Who Works Later in Life?

Employment Rates and Work Hours Among Older Adults.

The United States in Cross-National Perspective.

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I. Introduction and Background.

Researchers and policy actors, in both the United States and Europe, are now keenly interested in employment at older ages. In both settings, a multitude of overlapping factors drives concerns about older persons' employment. Perhaps most pressing is the current and future financing of public retirement pensions, in the face of declining fertility, increased longevity, and the approaching retirement of the post-war generation. On the whole, the underlying pressures are less acute in the U.S. than in many European countries, partly because current employment rates among older persons (age 50-64) place the U.S. in the top third of OECD countries (OECD 2005). In addition, future employment projections, combined with expected fertility and immigration, mean that the pressure on retirement financing in the U.S. will likely be relatively less severe than in other countries. Nevertheless, the U.S. faces substantial challenges. The old-age dependency ratio in the U.S. (the number of people over age 60 for every 100 persons of working-age) is expected to rise from 19 in 2000 to 35 in 2060 (GAO 2003).

On both continents, the employment of older persons raises other largely economic concerns as well, including the efficient use of skilled labor (Europa 2004; Reday-Mulvey 2005) and the mitigation of labor shortages (EIRO 2001). Early retirement, which is not always a voluntary choice, can also threaten the financial security of the elderly (GAO 2005b; OECD 2005). Clearly, throughout Europe and in the U.S., sustaining and extending older persons' employment will be crucial for managing and alleviating fiscal and economic strains in the coming decades.

Others approach the employment of older persons through the lens of social inclusion (see OECD 2006). In Europe especially, opportunities for employment have been framed as crucial for ensuring the social integration of potentially marginalized populations, including older persons. And, in both Europe and the U.S., discrimination against older workers is recognized as a problematic barrier to their employment. Establishing age discrimination in employment is

difficult, due in part to the complex interplay between age, earnings and productivity (OECD 1998). However, substantial evidence indicates that older persons often face discrimination in employment and earnings (GAO 2003; OECD 2006), raising concerns about the right to equal treatment and equity more generally.

Still others assess employment among older adults from a quality-of-life perspective. Key questions concern the preferences of older persons both in and out of the labor force and the extent to which available employment options are consistent with those preferences. A GAO report summarizes recent research indicating that many older persons remain employed due to "enjoyment of work and a desire to stay active" (2003a:11). In Europe, much of this line of analysis concerns the availability, and feasibility, of options for phased retirement (EIRO 2001; Gillian 1997; Reday-Mulvey 2005; Zaidi et al 2006). Phased retirement, also known as progressive or gradual retirement, refers to the option to decrease work hours as part of the transition from full-time employment to full-time retirement. Zaidi et al (2006) studied retirement transitions across the EU25 countries. Recommending increased options for "flexible and later retirement", they describe phased retirement as enabling "workers to avoid the phenomenon of a 'cliff-edge' fall into retirement that many of them often face".

Phased retirement is attracting increasing attention in the U.S. as well. One recent U.S. study found substantial numbers of American workers approaching retirement age would prefer reduced hours, but are unable to secure feasible "phase-out" options. Among older workers in the U.S., over half express a desire for gradually reducing their hours (GAO 2001) and nearly three-quarters of employers report that phased retirement would be acceptable in their establishments (Hutchens 2003; Hutchens and Papps 2004). However, according to recent research, few employers, especially in the private sector, actually offer it as an option (Penner, Perun, Steuerle 2003).

The availability of reduced-hour work for older workers is, of course, linked to older persons' labor market exits, as the paucity of (high-quality) part-time work causes some to leave

the labor force earlier than they would otherwise (OECD 2005; OECD 2006). In Europe especially, analyses of measures aimed at older workers are often linked to parallel concerns about mothers' employment. Raising the availability of reduced-hour work (and other forms of employment that offer workers flexibility in scheduling) is seen as crucial strategy for increasing the labor supply of these two groups of potential workers (see, e.g., Vaupel and Loichinger 2006).

In both Europe and the U.S., researchers have assessed the interplay between *public policies* and both the supply of, and demand for, older persons' labor. Several aspects of public policy are understood to influence older persons' employment rates and retirement behavior, including public pension rules; the regulation of private pensions; anti-discrimination policies and information campaigns; active labor market policies and employment services targeted on older workers; and government-sponsored financial incentives for employers who hire older persons (for an overview, see OECD 2006).[1] Most of this policy literature concerns measures that affect employment rates and retirement ages, but increasing attention is paid to policy factors that shape workers' work hours (via both supply and demand). In the U.S., for example, barriers arising from the regulation of employer-provided pension plans are seen as limiting American employers' willingness to offer phased retirement (OECD 2005). Burtless and Quinn (2000) observe that the regulation of fringe benefits (via the Employee Retirement Income Security Act, or ERISA) gives employers the incentive to limit part-time workers to half-time work or less, which may prevent some older workers from arranging more attractive options for reduced-hour work.

One conclusion seems especially clear: the design of public old-age pensions (including *de facto* retirement pensions such as unemployment and long-term sickness and disability schemes) have a powerful effect on the labor supply of persons above the minimum pension age (Burtless 2004; Burtless and Quinn. 2000; Blondal and Scarpetta 1999; Gruber and Wise 1998; OECD

[1] Although there is a substantial literature on older workers and public policy, OECD (2006) recently concluded that "Relatively little is known about what countries have been, or should be doing, to improve job opportunities for older workers (2006: 15)."

2006). Crucial pension features include the minimum, standard and maximum retirement age; the gradation of benefit levels with respect to age of retirement (i.e., the relative value of early, standard, and deferred retirement benefits); and the treatment of earnings during years of pension eligibility. Attention to pension design is especially prominent in Europe, where a number of countries enacted pension policy reforms in the 1970s and 1980s to encourage early retirement, primarily to reduce unemployment among younger workers (Kinsella and 1995; OECD 2006; Reday-Mulvey 2005). During those two decades, employment rates among persons over age 50, especially men, fell markedly in many European countries (OECD 2006).

In the 1990s and early 2000s, many European countries aggressively reformed their pension policies, as part of a broader policy effort aimed at reversing the rise in early retirement, and the effects are now unfolding. Between 1994 and 2004, employment rates among older people (over age 50) increased in nearly every European country. However, among men, the decline in participation after 1970 has been only partially reversed, and in most European countries, participation in 2004 remains lower than it was in 1970. The story is sharply different among women, for whom participation in 2004 is at a historical high point throughout Europe and still rising (OECD 2006). The substantially larger increase in older women's employment in recent years accounts for the overall increase (since 1970) in older persons' employment in most European countries. Older women's employment is rising largely in concert with an overall rise in women's employment, with higher employment rates in successive cohorts of women (OECD 2006).

The policy history is the U.S. is different – the sharp U-turn in early retirement policy is more characteristic of Europe – but the U.S. has similar changes in retirement patterns in recent years. Burtless and Quinn (2000) report that, after a long period of decline, the participation rates of older men stabilized and actually increased slightly after 1985. As in Europe, the picture among older women in the U.S. is different from that of their male counterparts. Two offsetting trends have unfolded simultaneously – the declining retirement age of older workers, on the one

hand, and the rising participation of married women overall, on the other. Between 1950 and about 2000, the participation rates of older American women increased.

II. Research Questions and Overview of the Paper

In this paper, which is largely descriptive, we assess the employment patterns and hours worked among older persons (defined in this paper as aged 55 and older) in the U.S., as of about 2000, compared to those of their counterparts in 10 diverse European Union countries: Austria, Belgium, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Spain, and the United Kingdom. In subsequent work, we aim to link older persons' employment outcomes – employment rates and hours worked – across these countries to variation in selected policy features. In particular, we plan to analyze the influence of pension rules, which are known to shape older person's labor supply,[2] as well as the effects of policies and practices aimed at raising the availability of phased-retirement options.[3]

The analyses in this paper extend cross-national research on older persons' employment in two directions. While a considerable amount of research has been done on the *levels* of employment among older persons, and on retirement ages, we focus on the characteristics of older persons who work later in life – a question that has attracted limited attention, especially in cross-national perspective. In addition, we extend our analysis of the employment rates of older persons to consider their weekly work hours as well. There is a large cross-national literature on

[2] Several cross-national studies connect pension rules to variation in employment rates and retirement ages. None, as far as we know, have assessed the impact of pension rules on the hours worked by those older persons who remain in the labor market.

[3] We are in the process of constructing a cross-national policy database, which includes (1) pension rules (and quantified scales capturing those rules) that are understood to influence older adults' employment behavior; (2) measures that affect the demand for older workers (such as anti-discrimination policies); and (3) policies and agreements that grant workers various rights to part-time work and/or phased retirement.

the working time of prime-age workers, but considerably less attention has been paid to assessing older workers' hours across countries (OECD 2006).

The analyses in this paper are organized around four research questions. First, we ask: How prevalent is employment among older adults (55+), comparing older adults to both prime-age workers (age 25-54) in their own countries as well as to older adults cross-nationally? We assess employment levels among adults aged 55-59, 60-64, 65-69, 70-74, and 75+, in the U.S. and in these10 European countries.

Second, we ask: Among those older persons who remain employed after age 55, how many hours do they work per week? Is there evidence of phased retirement (i.e., the reduction of hours in the later years) and, if so, in which countries? Clearly, using cross-sectional data to assess whether older workers reduce their hours later in life is not ideal. Older workers' hours (as well as their employment rates) could differ from those of their younger counterparts due to age differences -- our main interest -- and/or due to cohort or period differences. Hours patterns could further vary across successively older age groups due to the changing composition of those who remain employed. Nevertheless, because the age groupings among the older workers (for example, age 55-59 compared to age 60-64) are relatively narrow, we argue that cross-sectional data allow us to make some inferences about how individuals' work hours change during their later years. At the very least, we can assess directly the extent to which older adults who remain employed work shorter hours than their younger counterparts.

Third, we consider the question: *Which adults* remain in employment later in life? After establishing the levels of employment among older adults across our study countries, we focus on the characteristics of those who remain in employment later in life, relative to the prime-age population (age 25-54). Our core question is a distributional one: does the available evidence suggest that adults work later when they are relatively more advantaged (e.g., living in families, highly educated, working in professional and administrative occupations, and in high-income households)? Or are they more likely to postpone retirement when they are arguably less

advantaged (e.g., living alone, less educated, working in blue-collar, sales/clerical/service occupations, and with lower household income)? Or is the pattern one of bifurcation – with perhaps the least and most well-off more likely to work late in life? While we do not have data that bear directly on older persons' decision-making, we aim to make some inferences about the extent to which older persons who remain at work – relative to prime-age workers and at successively older ages – are more or less economically advantaged.

Fourth, we consider the parallel question: *Which older workers work relatively longer hours?* Again, does the available evidence suggest that longer hours among older workers are associated with economic advantage or disadvantage?[4]

We begin the paper with a concentrated look at our focal case: the United States. We then place our portrait of older Americans' employment and hours in cross-national perspective, comparing U.S. outcomes to those in 10 other high-income countries. In the comparative parts of this study, our primary interest concerns the extent to which the patterns found in the U.S. are evident in other high-income countries. We are interested in whether American employment behavior at age 55 and older – both the levels and the distributional results -- seems to be context-specific as opposed to widespread across high-income countries. The answer to that question will provide a starting point for our subsequent institutional/policy analysis.

In the Section III, we discuss our data and measures. In Section IV, we present our findings about the employment outcomes of older Americans. We start with a general picture then we disaggregate by our key covariates of interest – including family type, education, selected

[4] During the course of our research for this paper, we encountered an unexpected data problem. In most of the LIS datasets, the number of older workers in the samples was quite limited. That is due to the combination of relatively small sample sizes in some of our countries and, more so, to low employment rates. While we have adequate sample sizes to report employment rates throughout the age spectrum, small cell sizes prevent us from concluding much about the characteristics – including the work hours – of those who remain in employment, especially over age 60. Once we disaggregated older workers by educational level, occupation, income quartile, and so forth, many cells included well fewer than 30 observations. As a result, we limit our discussion of the *characteristics* of older workers to only six countries, and, for the most part, we assess the work hours of older workers – our fourth research question -- only in the U.S. case.

job characteristics, and household income; we begin with bivariate analyses and then place those findings in a multivariate framework. In Section V, we place our U.S. findings in comparative perspective. In the final section, we present conclusions and comment on directions for future research.

III. Data and Measures and Analysis Plan.

Data.

For this study, we use data from the Luxembourg Income Study (LIS). LIS is a public-access archive of micro-datasets, now containing 30 countries. The LIS staff collects datasets (mostly based on household income surveys), harmonizes them into a common template, and makes the data available to registered researchers via remote access. The LIS database includes repeated cross-sections from all participating countries, with datasets available for up to five points in time, depending on the country. The LIS datasets include demographic, income, and labor market indicators. The microdata are available at the person- and household-level and records can be linked between levels. Detailed information on the original surveys, including sample sizes, is available at http://www.lisproject.org/techdoc. The original U.S. datasets included in the LIS database are Current Population Survey (CPS) datasets. For this study, we used data from LIS's Wave 5 (Release 1), which is centered on the year 2000.[5]

We selected 10 European Union countries for comparison: Austria, Belgium, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Spain, and the United Kingdom. Our selection of comparison countries was determined by data availability; we chose all European Union countries that include comparable data on work hours. Although all 10 European countries are at similar levels of economic development – the World Bank ranks them all as all high-income

[5] LIS is currently issuing a second release of the Wave 5 data, but it is not fully available yet; it is scheduled for completion in April 2007. Release 2 will include more detailed labor market data. See http://www.lisproject.org/techdoc/bigsplash.htm for a description of the second release.

countries – they are relatively diverse within Europe, representing varied social and labor market policy systems. Five are continental European countries (Austria, Belgium, Germany, Luxembourg, Netherlands); three are southern European countries (Greece, Italy, and Spain) and two are Anglophone (Ireland and the United Kingdom). Unfortunately, we have no exemplars from the Scandinavian countries, due to the limited labor market data available in the datasets from those countries.

Measures.

Both of our core dependent measures – employment status and hours worked – were constructed from the LIS variable PHOURS, which refers to "usual weekly hours." Weekly working time is notoriously hard to compare across countries, due to variability in the components of employment that are included as well as differences in reference periods. As much as possible, we restricted our selection of LIS datasets to those in which the weekly work hours variable captured total usual weekly work hours "at present" – where at present generally corresponds to a recent reference week, including all jobs and including overtime. There were a few exceptions to this. In Germany, the work hours variable reports "actual average hours per week or contractual hours if usual hours not available". In Italy, the variable refers to average hours worked during last year, rather than at present. In the U.S. dataset that is included in the LIS Wave 5.1, we determined that the weekly work hours data were not as comparable as possible with the other countries. For this study, the LIS staff made available additional variables from the original CPS dataset. For the U.S., we constructed weekly work hours, using "hours usually worked last week" (CPS variable *pehruslt*). In the small percentage of cases in the U.S. where respondents' usual hours were missing (generally because their hours vary), we used their actual hours – based on the question "How many hrs did [the person] work last week" (CPS variable *a_hrs1*). Finally, in all countries, we coded persons as "employed" if they reported

positive hours. The residual category "not employed" includes both those out of the labor force as well as the unemployed.[6]

The coding of our main covariates was largely straightforward. To capture family type, we coded individuals as living entirely alone, living in couples with no one else present, or in other complex households, using the LIS variable PMART (person's marital status), combined with data on household size. To indicate educational attainment, we coded individuals into low, medium, and high levels of education, using standard recodes provided by LIS. Based on the ISCED97 classification[7], *low* education corresponds to less than completion of upper secondary education; *medium* education corresponds to completion of secondary education, basic vocational education and/or some post-secondary ("including either shorter vocational courses or programs preparing for courses on tertiary level"), and *high* education includes specialized vocational education, university/college education, and (post)-doctorate and equivalent degrees.

To capture occupational group, we coded employed persons into three occupational categories (using LIS variable POCC, or person's occupation) and one residual category: professional/administrative; sales/clerical/service; blue-collar; and cannot be classified. Unfortunately, this breakdown is highly aggregated. Because the level of detail on occupation varies widely across the LIS datasets, this is the most disaggregated option possible across our study countries. We constructed a self-employment indicator based on a variety of LIS variables, depending on where data on self-employment were located in each dataset; we used LIS variables PTYPEWORK (type or status of worker), PACTIV (activity code) and PLFS (person's labor force status).

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[6] Because the reference period for the Italian work hours data is "last year", rather than "at present", we are likely to overestimate levels of employment in Italy; we return to this point later.

[7] For details, see http://www.lisproject.org/dataccess/educlevel/educdefcountry.htm. LIS does not make available an educational re-code for the U.K because the raw variable reports age at educational completion; we constructed a U.K. recode based on the observed distribution. We coded completing at <= age16 as low education; between 17-20 as medium education; and between 21 and 30 as high education.

We coded all persons into household income quartiles, using the main LIS aggregated household income variable (DPI), net disposable income, which includes total household income, net of income taxes, employee contributions, and social transfers. We adjusted for household size using a common equivalence scale transformation, in which adjusted income equals unadjusted income divided by the square root of household size; that represents the half-way point between no economies of scale and perfect economies of scale. We also constructed a variable called *estimated* hourly wages; this variable is simply annual earnings divided by weekly hours (and then standardized against the estimated hourly earnings of 25-54 year old men who work 30-39 hours/week.) In this variable, due to data limitation, we do not adjust for variation across persons in number of weeks worked in the income year; hence we clearly identify this indicator as an estimate of hourly earnings. Finally, for the multivariate analyses, we constructed a variable called "other income", which refers to household income other than the person's own earnings, as an approximation of "endowed income".

Analysis Plan.

We begin our analyses, in both the U.S. and comparative sections, with bivariate analyses, in which we associate our two key outcomes (employment, hours worked) with several covariates, to give us a first window on who works later in life. We then follow these bivariate analyses with multivariate analyses, to better identify the independent effects of several key variables.

In our analysis of the U.S. case, we fit two sets of country models, one on the likelihood of being employed (using logistic regression) and the other on hours worked (using OLS). Both models are fit separately for men and women and by age group: 25-54, 55-59, 60-64, and 65-69.[8]

[8] In our multivariate analysis of the U.S. we limit the age group to those under age 70, in anticipation of the comparative analysis which follows. Due to sample size limits, our cross-national analyses exclude persons over age 69.

This approach allows us to assess the independent effects of, for example, education, family type, and "other income" on employment outcomes and to consider how those affects differ between prime-age workers and adults in successively older age groups.

The log odds of being employed, Y_e, can be written in the equation:

$$\log(Y_e) = \beta_0 + E'\beta + F\beta + I'\beta + \varepsilon$$

where B_0 is a constant, $E'\beta$ is a vector of education variables, $F\beta$ is the dummy for living alone, $I'\beta$ is a vector of income variables, and ε is an error term. The dependent variable, employed, is coded as yes/no. The independent variables include dummies for low and medium education levels and for living alone. "Other income" is standardized to the countries' own mean in order to be comparable across models, and we include "other incomes squared" to account for the non-linear effects of this variable.

