B. Reynolds (ed.), *Income Security in Canada: Changing Needs, Changing Means*, Montreal, Institute for Research on Public Policy.

———— (1994), "Public Policies To Combat Child Poverty: Goals and Options", in K. Banting and K. Battle (eds.), *A New Social Vision for Canada? Perspectives on the Federal Discussion Paper on Social Policy Reform*, Kingston (Ontario), Queen's University, School of Policy Studies.

Kneller, R., M.F. Bleaney and N. Gemmell (1999), "Fiscal Policy and Growth: Evidence from OECD Countries", *Journal of Public Economics,* Vol. 74, No. 2, pp. 171-90.

Madrian, B., C. and L.J. Lefgren (1999), "A Note on Longitudinally Matching Current Population Survey (CPS) Respondents", National Bureau of Economic Research, Technical Working Paper, No. 247.

Nakamura, A.O. and W.E. Diewert (2000), "Insurance for the Unemployed: Canadian Reforms and their Relevance for the United States", in L.J. Bassi and S.A. Woodbury (eds.), *Long-Term Unemployment and Reemployment Policies*, Stamford (Connecticut), JAI Press.

Nakamura, A.O. and P. Lawrence (1994), "Education, Training and Prosperity", in T.J. Courchene (ed.), *Stabilization, Growth and Distribution: Linkages in the Knowledge Era*, The John Deutsch Institute for the Study of Economic Policy, Queen's University.