The hours models are run on a restricted sample that includes only employed individuals. The number of weekly hours, $Y_{h,}$ usually worked can be written in the regression:

$$Y_h = \beta_0 + E'\beta + F\beta + I'\beta + O'\beta + \varepsilon$$

where B_0 is a constant, $E'\beta$ is a vector of education variables, $F\beta$ is the dummy for living alone, $I'\beta$ is a vector of income variables, $O'\beta$ is a vector of occupation variables, and ε is an error term. The dependent variable is usual weekly hours. The independent variables include, again, dummies for low and middle education levels, a dummy for living alone, "other income", and "other income squared". In addition, the hours models include occupation dummies – one for working in service and another for working in blue-collar occupation; administrative and professional jobs are the reference category.

In our cross-national analyses, we use a different multivariate strategy. Here we estimate employment models (again, using logistic regression) and hours models (using OLS) using the adult population aggregated into a single age group: age 25-69. Our primary goal in these analyses is to compare age-specific patterns (55-59, 60-64, and 65-59) with respect to employment exits and hours reductions, across countries. The multivariate approach allows us to

compare these employment-age patterns cross-nationally, controlling for (within-country) educational levels, family types, other household income, and (in the hours models) occupation.

IV. Results I -- Older Americans' Employment Rates and Weekly Work Hours.

We begin our portrait of older Americans' work behavior with a snapshot of employment rates and hours worked, by age group – up through and including persons aged 75 and older.[9] Considering men first (Figure 1A), we see that their employment rate is 87 percent among men aged 25-44. A slight dip is evident for men aged 45-54 (to 85 percent); then employment rates fall steadily with age – declining to 55 percent (age 60-64), 29 percent (65-69), 18 percent (70-74), and 8 percent for those aged 75 and over. Women's employment rates follow a similar pattern, except that their employment rates are 5 to 13 percentage points lower than men's. In percentage terms (the ratio of women's to men's employment rates), the gender differential widens, starting at age 55-59, and increases in each successive age group.

The pattern of hours worked among the employed (Figure 1B) shapes up somewhat differently. As with employment rates, men's and women's work hours fall (up through age 70-74) and men's average hours always exceed women's. However, the decline in hours worked in the later years, for both men and women, is less steep than with employment rates and it levels off at the oldest age groups. Figure 1B does indeed suggest that, in the U.S., older workers (on average) reduce their hours as they transition from employment to retirement. For both men and women, workers' hours decline slightly at age 60-64, then more sharply. Among men and women who remain in employment, weekly hours -- relative to prime-age workers -- are about 10 percent less by age 60-64, one-quarter less by age 65-69; and one-third less after age 70.

Family type. How is family type associated with employment rates, across the age spectrum? In Figure 2A, we report men's and women's employment rates, disaggregated by whether they are single (and live entirely alone) or with a spouse/partner (and no one else). We

[9] All of the findings reported in Section III are reported in Appendix Table 1.

see that, among prime-age men, men in couples are slightly more likely to be employed than are their single counterparts (87 compared to 83 percent), and the direction of that differential holds throughout the age spectrum. Among women, the reverse is true. Women who live alone are more likely to be employed are than their coupled counterparts; that pattern holds until the oldest age group (75 plus). Among men, having a partner (and apparently the resource of her domestic labor) raises labor supply. [10] Among women, having a partner depresses labor supply, due to having more income from sources other than their own earnings, as well as the greater domestic work burden. The results in Figure 2A indicate that this pattern holds for men throughout the age spectrum -- and for women until age 75, when the differential basically disappears.

As reported in Figure 2B, the working-time results again shape up somewhat differently. Among men of prime-age men, and up through age 64, again, being in a couple is associated with more paid work – that is, longer work hours -- but that differential is small in prime-age and not consistent after age 65. Why might the effects of family type on men be stable into the later years with respect to employment, but not with respect to hours worked? One possibility is that men in their later years may have more control over whether or not they are employed than they do over their hours, so expected hours patterns may be absent. A second possibility is that as men age (say, to age 65-59), their partners are also aging and the willingness or capacity of these women to provide the domestic labor (that boosts men's hours) may diminish. Among women, the working-time pattern parallels the employment finding; employed women who live alone work longer hours, and that pattern holds throughout the older years.

Education. Employment and hours patterns, with respect to educational attainment, are reported in Figure 3A. Among both men and women of prime-age, employment rates rise

[10] This result – that being in a couple raises men's employment probability – has been established in the research literature on prime-age adults. At least some of this may be because marriage also raises men's earnings. Chun and Lee (2001) find that this differential ("the spouse bonus") is not primarily due to selection effects, i.e., where more "marriage-able" men have traits that make them more employable and/or productive. They attribute it to wives' taken on substantial household labor.

markedly with educational attainment, suggesting (among several explanations) that both men and women tend to work for pay at higher rates as the opportunity cost of not doing so rises. Figure 3A also indicates that this education-employment relationship holds throughout the entire age spectrum, for both men and women. Among those in all older age groups (age 55-59, 60-64, 65-69, and 75+), men's and women's likelihood of employment rises steadily with education.[11]

While the education-employment association is stable across the age groups, the hours pattern shifts in the later years. We see a positive association between education and work hours among men (up through age 64) and among women (up through age 59), but that association dissolves in the older years. For example, among men 65-69 and 70-74, those with medium education work longer hours than do their college-educated counterparts (although the differences are small). Among employed women age 60-64 and 70-74, the least educated women actually work the longest hours, although again the difference is small.[12]

Occupation. Which older workers remain in employment later in life, with respect to occupational attainment? In Figure 4A, we report the occupational distribution of workers across the age spectrum. Here we see that, about one third of prime-age employed men work in professional/administrative occupations – a percentage that holds fairly steady until the oldest age group (age 75+), when it falls to about one-quarter. At the same time, in successively older

[11] These findings are consistent with a recent OECD (2006) report that notes that "generally, participation rates are much lower for older people with a lower level of educational attainment than for those with a higher level (2006:44)." This OECD report concludes that "special measures may be required to address the barriers which less-educated workers face and which may be preventing them from carrying on working (2006:44). Zaidi et al (2006) also find that, in most European countries, among older persons, there is a strong association between education and the probability of being employed.

[12] It is also notable that, among workers under age 60, while hours clearly rise with education, the slope is not steep, meaning that highly-educated adults do not have a monopoly on long weekly hours. Among those under age 60, men with the lowest education still average over 42 hours a week, and the least educated women work only two to three fewer weekly hours than their highly-educated counterparts.

groups of men, the share holding blue-collar jobs falls (starting at age 60-64),[13] while the percentage who work in sales, clerical or service work increases markedly (from 21 percent in prime-age to 30 percent and higher by age 70).[14]

For women, the occupational distribution by age is different. Among women, the percentage working in professional/administrative occupations *falls* steadily after the prime-age years, case dropping by nearly half in the oldest age group – with the entire difference accounted for by the rise in the share of women workers who are in sales, clerical or service occupations. Fully two-thirds of working women over age 65 work in sales, clerical or service jobs, compared to just under half of prime-age employed women.

The association between occupation and hours worked is reported in Figure 4B.The one constant here is that in every age group, for both men and women, professionals/administrators report the longest work hours, in most cases followed by blue-collar workers, and then sales/clerical/service workers. One striking finding here is that, among employed men over the age of 75, those in professional/administrative jobs report remarkably long work hours – nearly 35 hours per week.

Self-employment. Next we consider the age profile of another important feature of employment – whether workers are employees or self-employed. As reported in Figure 5A, for both men and women, the percentage of the employed who are self-employed increases sharply with age. While only 8 percent of prime-age working men are self-employed, by age 64-69 that figure rises to one-fifth, and after age 70 to over a quarter. The large increase in self-employment

[13] Differential working conditions and health status may play a role here. According to OECD (2006), a number of studies have found that "blue-collar workers and less-qualified workers are more likely to retire earlier than white-collar and more highly-qualified workers (2006:53)".

[14] Of course, with cross-sectional data, we cannot discern what underlies these occupational findings – i.e., the extent to which they reflect differential retirement rates by occupation versus older persons' changing occupations later in life. We will pursue this in a future paper, using U.S. and European labor force survey data; these over-time data will allow us to construct synthetic panel data. For now, we can simply report that the occupational distribution is different at different ages.

with age is similar among women, although the sharpest increase sets in later. This increase in self-employment with age may be due to differential retirement rates relative to wage-and-salary workers or due to workers' shifting into self-employment in their later years.[15] Either way, there are reasons to expect that self-employment would rise with age. Workers may find declining opportunities for waged work later in life; at the same time, self-employment may grow increasingly attractive with age as it often affords elements of control (e.g., over work hours and venues) that older persons may prefer in their later years.

And what about the hours worked by self-employed workers? Among the men, those who are self-employed report longer weekly hours than do employees in every age group.[16] However, for women – at least up through age 64-69 – the reverse is seen. Among the oldest women – those over 70 – the pattern reverses and the self-employed report slightly longer hours.

Household income. The distribution of employed persons by household income quartile (adjusted for family size) is shown in Figure 6A.[17] To interpret these findings, we focus on the bottom half of the household income distribution (as that is easy to see in the figure). Among men, the percentage of workers in the bottom half is just under 40 percent for the prime-age workers, then it falls to under 30 percent for those aged 55-59. Although the percentage of employed men in the bottom half rises and falls across the older groups, the percentage of lower-income workers is 5 to 10 percentage points *lower* in all of the older groups compared to the prime-age group. In other words, older male workers are somewhat more affluent than their prime-age counterparts – although the difference is modest.

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[15] In their study of self-employment among older workers, Zissimopoulos and Karoly (2007) conclude that "While some of the rise in self-employment with age is due to later-life transitions into self-employment, most of it is due to differential retirement rates between the self-employed and wage and salary workers."

[16] Among prime-age men, longer hours among the self-employed have been reported in several countries; see Eurostat 2000.

[17] The income cut-offs correspond to all households; i.e.., the quartiles are the same in each age group.

The women's story is different. Among women workers of prime-age, the percentage in the bottom-half of the income distribution is similar to their male counterparts, at 40 percent. However -- except for the 55-59 age group -- the share of working women whose household income is in the bottom half *rises* in the older age groups. Nearly half of employed women in the oldest age group have household income in the lower half of the distribution – meaning that the oldest working women are less affluent than their prime-age counterparts.

We report the association between hours worked and household income in Figure 6B. Among prime-age workers, both men and women, work hours rise with household income – and, in nearly every age group, workers in the highest income quartile work the longest hours. Of course, we do not imply that higher household income (like, say, higher education) "causes" longer work hours; clearly, longer work hours, all else equal, raise household income. On the other hand, workers in lower-income households might work longer hours, relative to their more affluent counterparts, out of economic necessity. Overall, there is little evidence for the latter, although employed men aged 65-69 and 75+ with income in the bottom quartile work two to three hours per week longer hours than those in the second quartile.[18]

Own earnings. Last, in Figure 7, we report the association between estimated *hourly* earnings and weekly work hours.[19] In all age groups – prime-age and older – workers' weekly hours rise with their own hourly earnings. While it is possible, as with household income, that lower (hourly) earnings could lead workers to work longer hours, we find no evidence for that here. Even among the oldest workers, average weekly hours are strongly positively associated

[18] Here, the findings – as with education – also highlight that, among prime-age workers, while higher income is associated with longer hours, the gradient is modest. Prime-age men in the lowest income quartile work nearly five fewer weekly hours than men in the top quartile, but they still average 42 hours per week. Likewise, prime-age women in the bottom quartile work only four fewer hours per week than their highest-income counterparts.

[19] Note that, in the longest-hours category, hourly earnings are not reported for women over age 64 and men over age 70. That is because there were too few observations, in those age-hours combinations, to meaningfully report their hourly earnings.

with hourly earnings. These results do not suggest that lower-earning U.S. workers, in their older years, raise their work hours above those of their counterparts who earn more per hour.

Multivariate Analysis.

Because several of our variables of interest – including family type, education, household income, and profession -- co-vary, we extend our portrait of U.S. employment and hours with a multivariate analysis aimed at identifying the independent main effects of some key variables. Overall, we remain interested in the same question: which factors shape the likelihood of working for pay – and of working longer hours -- and to what extent do those factors vary across successively older age groups, and between men and women? As described in the Analysis section, we first estimated two sets of models– one on the likelihood of being employed and the other on hours worked; both are fit separately for men and women.

The results of the employment models are reported in Table 1. First, we revisit our earlier findings on the association between family type and both employment and hours. The results in Table 1 indicate that the effects of living alone[20] on employment probabilities shape up somewhat differently than what the bivariate results (Fig 2A) indicate. Among American men, we find that living alone is associated with a significantly lower odds of employment in each age group (except 65-69), consistent with the bivariate findings. For the women, however, the bivariate result (the positive association between living alone and employment) is largely reversed. As with men, women (up through age 64) who live alone are *less* likely to be employed than are their coupled counterparts, although the magnitude of the effect is smaller for women than for men. (The coefficient for women age 55-59 is just outside our significance range). These multivariate results suggest that the positive association between being single and being employed seen in

[20] Note that in this analysis, the omitted group is not simply those who live in couples but those who live in couples plus those who live in more complex households. The earlier bivariate results (not shown) revealed that older persons in couples (with no other household members) and those in other types of multi-person households have similar employment and hours patterns. Thus, we combine those two groups here.

Figure 2A is apparently linked to income; women who live alone are likely to have less income from other sources; e.g., they generally lack a spouse's earnings. When income is accounted for, the "living alone effect" (that seemed to boost women's employment) disappears. The oldest age group is a notable exception; among women age 65-69, single women have nearly twice the odds of employment as do their coupled counterparts.

The effects of living alone on employed men's and women's work hours (see Table 2) are similar to what the bivariate results indicated (Figure 2B). Among men, there is no effect in prime-age, but in later years (55-64), living alone is associated with working *shorter* hours (about two hours less per week); after age 65, that effect disappears. Why would the apparent "spouse bonus" diminish in the oldest age group? Again, that may be in part because coupled men's partners may perform less domestic labor as they themselves grow older. Among women, living alone *raises* women's weekly hours in all age groups (although significantly only among prime-age women and those age 60-64). Unlike with employment, the addition of controls for education and income does not reverse the bivariate result that employed women who live alone tend to work longer hours than their counterparts who do not.

Second, we consider the independent effects of educational attainment on the odds of being employed, for both men and women; here, the multivariate results clearly uphold the bivariate results reported in Figure 3A. In every age group, for both men and women, compared to being highly educated, having a middle level of educational attainment significantly reduces the odds of employment[21] and having a low level of education reduces employment odds even further. Table 1 also shows that, among adults age 55 and older, while the effects of having medium education are similar between men and women, the effects of low education depress employment among older adults more sharply among women. Low-educated women's odds of employment in their older years are about 20-40% of those of their highly educated counterparts.

[21] Men aged 60-64 are the one exception. Although, even there, the middle-high differential is significant at p=.055.)

As for the association between educational attainment and hours (see Table 2), the findings again are similar to the bivariate results (Figure 3B). Among men aged 25-54 and 55-59, middle education reduces hours and low education reduces hours even more – although overall the magnitudes are fairly small. The association between education and hour disappears above age 60. The findings for women are similar, except that fairly strong education effects are also present in the oldest age group (65-69) – where middle and low education reduce hours by about five to six hours, compared to more highly educated women in that age group.

Third, we consider the effects of other income.[22] Table 1 indicates that other income significantly depresses the odds of employment – and the magnitude of that effect is fairly similar between women and men and across all age groups. Among men (the oldest group excepted), the effects of other-income-squared are in the same direction – depressing employment -- indicating that men's employment odds continue to decline at higher levels of other income, but they fall less steeply. For women, the effects of income-squared *raise* the odds of employment in every age group, which suggests that – above some income threshold -- the association between women's employment and other income reverses direction and becomes positive.

The association between other income and hours (see Table 2) is remarkably similar to the employment results.[23] For men and women, in every age group, other income is negatively associated with employed persons' working hours. Among the men, at higher levels of income, the negative effect of other income remains, but it weakens, whereas for women – again -- above a threshold, there is a positive association between hours and other income (the oldest age group

[22] Note that this income measure is different from both the household income indicator in Figures 6A and 6B and the "own earnings" variable in Figure 7.

[23] Clearly, there is some endogeneity operating here. While some other income is fully exogenous to one's own employment behavior, the causality can also run the other way. Other family members' may set their hours and earnings in response to one's own employment behavior. Furthermore, some social transfer income is conditioned on current employment and hours. In a future version of this paper, we will pursue this question further by disaggregating "other income" into family members' earnings; social insurance income; and social assistance income.

excepted). One explanation for the reversing association is that men and women who are very highly educated and strongly "work oriented" are often married to one another. This marital homogamy (similarity between spouses) may explain why at the highest levels of other income, there is a positive effect of other income on women's hours. If that other income comes from a high-earning husband, it may be that his characteristics are associated with her own work orientation.

Finally, we consider the relationship between occupation and hours worked. As reported in Table 2, being in a sales/clerical/service occupation (relative to working in professional and administrative positions) results in a negative coefficient on men's and women hours in every age group (except among the oldest women), although the coefficients are not consistently significant, especially among the men. (The lower hours in this occupational grouping are not surprising, given that part-time work is more common in these occupations). For the most part, there is little difference between blue-collar and professional/administrative hours – the one exception being among prime-age men; in this age group, blue collar workers work approximately 1.3 fewer hours per week. These findings are consistent with the bivariate results reports in Figure 4B.

Summary of Main U.S. Findings.

Before we turn to our cross-national comparative analyses, we briefly summarize our portrait of older Americans' employment and hours patterns, both the levels and the distributional findings.

Americans over age 55 work for pay in substantial numbers. In the 55-59 age group, nearly three-quarters of men and over half of women are employed. Among those aged 60-64, employment rates are much lower -- 20 percentage points lower (compared to those aged 55-59) for both men and women; however, over half of men and 40 percent of women work still for pay. Among those 65-69 (the first age group at or above the standard Social Security retirement age), employment rates falls sharply and continues to do so in each successive age groups. Yet

considerable numbers of Americans remain employed into their seventies. Among those aged 70-74, nearly one-fifth of men and one-tenth of women still report working for pay. Over age 75, the women's employment rate falls to only 3 percent, but one man in 10 still works for pay.[24]

Who are these older workers, relative to prime-age workers in the U.S.? Does economic hardship disproportionately push older Americans into employment later in life? Among men, overall, we find little evidence that it does. Like their prime-age counterparts, older men with the highest educational attainment report the highest employment rates (with and without controls for family type and other household income). Furthermore, except among the oldest workers (age 75+), the percentage of employed men in professional/administrative occupations remains about the same as among working men of prime-age. And older employed men – in all age groups above prime-age – live in homes that are modestly more affluent (less likely to be in the lower half of the household income distribution) than those of their prime-age counterparts. That finding extends to the upper portions of the distribution as well; the percentage of working men with incomes in the top quartile is higher in all over-55 age groups than it is among prime-age employed men. On the other hand, our multivariate analysis turns up some evidence that "other income" depresses the odds of employment, which suggests that alternative sources of income may enable some older men to leave employment who might not otherwise. While that association is also found among prime-age working men, it is somewhat stronger in successively older age groups. (It is also possible that this "other income" finding simply reflects the fact that men who leave employment draw more social transfer income.)[25]

The employment results for older women shape up differently. Among women, economic hardship seems to play a somewhat larger role with respect to who works later in life. On the one

[24] As we reported earlier, many of these employed "over 70s" are self-employed. Fully one-quarter of employed men over age 70 are self-employed – nearly three times the rate of prime-age male workers. Similarly, one-quarter of women over age 75 who remain employed are self-employed.

[25] We will pursue this question in subsequent analyses, by disaggregating "other income" into labor-market income, social insurance income, and social assistance income.

hand, like the men, older women with the highest educational attainment are the most likely to be employed -- in prime-age and in every age group over age 55. On the other hand, working women at successively older ages are *less* likely to work in professional/administrative positions and much more likely to work in sales/clerical/service occupations. As we noted earlier, we cannot discern from our cross-sectional data the extent to which women who work later in life shift occupations (perhaps because they have sought part-time work) or if those in typically less-remunerative occupations disproportionately continue to work into their later years; both explanations are likely to be operating. Furthermore, unlike among men, older working women are *increasingly* likely to live in households in the bottom half of the income distribution. The share of working women who live in less affluent (bottom half) households rises steadily in their older years – from 33 percent among those aged 55-59, to 41-42 percent among those aged 60-69, and finally to 45-47 percent among those over age 70.

What about older workers' weekly work hours? First, is there evidence of phased retirement? Our results clearly show that older workers, both men and women, work shorter hours than prime-age workers. Among both men and women, workers' hours decline modestly at age 60-64, then more steeply. Among those who remain working for pay, weekly hours -- relative to prime-age workers -- are about 10 percent less by age 60-64, one-quarter less by age 65-69; and one-third less after age 70 (when the decline levels off). Again, our data are cross-sectional, so we cannot observe work-hour declines for any given worker. So, it is not possible to discern the extent to which workers in shorter-hour jobs stay in employment later in life versus the degree to which those who stay in employment reduce their work hours. Yet, it is clear that older workers in the U.S., on average, work substantially shorter hours than do younger workers.

And what have learned about the characteristics of those who work the longest hours? Is there evidence that economic hardship pushes older workers into longer hours? For starters, unlike our employment results, we find substantially more *similarity* between men and women in their work hour patterns. Women's hours are systematically lower than men's, of course, but the

apparent effects of some key covariates are fairly similar. Among both men and women, we find a positive association between education and work hours among men (up through age 64) and among women (up through age 59), but that association fades in the older years. Our findings (both bivariate and multivariate) do not indicate that older workers with low or medium education work *longer* hours than their more highly educated counterparts. However, we do find that the small but significant association between education and hours, in the prime-age years, does not persist in most of the older age groups. One possibility is that demand-side factors intervene, such that older workers may, on average, have limited control over their work hours, weakening expected supply-side associations.

Other evidence points to the conclusion that more advantaged older workers tend to work the longest hours. Our bivariate findings indicate that in all age groups, prime-age and older, workers' weekly hours rise with their own hourly earnings. As we noted, while it is possible, that lower (hourly) earnings could lead workers to work longer hours, we find no evidence for that. Even among the oldest workers, average weekly hours are strongly positively associated with hourly earnings. Finally, among prime-age workers, both men and women, work hours rise with household income – and, in nearly every age group, workers in the highest income quartile work the longest hours. There are a few exceptions to this result; e.g., employed men aged 65-69 and 75+ with household income in the bottom quartile work two to three hours per week longer hours than those in the second quartile. Nevertheless, overall, we find little evidence suggesting that older workers who work the longest hours, on average, do so out of economic necessity.

V. Results II -- Older Persons' Employment and Hours in Comparative Perspective.

Employment Rates and Hours Across Countries.

We begin our comparative analyses by comparing levels of employment among older persons across our eleven study countries. (See Figures 8A, 8B, 8C, and 8D and also Appendix Table 2). These results clearly indicate both common patterns and marked variation across

countries. On the one hand, in every country, both men's and women's employment rates decline (monotonically) in successive age groups above 45-54. In most countries, rates of employment decline substantially starting at age 55-59 (compared to 45-54). In percentage terms, declines at successive age transitions are even larger, until age 65-59. Then, in most cases, employment continues to decline but the downward shifts grow flatter.

At the same time, levels of employment, within each age group, vary enormously across these countries. Perhaps the most striking finding is that -- with one exception (Irish men aged 60-64) -- American elders in every age group (55+), both men and women, are more likely to be working for pay than are their counterparts in these other high-income countries. That is true among older persons below age 65 (the standard U.S. retirement age) and in the post-65 years as well. At age 55-59, men in most of our comparison countries are 80 to 90 percent as likely to be employed as are U.S. men. By age 60-64, men's rates in these other countries are half or less what they are in the U.S., with four exceptions: Greece, Spain, the U.K. and (as mentioned) Ireland. Above age 65, men's relatively high employment rates in the U.S. become increasingly exceptional, with only Ireland approaching U.S. levels. Among women, the U.S. European gaps – in percentage terms – are even larger. In the three oldest age groups, across these European countries, women's employment rates are, at most, one-third what they are in the U.S. [26]

We next present average weekly hours worked among those who remain employed.[27] (See Figures 9A, 9B, 9C, and 9D and Appendix Table 2). Clearly, across these countries, the widespread pattern of declining employment rates is *not* matched by a pattern of consistently declining hours. When we compare men aged 45-54 with those aged 55-59 , we find that hours are shorter hours among the older group in only four out of eleven countries – the U.S., the U.K.,

[26] Employment rates in Italy may be biased upwards, compared to the other countries, due to the longer reference period associated with the working time variable in this dataset.

[27] Due to small cell sizes in most countries, we limit these graphs to adults below age 64. Where meaningful, hours worked by adults age 65 and older are presented in Appendix Table 2.

Ireland, and the Netherlands – and the differences are small (about two hours or less). When we compare men aged 60-64 with those aged 54-59, we see more evidence of declining work hours with age. In six of the eight countries in which we can make this comparison, men's hours are shorter in the older group (the exceptions are Ireland and Spain), and the differences are fairly substantial -- ranging from two to six hours. The story is largely similar among women. In fewer than half of the countries do we see an hours decline between 45-54 and 55-59. When we compare women aged 60-64 with those aged 54-59, as with the men, we see much more evidence of declining hours with age. In five of the seven countries in which we can make this comparison, we see declines between 55-59 and 60-64. Again, the declines at this age transition are substantial, ranging from two to three hours (in Greece and the U.S) to up to five to eight hours (in the U.K., Germany and the Netherlands).[28]

These results also indicate that, when we turn our attention from employment rates to hours worked, the U.S. is much less exceptional. For example, in the eight countries where we can reliably report average hours among men aged 60-64, American men's average hours -- just over 40 per week -- fall in the middle of the range observed. Employed American women in that age group report working, on average, 34 hours per week -- which is relatively high but less than the average reported by their Italian and Spanish counterparts.

Multivariate Analysis.

Next we consider whether these age-specific patterns (55-59, 60-64, and 65-59) hold up across countries after we control for (within-country) variation in prime-age employment levels – as well as in educational levels, family types, other household income and (in the hours models) occupation.

[28] These results are not especially surprising. Much prior research establishes that, among the European countries, part-time work prime-age women is particularly prevalent in these three countries: the U.K., Germany, and the Netherlands.

First we consider the U.S. results. In the U.S., compared to prime-age men, and net of these other controls, the odds that men are employed are about half the prime-age level at age 55-59, just over a quarter at age 60-64, and about one-seventh at age 65-69 (see Table 3). Among American women, the pattern is similar except that the drop-offs at the first two age transitions (from prime-age to 55-59, and from 55-59 to 60-64) are somewhat flatter. The odds that American women are employed are nearly three-quarters that of the prime-age level at age 55-59, about a third at age 60-64, and (like the men) about one-seventh at age 65-69.

The cross-national picture is largely consistent with our earlier bivariate results. In all of these comparison countries, and among both men and women, employment rates fall consistently with age. Table 1 also indicates that, in cross-national perspective, older Americans have exceptionally high employment rates. Consider adults aged 55-59. In this age group, among both men and women, the odds of being employed (compared to prime-age adults) are greatest in the U.S. – with one exception, men in the U.K. – and the cross-national differentials are substantial. The results in the 60-64 age group are similar; among both men and women, the odds of being employed (compared to prime-age) are again greatest in the U.S. – again, U.K. men are an exception – and the cross-national differentials are even larger. This pattern (minus the U.K. exception) holds for those age 65-69 as well.

Table 4 confirms that hours reductions in successive age groups are much less systematic across countries. In the U.S., we do see a clear pattern of decreasing hours. Compared to those in prime-age (and net of these other controls), employed men work 0.6 fewer hours per week at age 55-59; 3.5 fewer hours at age 60-64; and nearly eight fewer hours at 65-59. The results for American women are similar, except that no significant reduction is seen until age 60-64; American women aged 65-69 work almost 10 fewer hours per week than do their employed prime-age counterparts.

The pattern of hours reductions clearly varies across countries, and associations between hours and age are often of *larger* magnitudes in European countries than they are in the U.S.,

especially at the older ages. At age 55-59, men report significantly fewer hours (compared to prime-age men) in only four countries, once these controls are in place. Among women in this age group, hours reductions are evident in about half of these countries (the U.S. not among them). At age 60-64, men report fewer hours in six of these 11 countries -- 3.5 fewer in the U.S. and Ireland, and five to seven fewer hours elsewhere. Among women, likewise, hours reductions are reported in five countries, and in some cases the reductions are quite large (e.g., 10 to 11 hours in the Netherlands and Austria). In the oldest age group reported in Table 4, age 65-69, hours reductions (compared to prime-age) are not seen everywhere but, where they are reported, they vary considerably and in a number of European countries the reductions are very large. Compared to prime-age men, men aged 65-69 work (on the low end) eight fewer hours in the U.S. (and in Greece and Italy), as many as18 fewer hours in the U.K. and Germany, and 25 fewer hours in the Netherlands.[29] Likewise, among women, those aged 65-69 work substantially fewer hours than those in prime-age, ranging from (on the low end) 10 in the U.S. to as many as 28 in Luxembourg.[30]

Who Works Later in Life?

In our final empirical analysis, we extend our earlier assessment -- of who works later in life -- to our comparison countries in Europe. As noted earlier, when we carried out descriptive analyses of employed persons over age 55, and especially over age 60, we hit unexpectedly small cell sizes in several countries. In most countries, once we disaggregate older workers by

[29] It is interesting that these three countries – the U.K., Germany, and the Netherlands -- are three countries well-known for having large part-time labor markets. Mothers, especially, have high rates of part-time work in these countries and part-time hours tend to be short (Gornick and Meyers 2003).

[30] That said, we know from our descriptive work that the number of observations of employed women age 65-69 in Luxembourg is small.

education, family type, income quartile, and so on, we can say little about their characteristics, including their work hours. In this section, we report findings about the distribution of employment at older ages, restricting ourselves to a few key variables (education, occupation, self-employment, and occupation) and to cells of adequate size. Except for the education-by-age-group results, we limit our reported findings to five comparison countries, where the sample sizes hold up: Germany, Greece, the Netherlands, Spain, and the U.K. – and to adults below age 65.

We reported earlier that, in the U.S., among both men and women and in all age groups, employment rates rise consistently with educational attainment. That pattern is widespread but not universal, especially when we compare low and medium educational levels (see Figures 10A and B). For example, in Belgium, among men 55-59, low-educated men have substantially higher employment rates than medium-educated men; the same is found among men in Greece aged 65-69. Nevertheless, in all countries and in all older age groups, highly educated men report the highest employment rates. Among women, the results are similar: a positive employment-education association is evident in many countries, but not in all cases. For example, among women aged 60-64 in Belgium, Luxembourg, and especially in Greece, employment rates among low-educated women are higher than among medium-educated women. At the same time, nearly everywhere, and in all groups, the most highly educated women report the highest employment rates; Belgian women age 60-64 are an exception.

Next, we consider the occupation composition of the older workforce (see Figures 11A and B). Our analysis of the U.S. found that in successively older age groups (up through age 60-64), men are about equally likely to be employed in professional/administrative occupations; sales/clerical/service work becomes more common at older ages, and blue-collar work moderately less common. As reported in Figure 11A, that pattern is by no means universal.[31] In Germany,

[31] Unfortunately, occupation is missing in a number of cases in several datasets, which clouds our observations. In the next version of this paper, we will explore these missing cases in more detail. We control for missing occupation in all of the multivariate analyses.

men's likelihood of being a professional/administrator seems to rises sharply with age (the missing cases introduce some uncertainty), while in the U.K., it falls. Even more striking, the decline in the blue-collar share with age (reported in the U.S.) also seems to be evident in Germany, but the reverse pattern is present in the rest of the countries. In Greece, the Netherlands, Spain, and the U.K., employed men aged 60-64 are more likely to work in blue-collar occupations than are prime-age men and, overall, the magnitude of the difference is substantial.

The occupational picture among older working women, reported in Figure 11B, as among the men, is very varied among these six countries. As we noted earlier, in the U.S., women in older age groups are less likely work as professionals or administrators and more likely to work in sales/clerical/service occupations. In most of these countries, as in the U.S., the share of women working in professional/administrative occupations falls with age (especially among women aged 60-64). However, in the U.S., while the counterbalancing shift is towards sales/clerical/service work, in most of these countries (the U.K. excepted) the share of women in blue-collar work rises with age, especially in the oldest age group. The Netherlands reports an entirely different pattern; employed women aged 60-64 are substantially less likely (than prime-age women) to work as professionals/administrators, and much more likely to work in sales/clerical/service occupations.

In Figures 12A and 12b, we report the composition of the older workforces in these six countries with respect to self-employment. For the most part, the U.S. pattern – modestly rising rates of self-employment with age[32] – is seen throughout these countries. Among the men, rates of self-employment are exceptionally high in the two southern European countries included here, Greece and Spain. Moreover, the rate of self-employment rises dramatically with age in these countries, especially by age 60-64 -- doubling in Greece and nearly tripling in Spain. The cross-national story among women is similar, although the levels of self-employment are generally

[32] Recall, from Figure 5A, that self-employment rises more sharply in the U.S. at later ages.

lower. Among women, self-employment again plays an especially prominent role in the two southern European countries – by age 60-64, more than doubling in Greece and tripling in Spain.

Finally, we revisit the distributions of workers by age and income quartile (see Figures 13A and B). As we reported earlier, among men, older American workers are generally more affluent than prime-age workers. Our cross-national findings reveal that that pattern is by no means universal. Among men, it holds strongly in Germany, where 38 percent of employed prime-age men live in households in the bottom half of the income distribution compared to only 15 percent of their counterparts aged 60-64. Nearly the exact opposite in found in Greece, where 39 percent of employed prime-age men live in households in the bottom half of the income distribution – a figure that rises to a remarkable 52 percent among their 60-64 year old counterparts. In the remaining countries, the patterns vary, falling between these extremes.

Among women in the U.S., we found a pattern of declining affluence among successively older groups of women workers, although the increase is most evident above age 60-64 (outside the range of our cross-national comparison). Although there is considerable variability across these six countries, we see a general pattern of falling affluence among older women workers. For example, the share of working women in the bottom half of the income distribution rises -- from age 55-59 to 60-64 – in all of these countries, with the exception of the U.K. The percentage of employed women in the bottom half of the distribution rises in Germany (from 31 to 34 percent), in Greece (from 47 to 75 percent), in the Netherlands (from 21 to 59 percent), in Spain (from 33 to 38 percent), and in the U.S. (from 33 to 41). Clearly, the direction of these shifts is fairly common, but the magnitude varies dramatically.

Summary of Main Cross-National Findings.

The most striking finding of our comparative analysis is the exceptionally high employment rates evident among older Americans -- both men and women -- compared to their counterparts in ten diverse European countries. While the employment rate of prime-age men in

the U.S. is not particularly high in comparative perspective, a marked U.S.-Europe gap is evident among older workers. Among women, the U.S. employment rate is relatively high in the prime-age years (that result would be attenuated if the Scandinavian countries were included) but American women's employment rates become much more exceptional after age 55. Against this backdrop of difference, though, is considerable commonality: in all of these countries, both men's and women's employment rates decline in successive age groups above 45-54.

The results with respect to working hours among those who remain employed are much more varied – and the U.S. is much less exceptional relative to these comparison countries. In a number of countries, including the U.S., hours tend to fall with age. But the pattern of hours reductions varies dramatically countries, and associations between hours and age are of larger magnitudes in several European countries than they are in the U.S. That is especially true at older ages – suggesting that phased retirement may be more common, and/or hours reductions may be larger, in countries other than the U.S.

The distributional picture is very varied – indicating that the U.S. findings reported here are, to a large degree, context-specific. The education findings are a partial exception to that, as we find considerable commonality across these countries; with some important exceptions, employment rises with education nearly everywhere. Apparently, in a number of countries, both men and women tend to be more likely to work for pay -- throughout their older years -- as the opportunity cost of not doing so rises. That said, the employment-education association could have multiple causes and those causes may vary cross-nationally.

We close our empirical analysis with one of the questions that we started with: Does the available evidence suggest that adults work later when they are relatively more advantaged or are they more likely to postpone retirement when they are arguably less advantaged? Here, we find a remarkable degree of variation, even across this relatively small number of countries. The high degree of cross-national diversity in our household income findings underscore that the factors that push and/or pull older persons into employment vary – between men and women and, surely,

across countries. The U.S. pattern, where affluence tends to rise among successively older working men is not a universal one; clearly, context matters. In Greece, for example, 39 percent of employed prime-age men live in households in the bottom half of the income distribution, a figure that rises to 52 percent among 60-64 year-old workers. We found more commonality among women. Among women, we find a general pattern of falling affluence among older women workers; the share of working women in the bottom half of the income distribution increases -- from age 55-59 to age 60-64 – in five of the six countries included in this analysis.

VI. Directions for Future Research

In subsequent work, we will extend these micro-level analyses in a number of ways. First, our bivariate and multivariate analyses clearly show that household income matters; in our next set of analyses using the LIS data, we will disaggregate household income into (for starters) labor market income, social insurance, and social assistance – so that we can begin to disentangle the complex interplay between older persons' employment behavior and their household income packages.

Second, we will continue our analyses of older workers' weekly work hours and will extend those analyses to a larger number of European countries and to trends over the past two decades. We can do that using microdata from the European Labour Force (LFS) surveys, which have substantially larger sample sizes than do the LIS datasets.[33] While the LFS data will not allow us to consider either household income or earnings, they will allow us to assess, in detail, older workers' educational levels, and their family composition, as well as multiple job characteristics (including occupation, industry, and enterprise size).

[33] In 2005, Eurostat began releasing anonymized microdata files based on the LFS. However, the application and approval process is a long and laborious one for non-Europeans. We recently acquired these microdata.

Third, we have not yet addressed the role that health and disability status play in shaping both older adults' employment decisions and the demand for their labor. The association between education and employment at older ages among both women and men, and the occupational and income shifts among older workers as well, may be picking up variability in physical capacity. In future work, we will consider the effect of health and disability status on employment and hours outcomes and analyze how those effects vary across countries.

In addition, in future work, we will link this extensive cross-national variation in employment rates and hours worked – both levels and distributions – to country-level policy and institutional variables. As noted, while considerable work has demonstrated that pension policy features influence the effective retirement age, virtually no research has linked pension (or other income transfer) policies to hours worked among those older persons who remain employed. Furthermore, there has been comparatively little research on the impact of policies and institutions that shape the demand for older workers' labor – including anti-discrimination measures and financial incentives targeted on employers who hire older workers. Finally, we have been gathering detailed data across these countries on policies that enable – or even encourage – older workers to opt for phased retirement. In our subsequent work, we will assess the extent to which these policies seem to be shaping the practice of phased retirement.

There is no question that the study of older workers' employment and hours will gain in prominence across Europe and in the U.S. in next decade and beyond. The issues are far-reaching, spanning demographic, sociological, economic, political and policy questions, and undoubtedly more and more policy-makers, employers, and employee groups will turn their attention to aging and employment. The recent OECD synthesis report -- "Live Longer, Work Longer" (2006) -- emphasized the complexity and breadth of the stakeholders involved: "Of course, the bottom line is that population ageing is both a challenge and an opportunity... Seizing this opportunity will require the co-operation of government, employers, trade unions and civil society to adopt and implement a new agenda of age-friendly employment policies and practices."

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Figure 1A
Employment Rates by Age and Gender
United States 2000

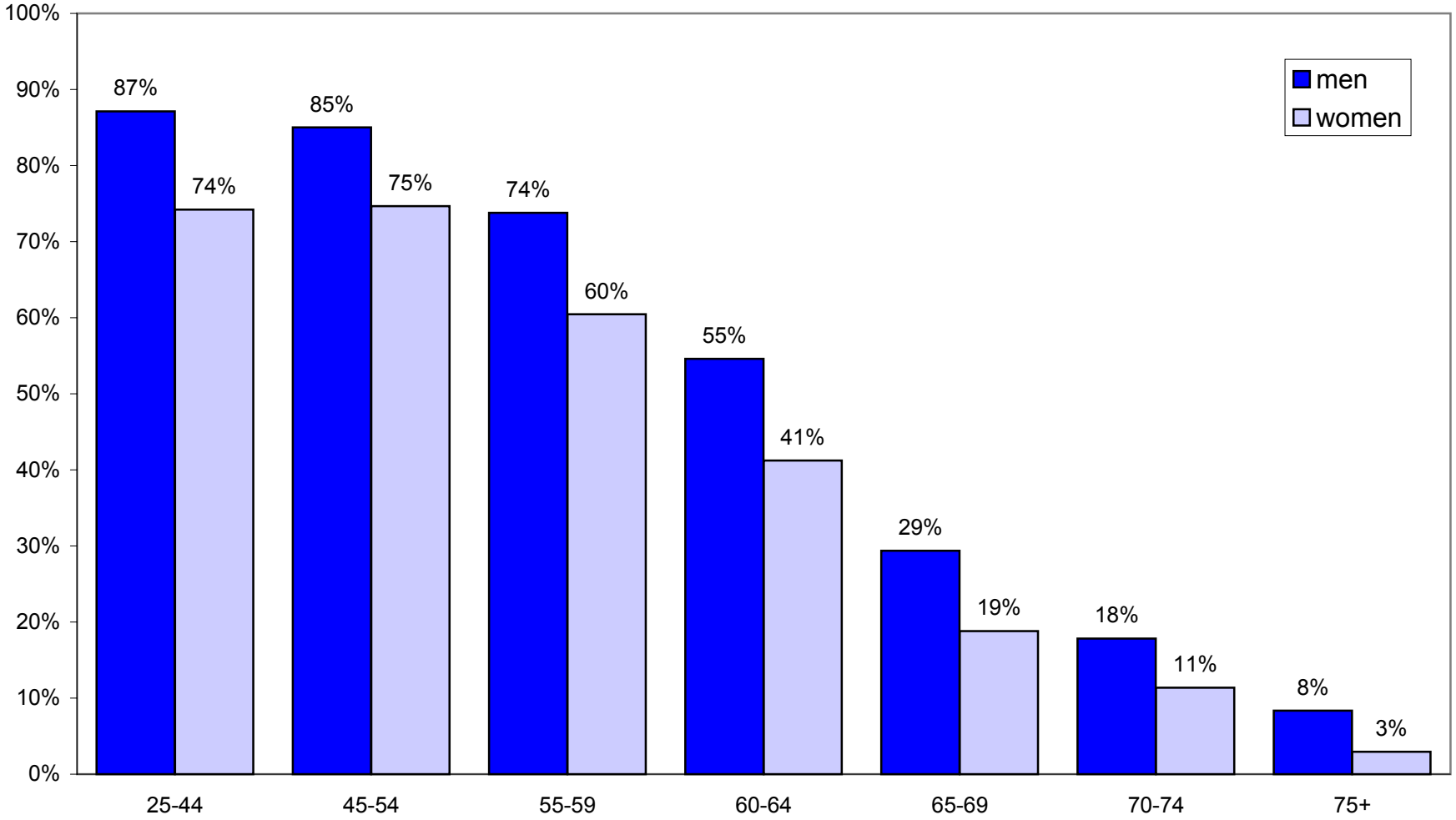


Figure 1B
Mean Hours Worked Among the Employed
by Age and Gender
United States 2000

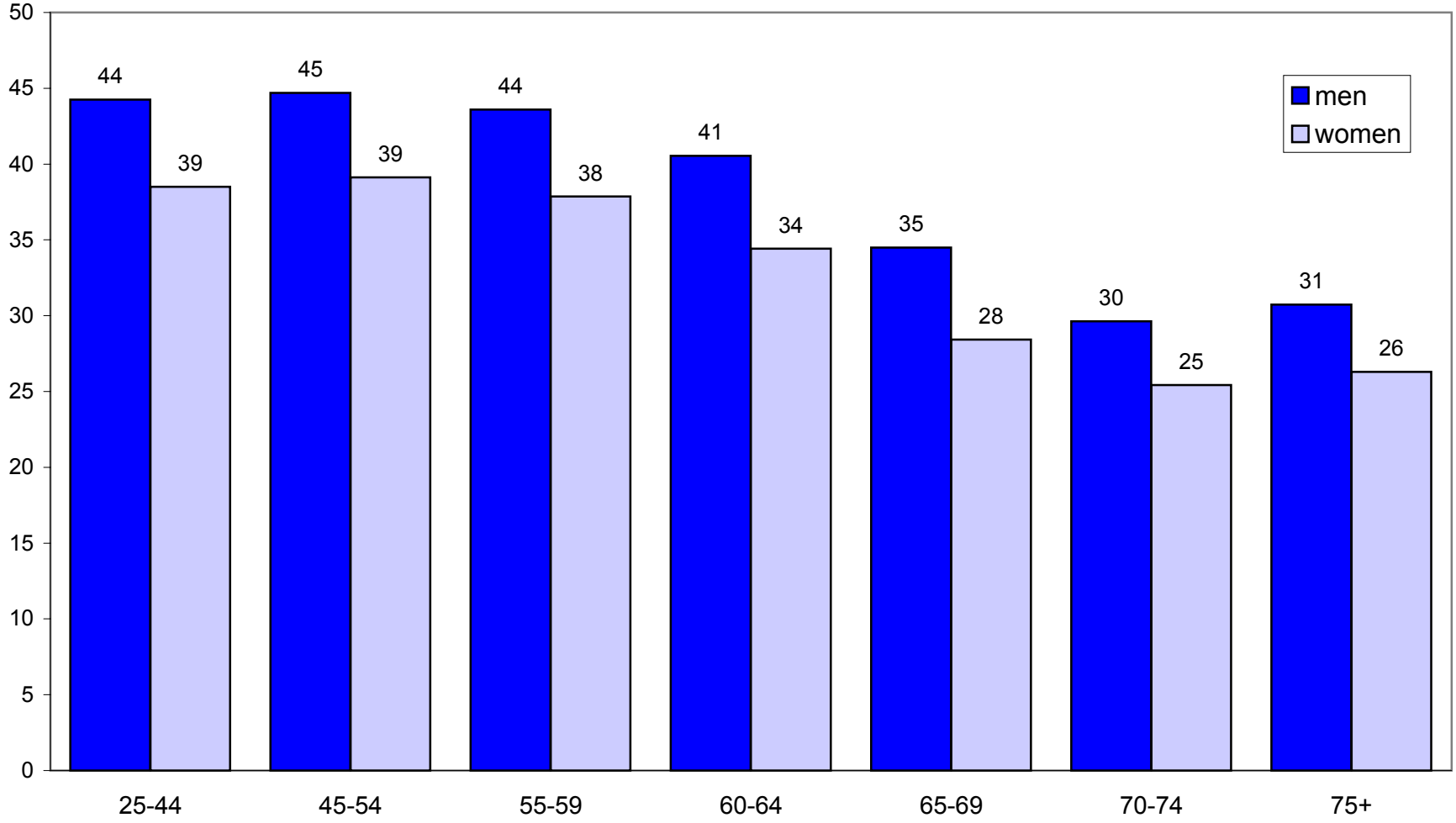


Figure 2A
Employment Rates by Age, Gender,
and Family Type
United States 2000

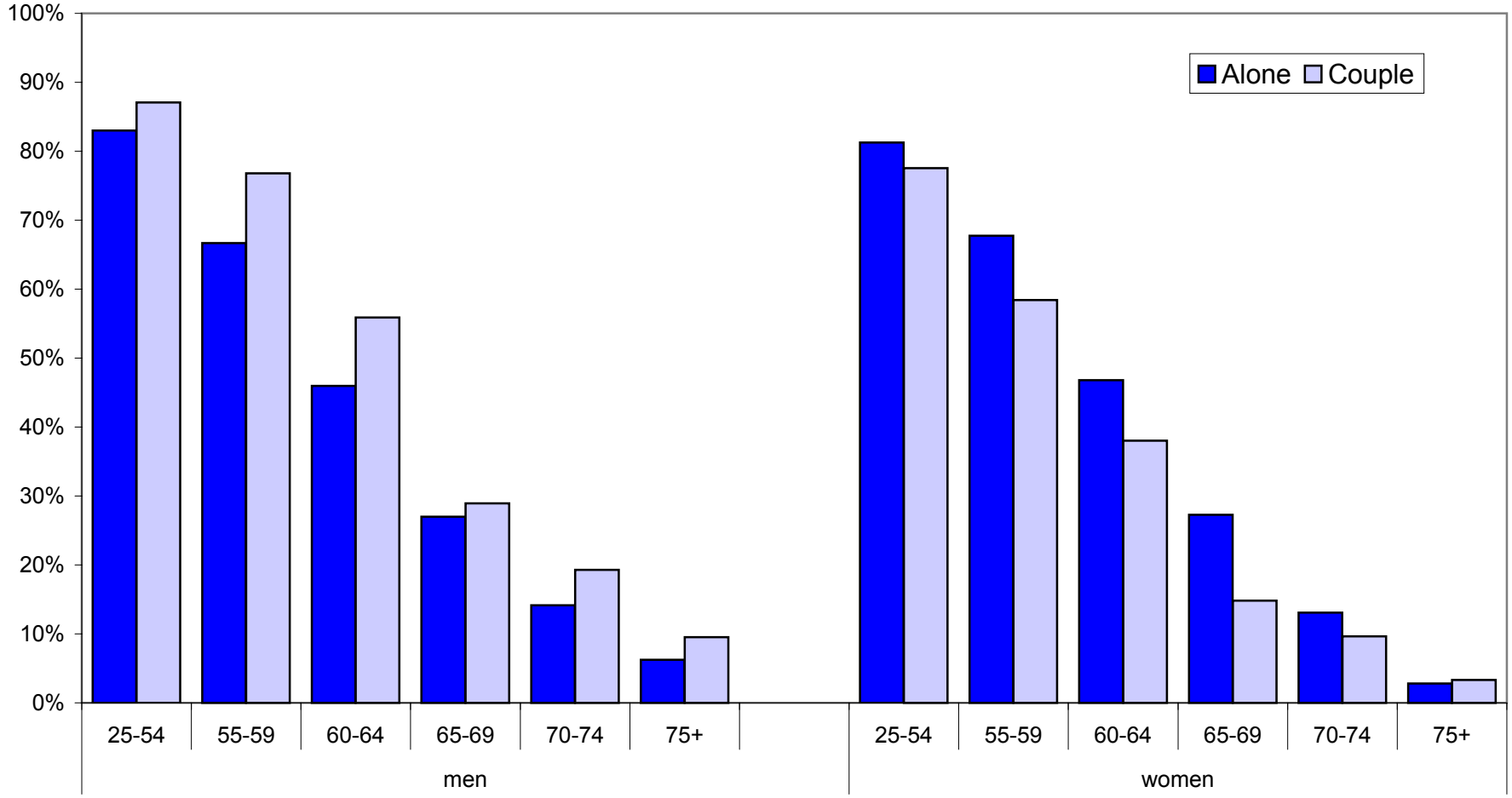


Figure 2B
Mean Hours Worked Among the Employed
by Age, Gender, and Family Type
United States 2000

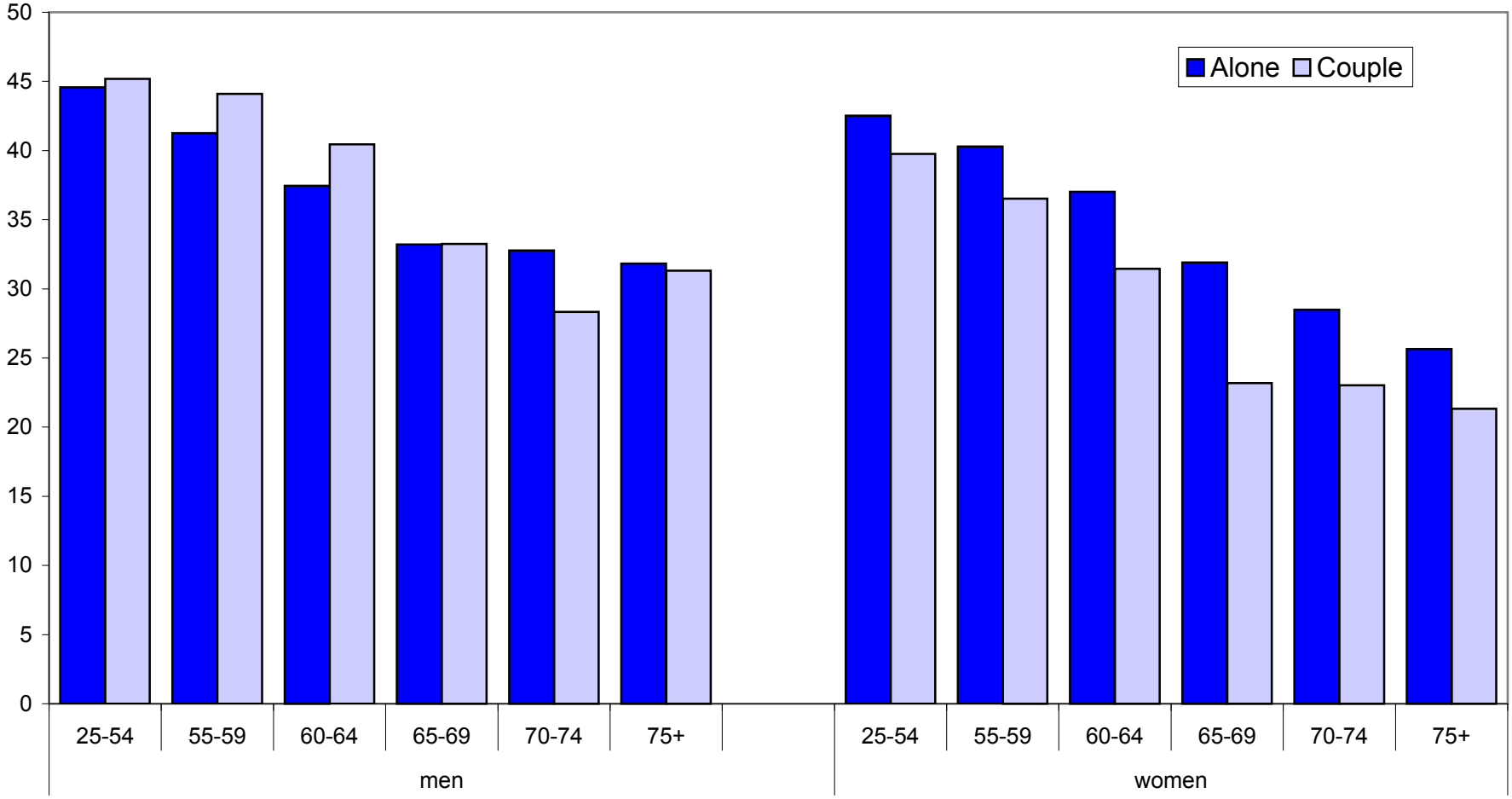


Figure 3A
Employment Rates by Age, Gender,
and Education Level
United States 2000

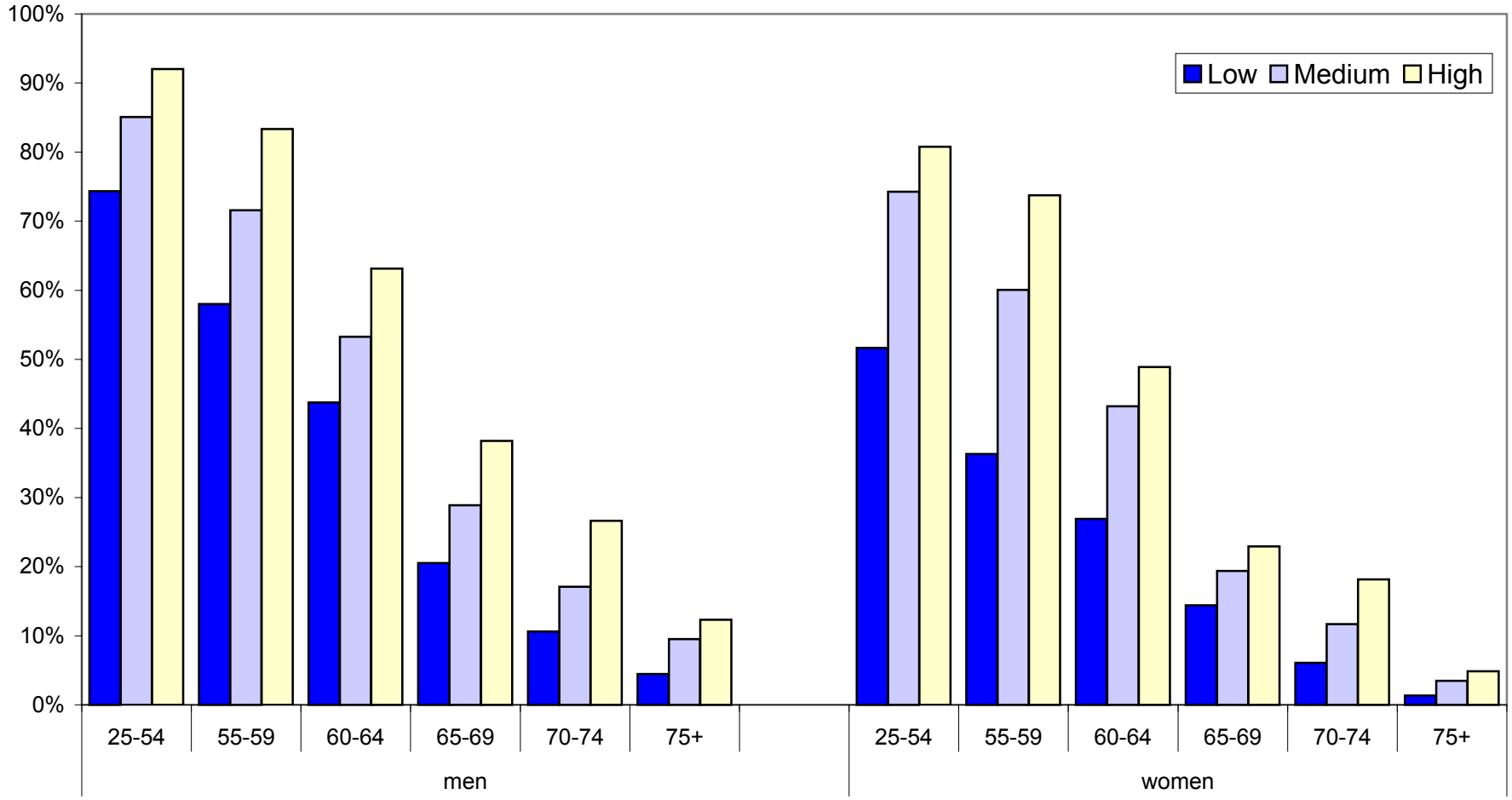


Figure 3B
Mean Hours Worked Among the Employed
by Age, Gender, and Education Level
United States 2000

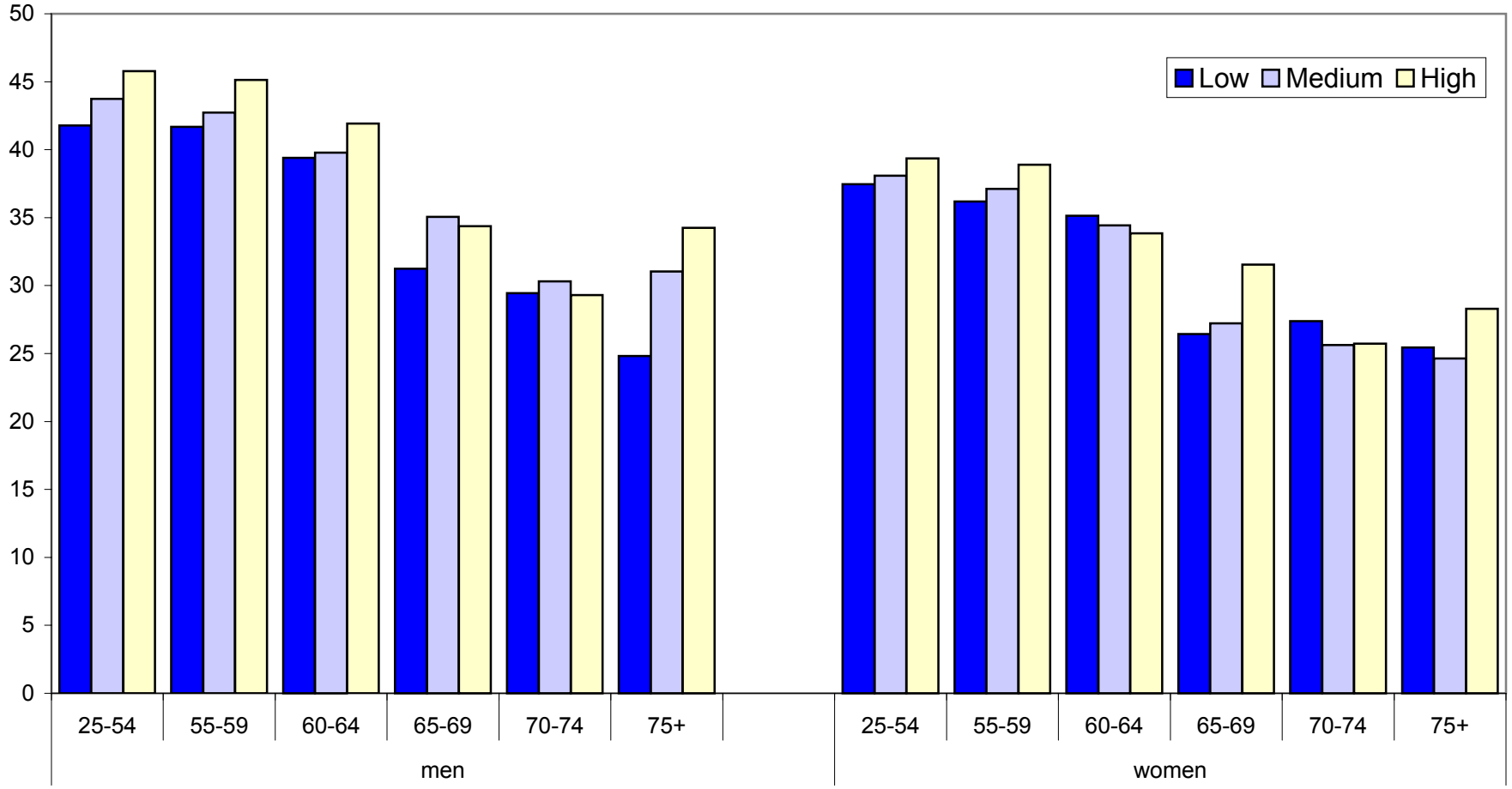


Figure 4A
Distribution of the Employed by Age, Gender, and Occupational Group
United States 2000

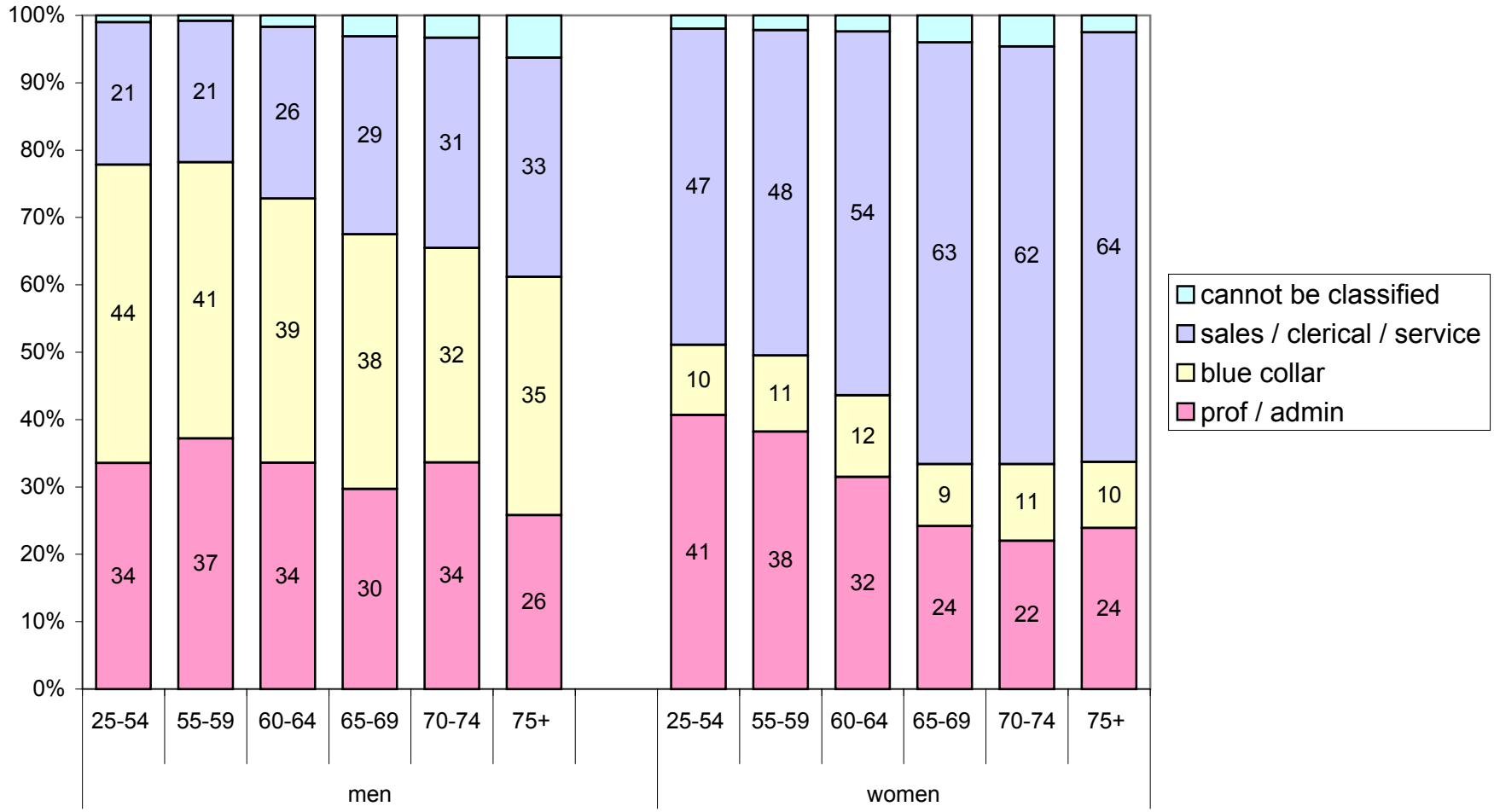


Figure 4B
Mean Hours Worked Among the Employed
by Age, Gender, and Occupational Group
United States 2000

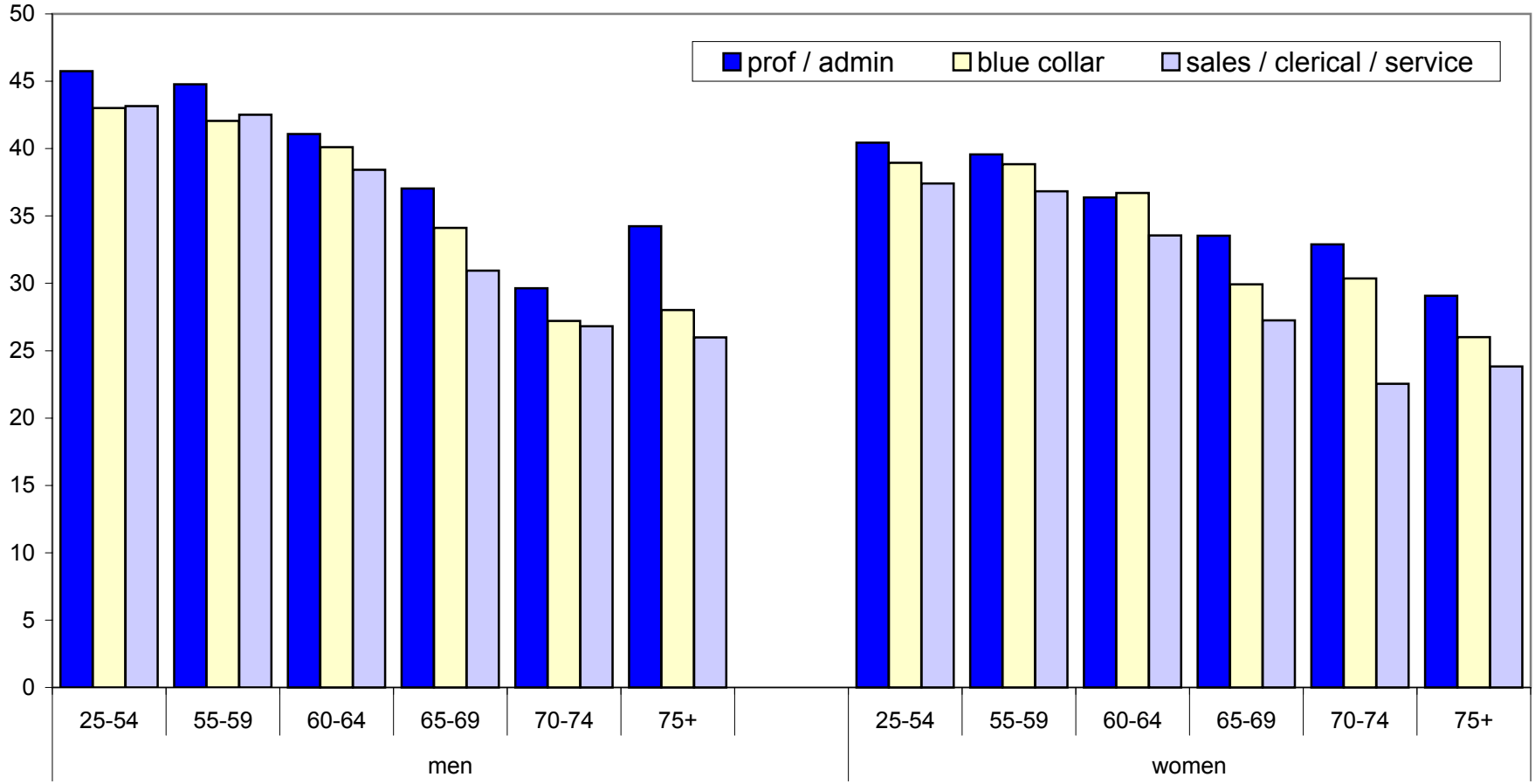


Figure 5A
Distribution of the Employed by Age, Gender,
and Employment Status (Employee vs Self-Empoyed)
United States 2000

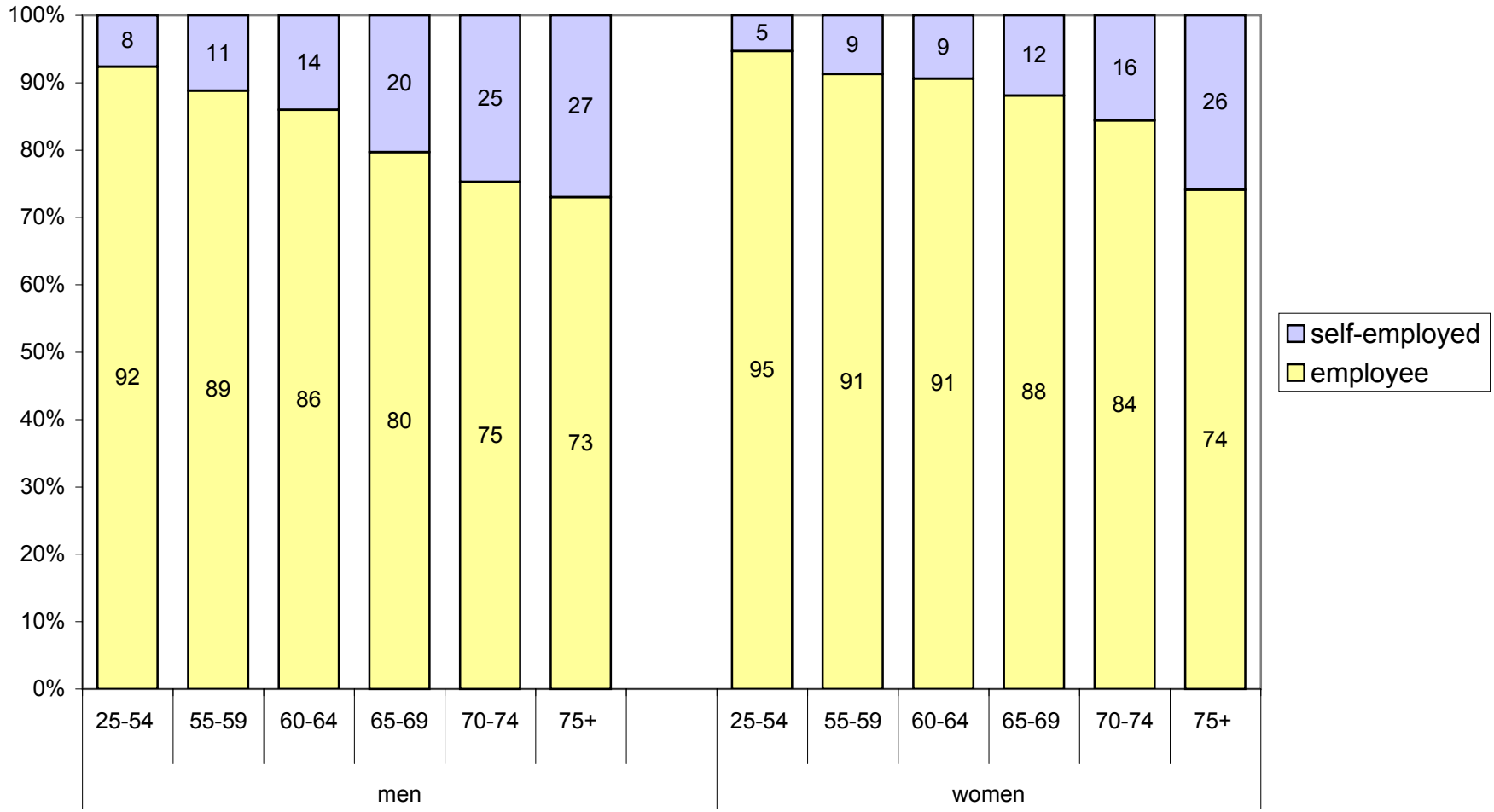


Figure 5B
Mean Hours Worked Among the Employed
by Age, Gender, and Employment Status (Employee vs Self-Empoyed)
United States 2000

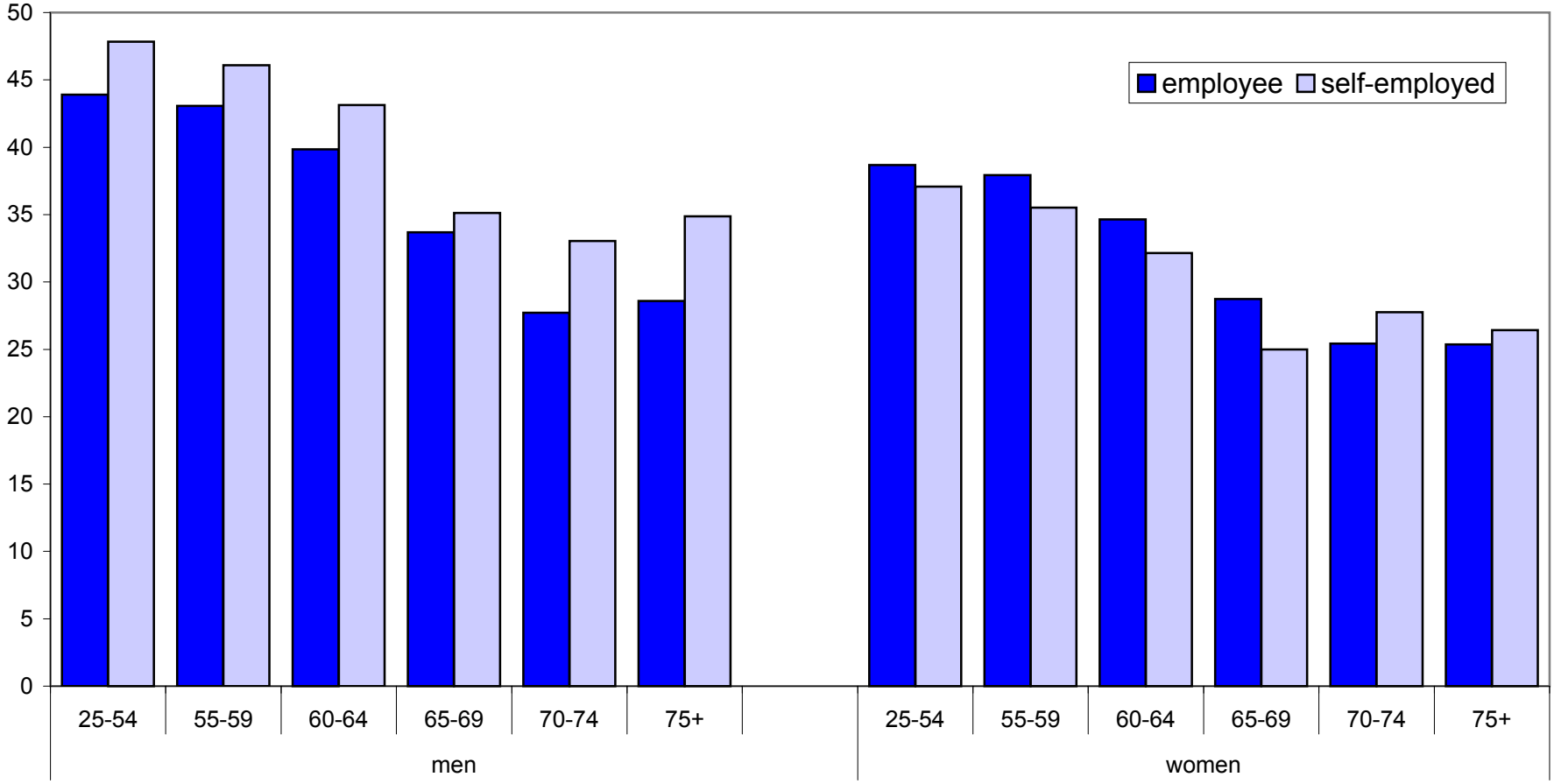


Figure 6A
Distribution of the Employed by Age, Gender,
and Household Income Quartile
United States 2000

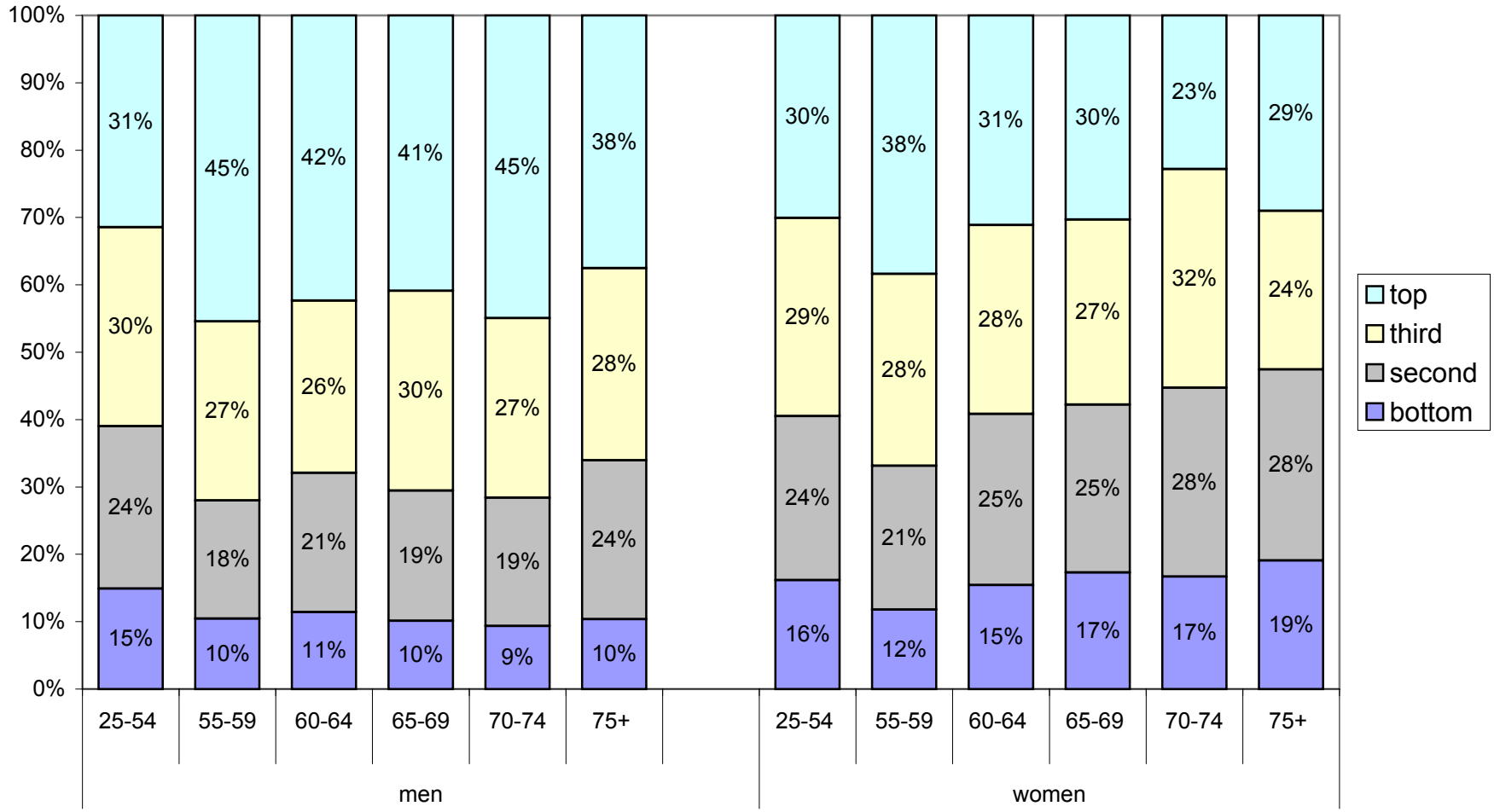


Figure 6B
Mean Hours Worked Among the Employed
by Age, Gender, and Household Income Quartile
United States 2000

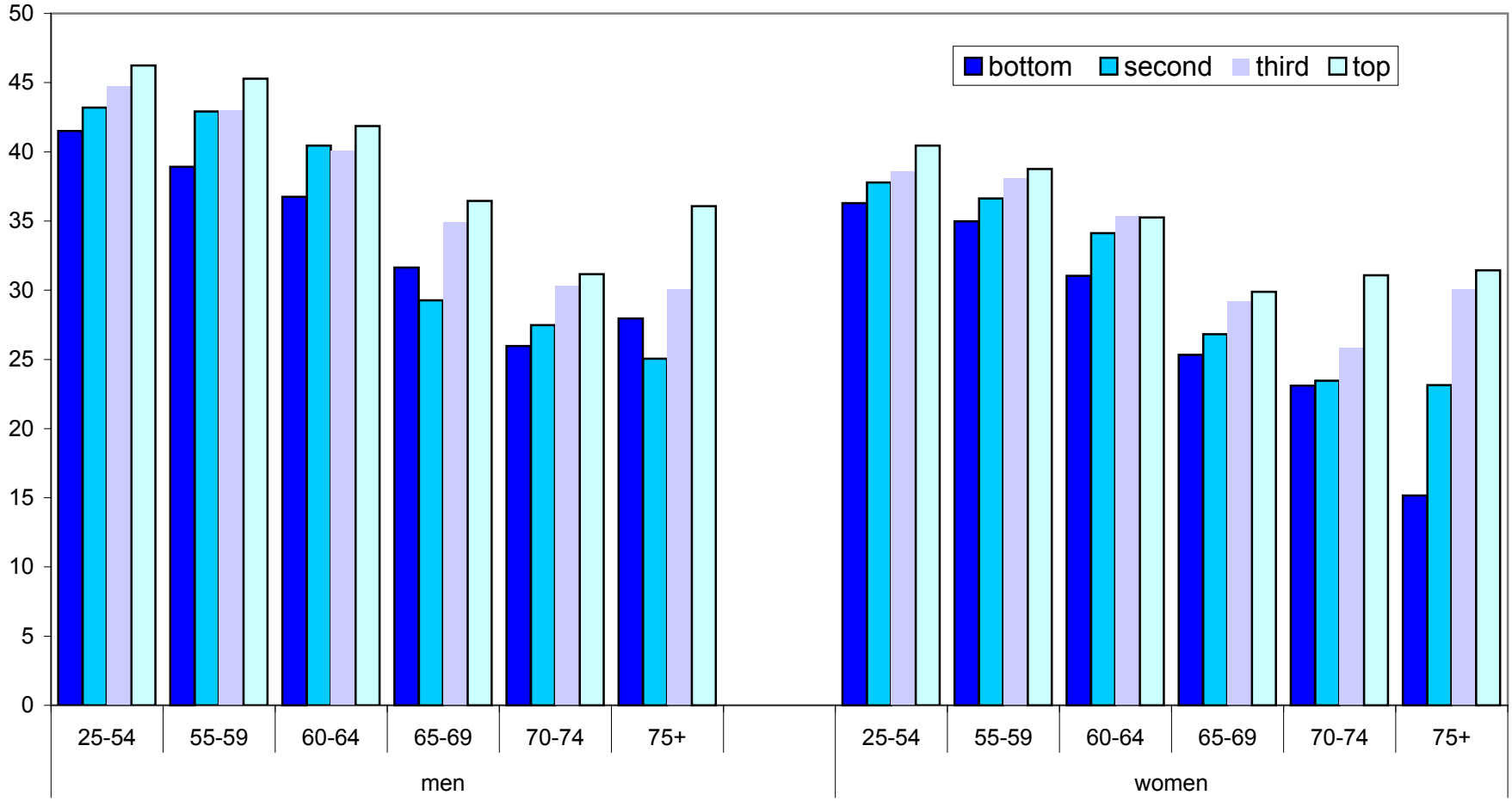
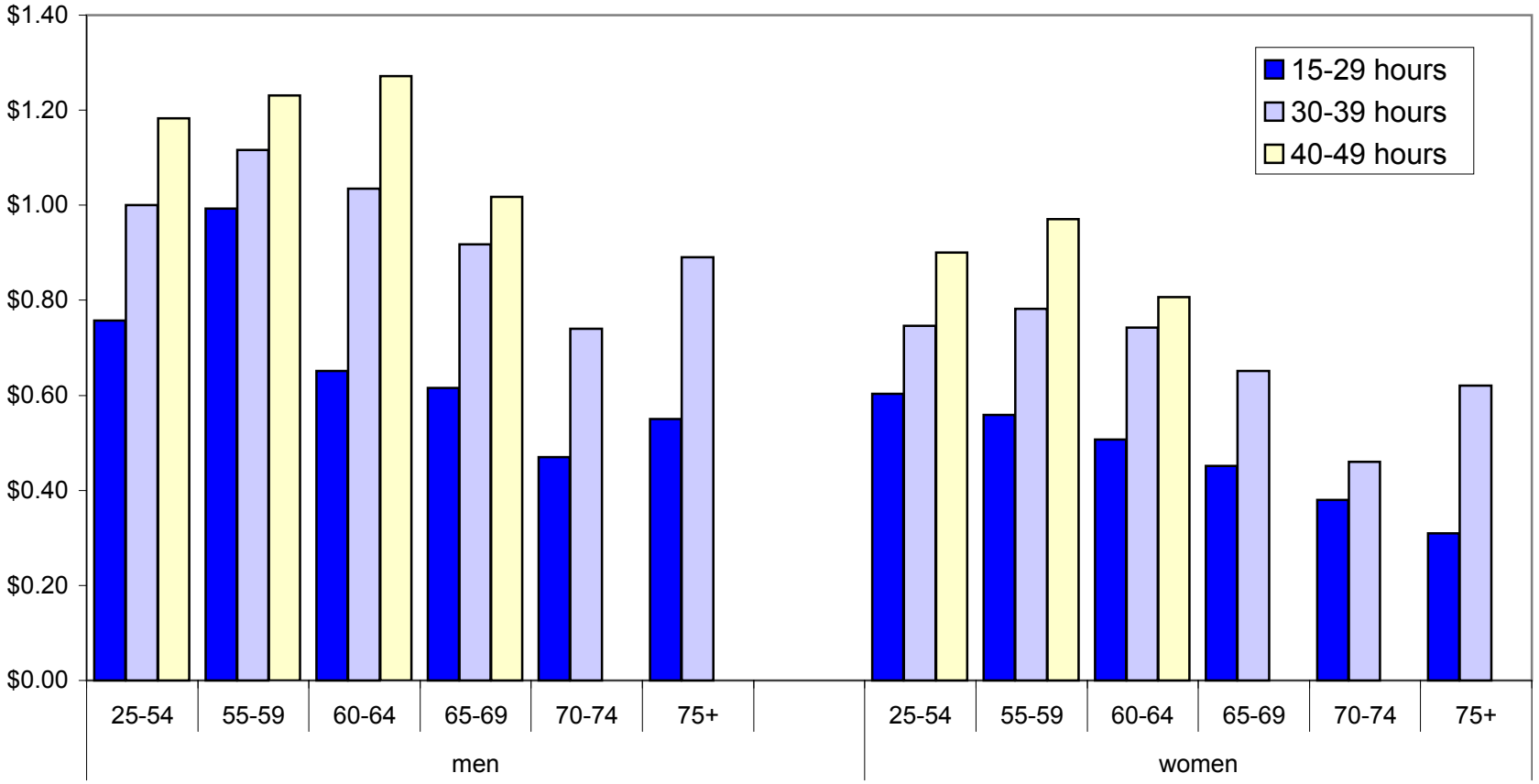


Figure 7
Estimated (Standardized) Hourly Earnings
by Mean Hours Worked
United States 2000



Note: Earnings are standardized against the estimated hourly earnings of 25-54 year old men who work 30-39 hours/week.

Table 1.
United States -- 2000
Logistic Regressions: Dependent Variable is Employed = Yes
By Gender and Age Group (age 25-54, 55-59, 60-64, 65-69)

	MEN				WOMEN			
	25-54	55-59	60-64	65-69	25-54	55-59	60-64	65-69
Low Education	0.423 ***	0.370 ***	0.427 ***	0.429 ***	0.247 ***	0.202 ***	0.247 ***	0.392 ***
Middle Education	0.647 ***	0.633 ***	0.781	0.615 ***	0.696 ***	0.563 ***	0.624 ***	0.703 *
Lives Alone	0.652 ***	0.512 ***	0.698 *	0.835	0.738 ***	0.790	0.743 *	1.827 ***
Other Income	0.885 ***	0.830 ***	0.832 ***	0.813 ***	0.825 ***	0.835 ***	0.787 ***	0.858 ***
Other Income^2	0.999 ***	0.998 ***	0.998 ***	1.002	1.003 ***	1.003 ***	1.004 ***	1.002 ***
Constant	7.470 ***	4.779 ***	2.201 ***	1.155	6.345 ***	5.057 ***	2.924 ***	0.560 **
Number of Obs.	24118	2572	2020	1860	25662	2721	2187	1754
Cox & Snell	0.087	0.244	0.260	0.153	0.157	0.180	0.200	0.063
Nagelkerke	0.148	0.344	0.348	0.234	0.223	0.241	0.273	0.111

Notes:
Coefficients are exponentiated betas.
"Other income" is standardized using the country mean.
Omitted categories include High Education and Does Not Live Alone.
*p<=.05; **p <=.01; ***p<=.001

Table 2.
United States -- 2000
OLS Regressions: Dependent Variable is Usual Weekly Hours
(Among the Employed)
By Gender and Age Group (age 25-54, 55-59, 60-64, 65-69)

	MEN				WOMEN			
	25-54	55-59	60-64	65-69	25-54	55-59	60-64	65-69
Low Education	-1.683 ***	-2.405 **	-1.282	-2.782	-0.882 **	-2.356 *	0.491	-5.249 *
Middle Education	-0.547 ***	-1.680 **	-1.088	0.244	-0.355 *	-0.984	0.919	-6.479 **
Lives Alone	0.279	-2.090 *	-2.342 *	0.911	3.050 ***	1.183	2.297 *	2.415
Other Income	-0.252 ***	-0.284 ***	-0.551 ***	-0.643 ***	-0.292 ***	-0.300 ***	-0.537 ***	-0.905 ***
Other Income^2	-0.002 ***	-0.003 ***	-0.008 ***	-0.009 ***	0.001 ***	0.002 *	0.004 **	0.008
Service	-1.219 ***	-0.503	-0.121	-4.405 *	-1.798 ***	-1.664 **	-1.987 *	0.203
Blue Collar	-1.297 ***	-0.417	1.720	-1.296	-0.344	0.889	1.443	2.343
Constant	44.349 ***	44.285 ***	39.928 ***	38.642 ***	39.959 ***	40.136 ***	36.236 ***	36.255 ***
Number of Obs.	20201	1777	964	413	18068	1539	815	256
R-Squared	0.055	0.059	0.109	0.174	0.074	0.086	0.120	0.234

Notes:
"Other income" is standardized using the country mean.
Omitted categories include High Education; Does Not Live Alone; and Professional/Administrative Occupational Group
"Missing occupation" is treated as a control variable.
*p<=.05; **p <=.01; ***p<=.001

FIGURE 8A
Men's Employment Rates by Age
Austria, Belgium, Germany, Greece, Ireland, US
Approximately 2000

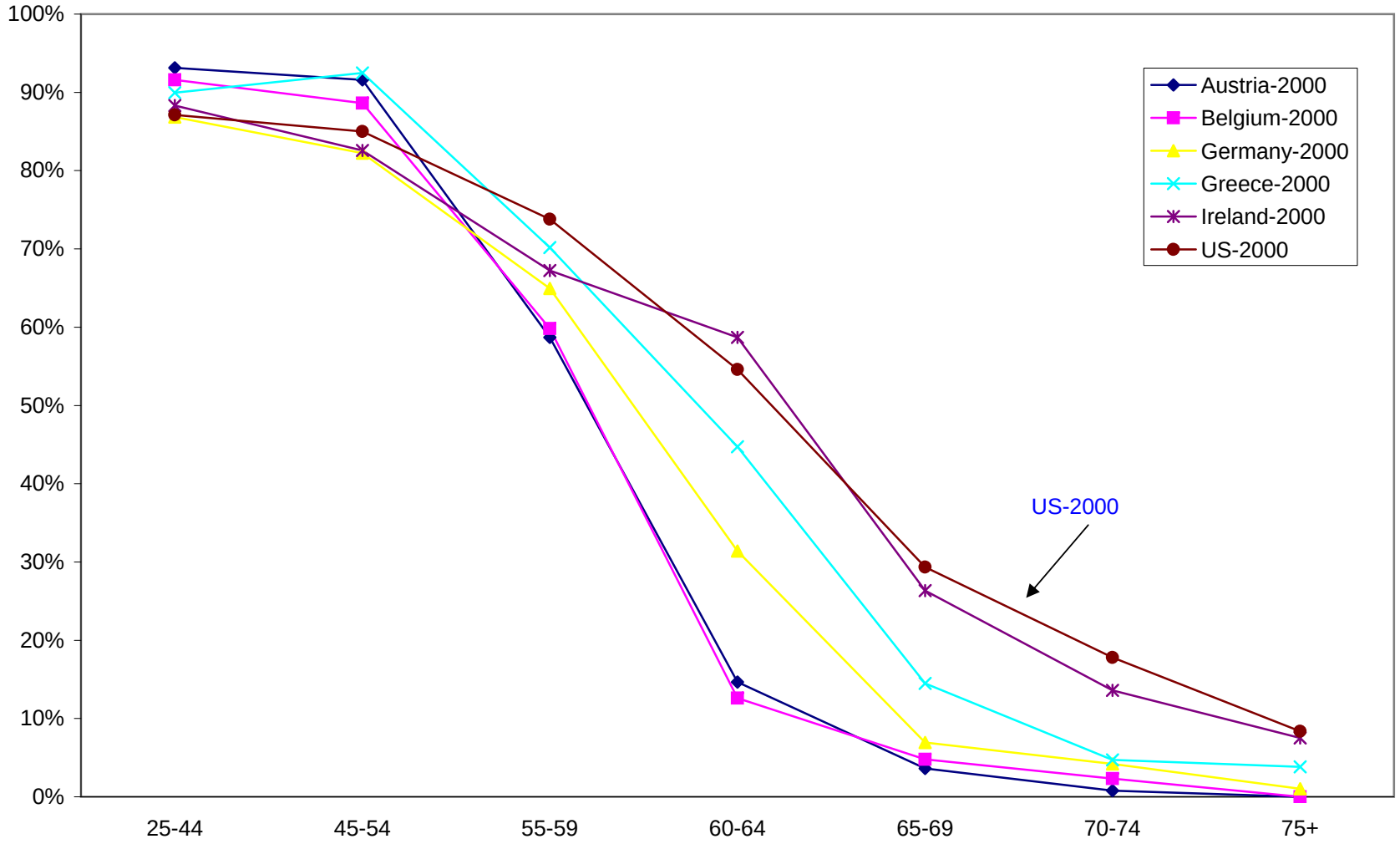


FIGURE 8B
Men's Employment Rates by Age
Italy, Luxembourg, Netherlands, Spain, UK, US
Approximately 2000

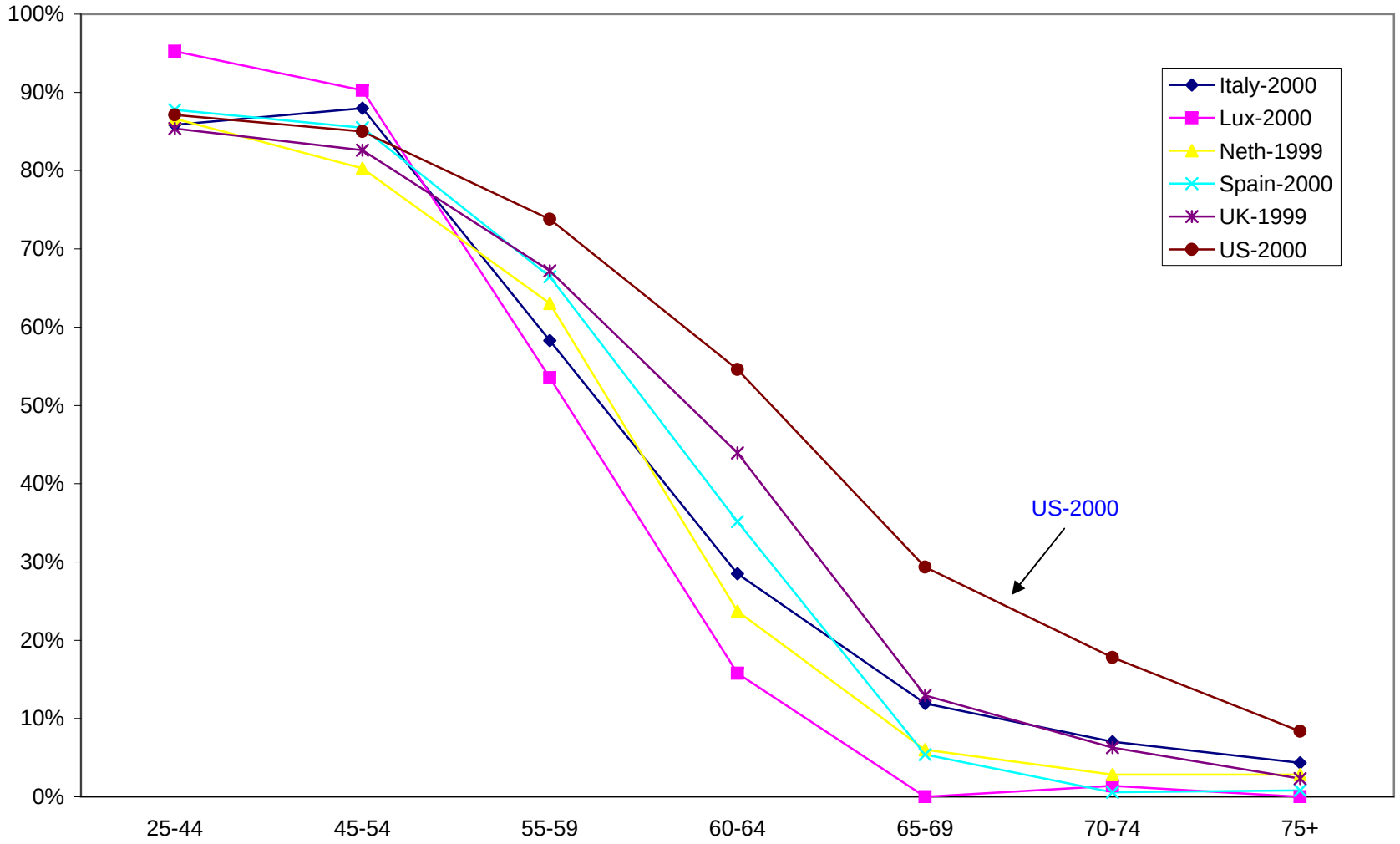


FIGURE 8C
Women's Employment Rates by Age
Austria, Belgium, Germany, Greece, Ireland, US
Approximately 2000

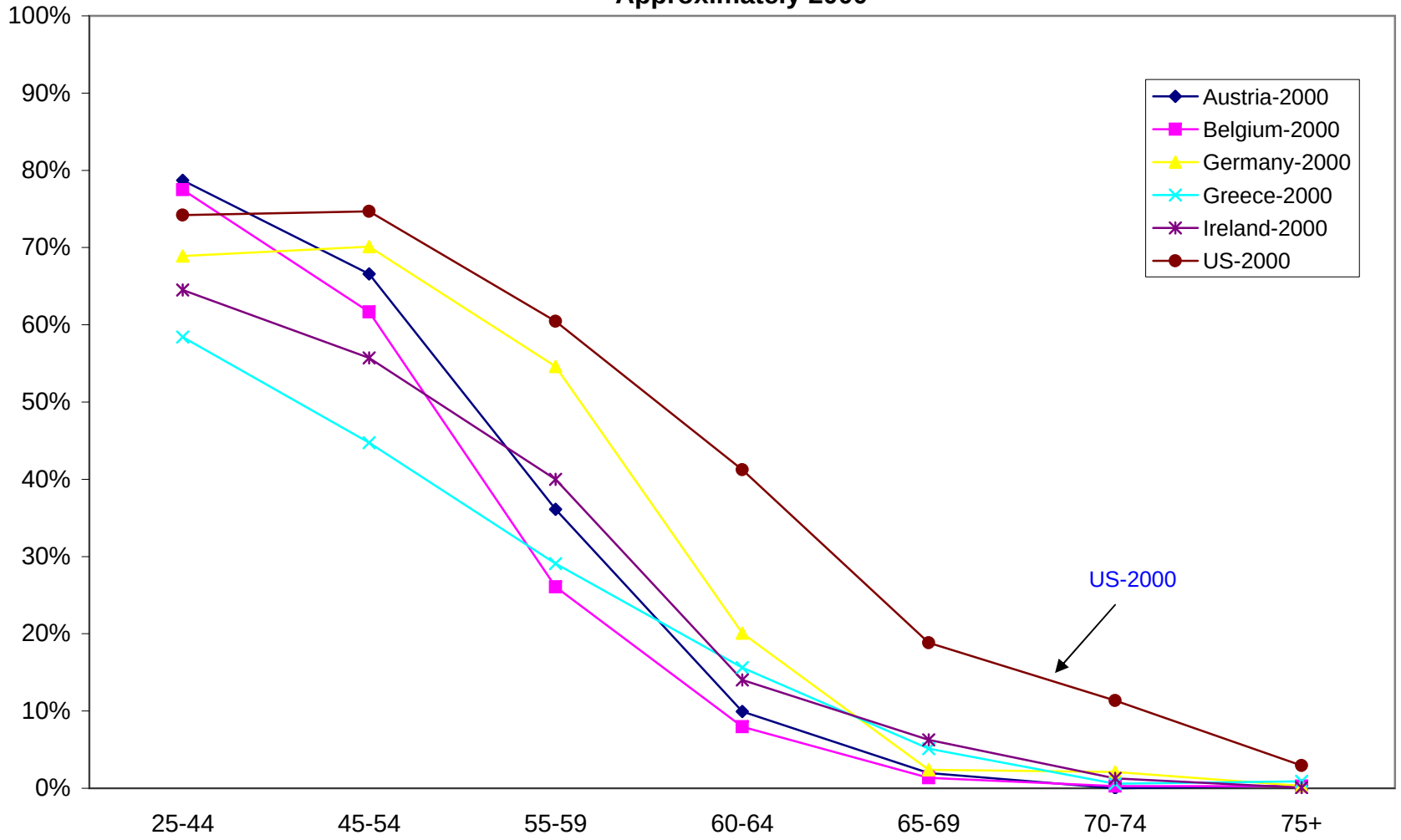


FIGURE 8D
Women's Employment Rates by Age
Italy, Luxembourg, Netherlands, Spain, UK, US
Approximately 2000

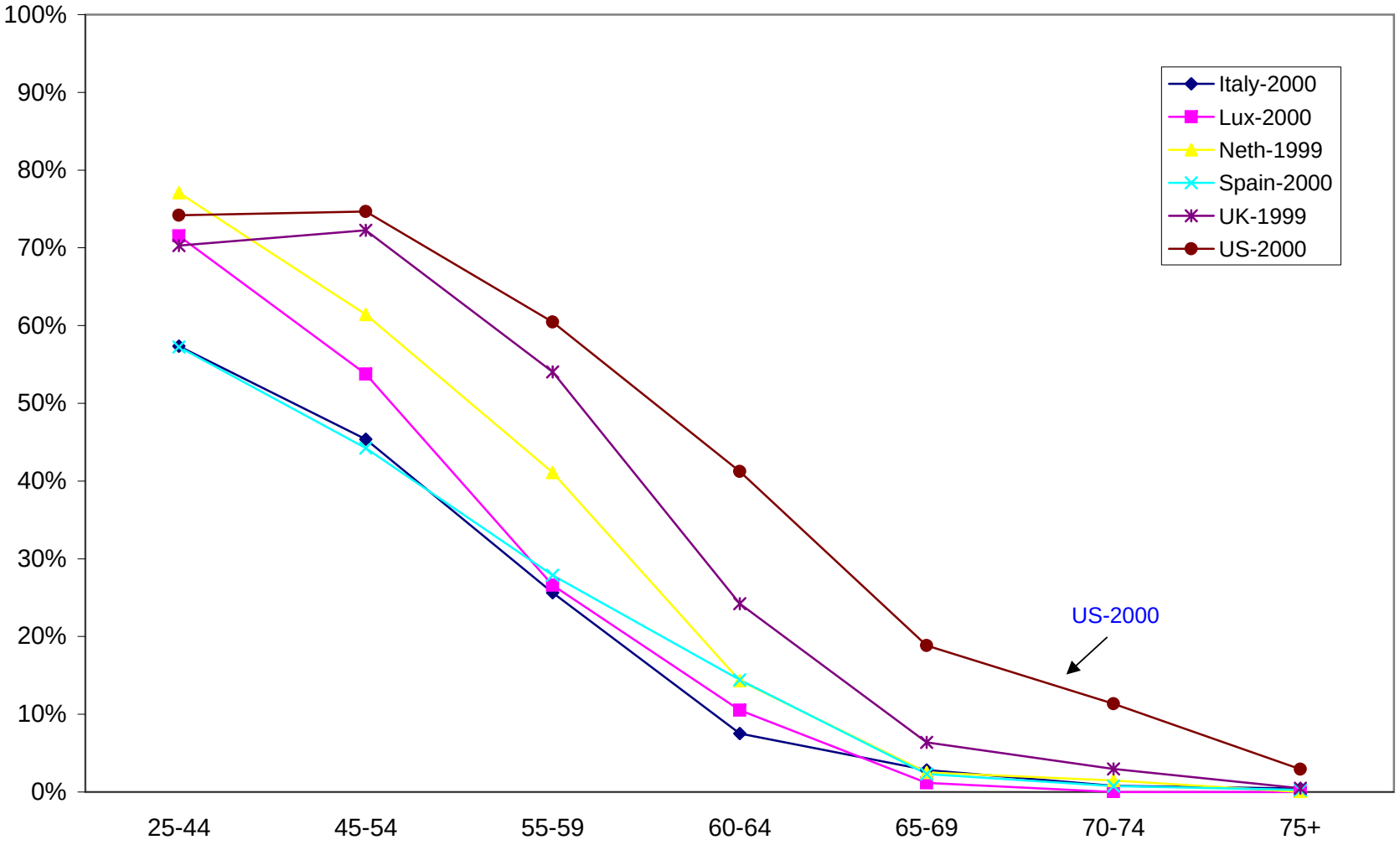


FIGURE 9A
Mean Hours Worked Among the Employed by Age -- Men
Austria, Belgium, Germany, Greece, Ireland, US
Approximately 2000

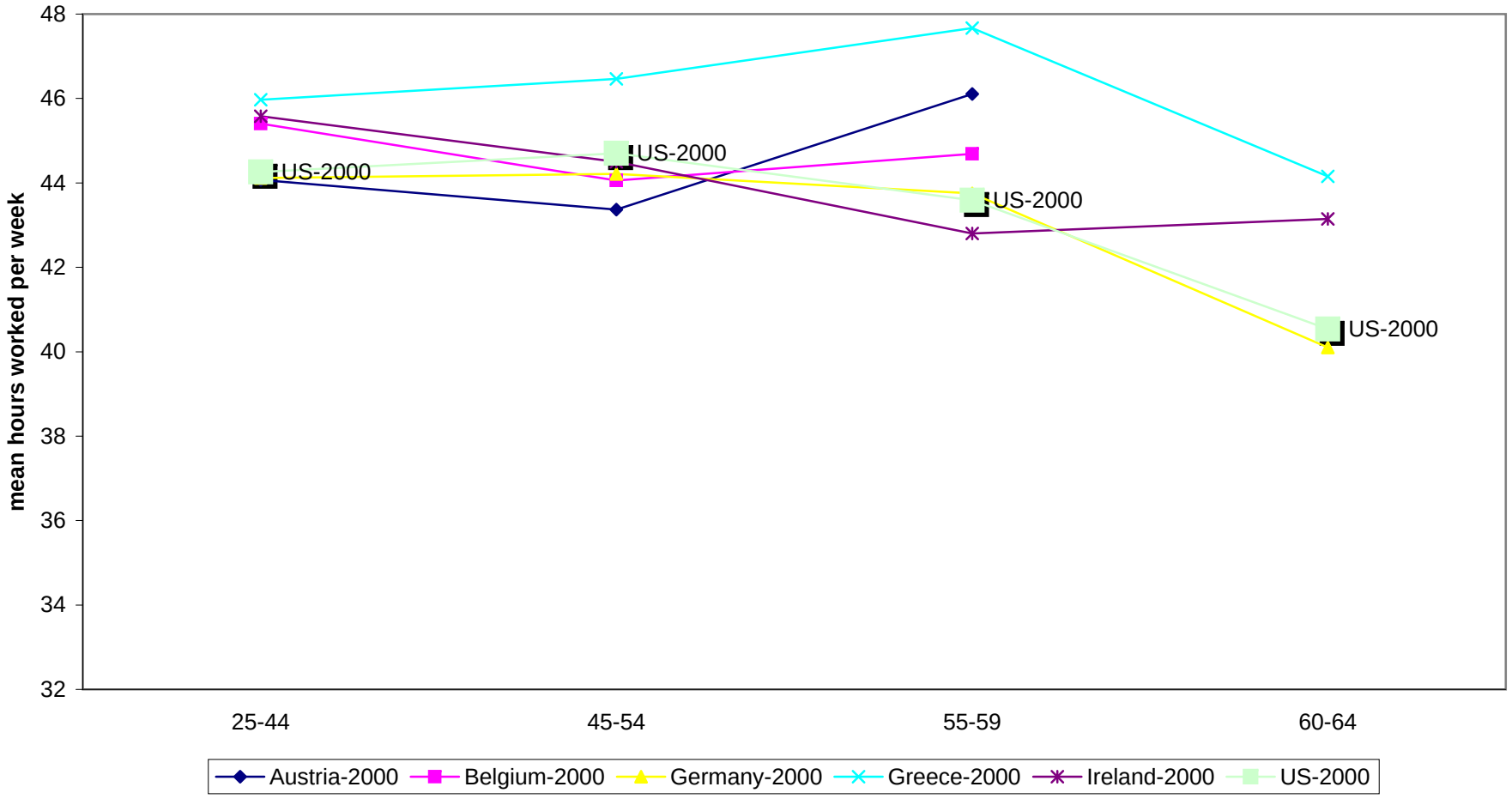


FIGURE 9A
Mean Hours Worked Among the Employed by Age -- Men
Italy, Luxembourg, Netherlands, Spain, UK, US
Approximately 2000

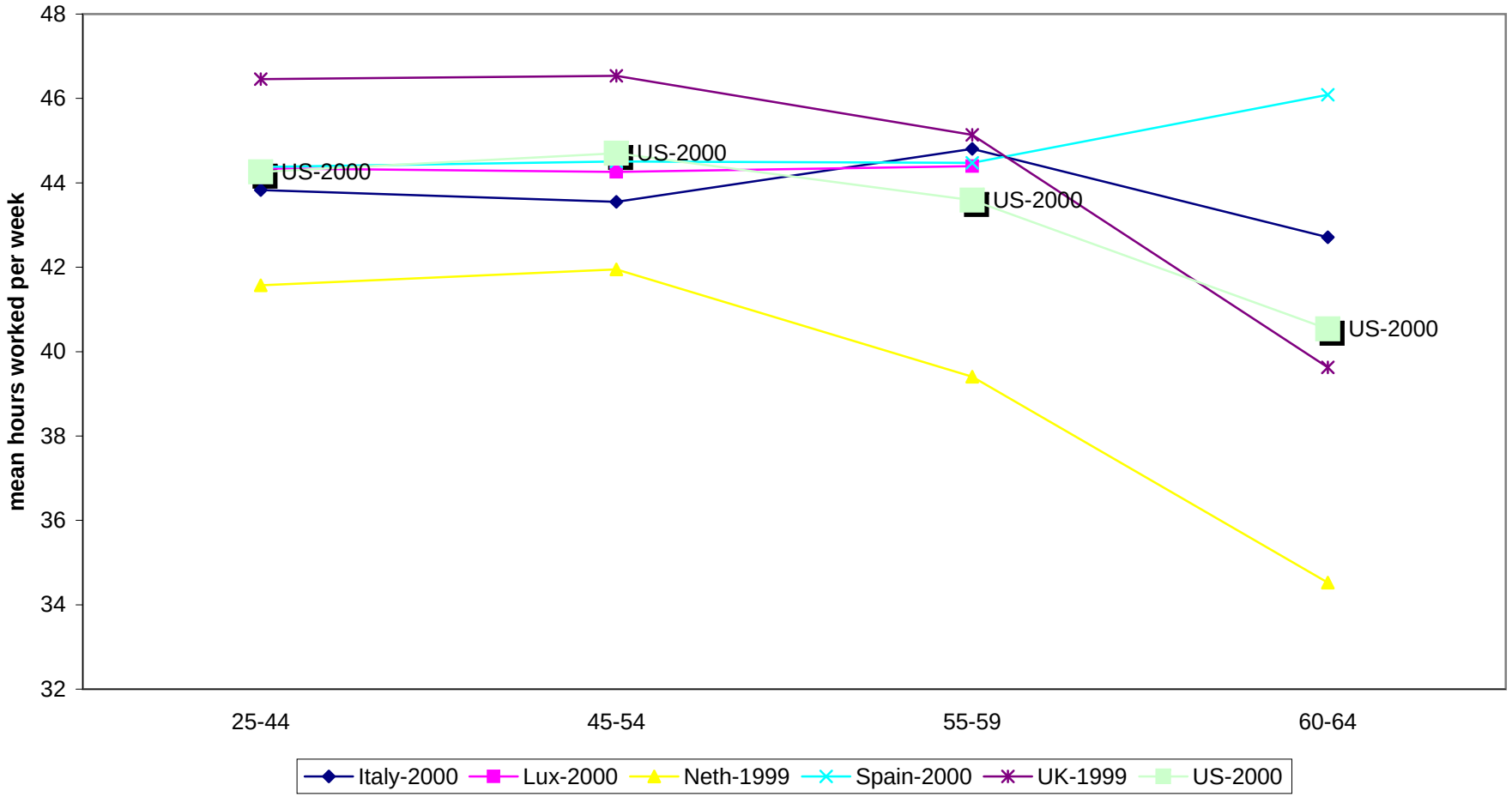


FIGURE 9C
Mean Hours Worked Among the Employed by Age -- Women
Austria, Belgium, Germany, Greece, Ireland, US
Approximately 2000

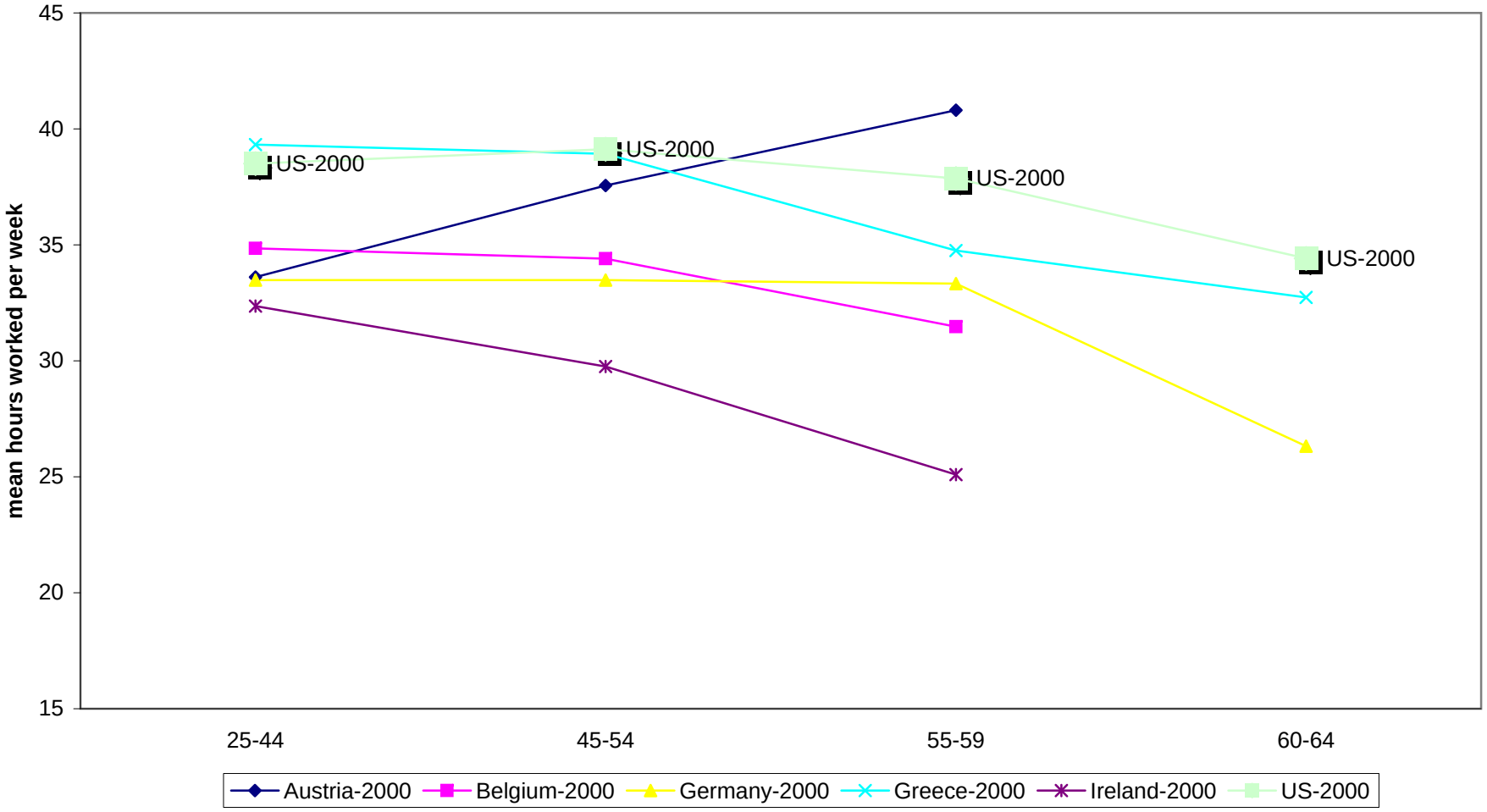


FIGURE 9D
Mean Hours Worked Among the Employed by Age -- Women
Italy, Luxembourg, Netherlands, Spain, UK, US
Approximately 2000

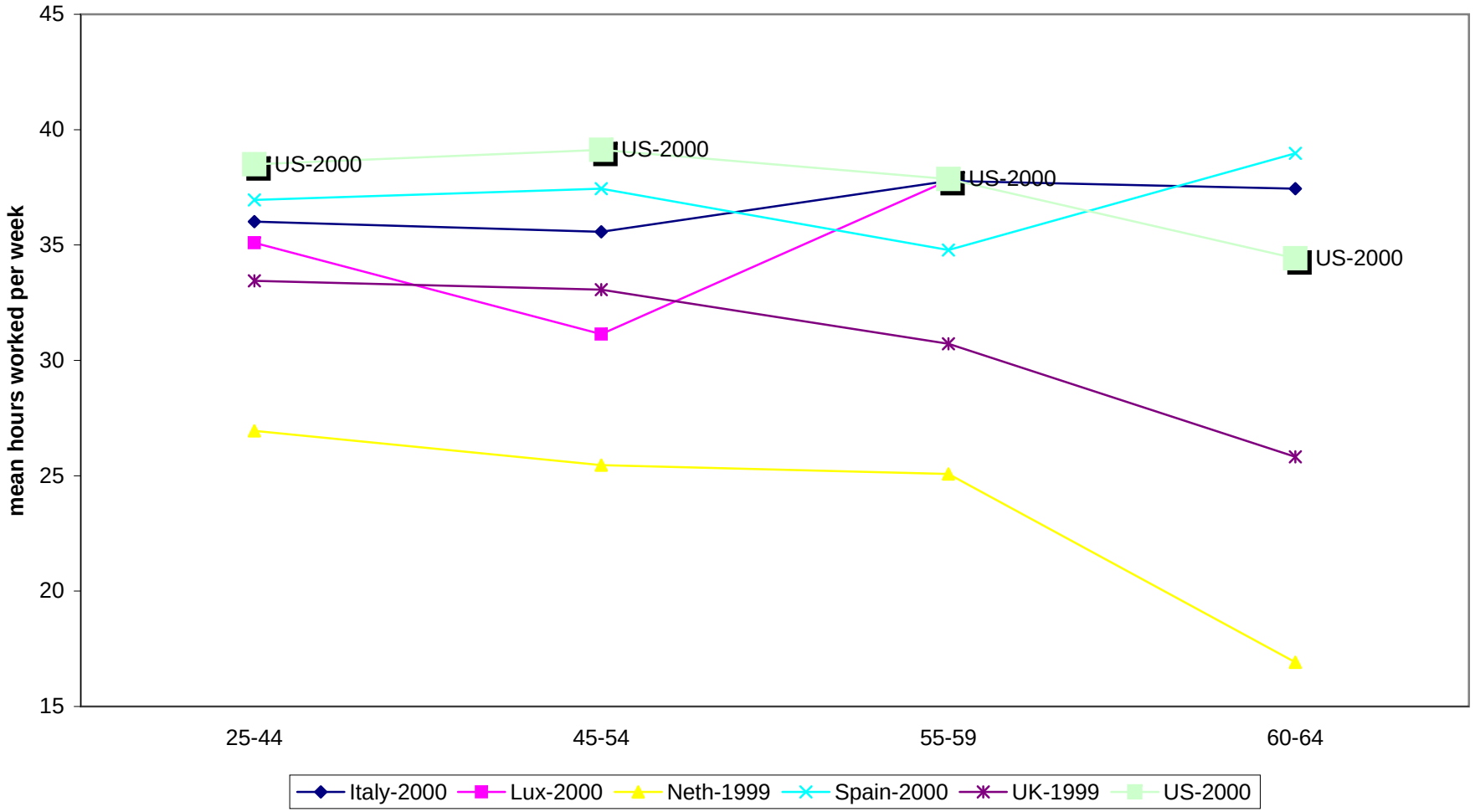


Table 3.
Employment Status in 11 Countries in 1999/2000
Model 1
ages 25-69
Logistic Regression

MEN	AUS		BEL		GER		GRE		IRE		ITA		LUX		NET		SPA		UK		US	
Age 55 to 59	0.124	***	0.381	**	0.339	***	0.240	***	0.410	***	0.361	***	0.066	***	0.220	***	0.348	***	0.634	***	0.540	***
Age 60 to 64	0.014	***	0.083	***	0.111	***	0.080	***	0.245	***	0.152	***	0.002	***	0.058	***	0.091	***	0.300	***	0.284	***
Age 65 - 69	0.005	***	1.372E+08		0.031	***	0.011	***	0.031	***	0.048	***	0.000		0.053	***	0.009	***	0.104	***	0.135	***
Low Education	0.229	***	0.245	***	0.441	***	0.299	***	0.261	***	0.259	***	0.099	***	3.217	***	0.196	***	0.249	***	0.424	***
Middle Education	0.443	*	0.433	*	0.642	***	0.555	**	0.868		0.567	***	0.246	***	7.708	***	0.586	**	0.554	***	0.659	***
Lives Alone	0.519	*	0.417	**	0.583	***	0.431	**	0.316	***	0.972		1.399		1.223		0.629		0.647	***	0.647	***
Other Income	0.793	***	0.821	***	0.821	***	0.723	***	0.715	***	0.732	***	0.508	***	0.700	***	0.707	***	0.462	***	0.871	***
Other Income^2	1.003	***	1.005	**	1.007	***	1.008	***	1.010	***	1.005	***	1.019	***	1.005	***	1.009	***	1.022	***	0.998	***
Constant	43.416	***	98.602	***	7.399	***	28.251	***	26.189	***	24.797	***	524	***	1.554	***	95.595	***	7.473	***	7.473	***
Number of Obs.	1547		1232		7588		2055		1414		5371		1775		3320		3105		13975		30570	
Cox & Snell	0.523		0.053		0.415		0.506		0.364		0.466		0.574		0.536		0.464		0.494		0.225	
Nagelkerke	0.729		0.174		0.598		0.696		0.531		0.633		0.861		0.772		0.650		0.698		0.339	

WOMEN	AUS		BEL		GER		GRE		IRE		ITA		LUX		NET		SPA		UK		US	
Age 55 to 59	0.190	***	0.226	***	0.639	***	0.383	***	0.634	**	0.513	***	0.285	***	0.529	***	0.508	***	0.609	***	0.708	***
Age 60 to 64	0.030	***	0.064	***	0.145	***	0.070	***	0.127	***	0.120	***	0.029	***	0.095	***	0.146	***	0.180	***	0.357	***
Age 65 - 69	0.000		0.020	***	0.029	***	0.014	***	0.047	***	0.055	***	0.015	***	0.028	***	0.016	***	0.038	***	0.131	***
Low Education	0.147	***	0.114	***	0.498	***	0.106	***	0.163	***	0.075	***	0.175	***	0.508	***	0.097	***	0.456	***	0.248	***
Middle Education	0.259	***	0.360	***	0.918		0.267	***	0.425	***	0.336	***	0.324	***	1.201		0.352	***	0.738	***	0.679	***
Lives Alone	0.937		1.874	*	0.571	***	0.775		0.701		2.169	***	0.767		0.739		1.187		0.633	***	0.803	***
Other Income	0.691	***	0.913	***	0.731	***	0.734	***	0.804	***	0.830	***	0.567	***	0.737	***	0.832	***	0.826	***	0.825	***
Other Income^2	1.010	***	1.000	***	1.008	***	1.006	***	1.004	***	1.001	***	1.014	***	1.004	***	1.001	***	1.002	***	1.003	***
Constant	57.821	***	19.461	***	7.816	***	16.690	***	15.199	***	13.298	***	75.106	***	10	***	13.169	***	10.115	***	6.402	***
Number of Obs.	1686		1330		7564		2759		1947		5971		1818		3455		3775		15229		32324	
Cox & Snell	0.428		0.280		0.366		0.354		0.308		0.321		0.431		0.377		0.340		0.275		0.231	
Nagelkerke	0.571		0.411		0.490		0.494		0.411		0.439		0.575		0.509		0.461		0.370		0.317	

Notes:
Coefficients are exponentiated betas.
Exogenous Income is standardized using the country mean.
Omitted categories include Age 25-54; High Education; and Does Not Live Alone
*p<=.05; **p <=.01; ***p<=.001

Table 4.
Usually Weekly Hours in 11 Countries in 1999/2000
(Among the Employed)
Model 1
ages 25-69
OLS

MEN	AUS	BEL	GER	GRE	IRE	ITA	LUX	NET	SPA	UK	US
Age 55 to 59	0.968	-1.163	-0.663	0.147	-2.133	-1.693 **	-0.712	-1.782 **	-1.091	-0.820 *	-0.607 *
Age 60 to 64	-2.087	0.452	-5.004 ***	-4.969 ***	-3.570 *	-1.426	2.494	-7.367 ***	-1.050	-5.233 ***	-3.497 ***
Age 65 - 69	-4.957	-10.230	-17.389 ***	-8.205 **	-13.611 ***	-7.610 ***	--	-24.810 ***	2.758	-17.688 ***	-7.602 ***
Low Education	1.227	-1.263	-1.440 **	3.897 ***	3.326 ***	0.655	-1.068	0.933	1.495 *	0.817 *	-1.643 ***
Middle Education	-0.279	-1.206	-0.608 *	2.497 **	2.542 **	0.199	-1.586 **	0.044	-0.316	-0.192	-0.596 ***
Lives Alone	-0.197	0.430	-0.939 *	3.220 **	-3.374 *	0.080	0.047	-0.414	-0.068	-0.410	0.019
Other Income	-0.265 ***	0.144 ***	0.045 **	-0.241 ***	-0.344 ***	-0.124 ***	-0.180 ***	-0.324 ***	-0.152 ***	-0.340 ***	-0.277 ***
Other Income^2	0.002 *	0.000 ***	0.002 ***	0.018 ***	0.004	0.003 ***	0.006 **	0.001	0.003 *	-0.001 ***	-0.002 ***
Service	-2.469 ***	-2.765 ***	-2.382 ***	2.113 **	0.308	no data	0.004	-1.524 **	0.654	-3.282 ***	-1.222 ***
Blue Collar	-1.652 **	-2.275 **	-2.751 ***	1.062	0.588	no data	-0.736	-0.191	0.923	-0.175	-1.144 ***
Constant	43.057 ***	46.164 ***	46.237 ***	37.999 ***	40.181 ***	40.463 ***	44.057 ***	38.511 ***	41.210 ***	44.433 ***	44.296 ***
Number of Obs.	1044	1178	5467	1329	1038	3320	1352	2388	2123	9732	23355
R-Squared	0.053	0.045	0.057	0.082	0.074	0.022	0.035	0.143	0.029	0.117	0.076

WOMEN	AUS	BEL	GER	GRE	IRE	ITA	LUX	NET	SPA	UK	US
Age 55 to 59	-0.985	-4.366 *	0.395	-3.742 *	-2.736 *	-0.581	8.220 ***	-0.728	-3.828 **	-1.644 ***	-0.427
Age 60 to 64	-10.755 ***	-0.713	-3.083 **	0.421	-3.911	-0.973	-5.103	-9.914 ***	-2.135	-5.621 ***	-3.437 ***
Age 65 - 69		-9.233	-14.223 ***	-8.889	-9.403 **	-13.839 ***	-27.580 *	-15.538 ***	-8.304	-12.097 ***	-9.565 ***
Low Education	-3.325 *	-3.410 **	-2.819 ***	4.847 ***	-3.834 ***	1.716 **	-4.044 ***	-5.758 ***	-0.238	-5.951 ***	-0.958 ***
Middle Education	-2.556 *	-1.811	-1.544 ***	4.302 ***	-0.043	1.773 **	-2.256 *	-3.256 ***	0.750	-4.217 ***	-0.406 *
Lives Alone	3.589 **	4.251 ***	1.870 **	1.777	2.152	2.043 *	2.193	5.001 ***	2.323	3.349 ***	2.848 ***
Other Income	-0.616 ***	-0.215 *	-0.774 ***	-0.078	-0.425 ***	-0.145 **	-1.278 ***	-0.324 ***	-0.320 ***	-0.583 ***	-0.302 ***
Other Income^2	0.008 ***	0.002	0.008 ***	0.002	0.004 *	0.002 ***	0.032 ***	-0.836 ***	0.005 **	0.002 ***	0.001 ***
Service	-1.480	0.454	-2.580 ***	3.196 ***	-0.846	no data	0.812	0.009	0.523	-2.480 ***	-1.809 ***
Blue Collar	-2.925 *	-3.873 **	-2.763 ***	0.891	-1.720	no data	-3.757 **	0.179	-3.671 ***	-2.299 ***	-0.162
Constant	38.599 ***	36.740 ***	36.454 ***	33.322 ***	34.617 ***	33.329 ***	40.494 ***	29.203 ***	37.592 ***	39.872 ***	40.019 ***
	2.414	2.294	1.263	3.095	3.041	1.958	2.417	1.116	2.354	1.006	0.466
Number of Obs.	841	985	4246	891	972	2193	837	2066	1470	8736	20678
R-Squared	0.117	0.071	0.189	0.104	0.095	0.022	0.169	0.298	0.063	0.179	0.094

Notes:
Exogenous Income is standardized using the country mean.
Omitted categories include Age 25-54; High Education; Does Not Live Alone; and Professional/Administrative Occupational Group
"Missing occupation" is treated as a control variable.
*p<=.05; **p <=.01; ***p<=.001

Figure 10A
Employment Rates - Men
by Age and Education Level
11 Countries

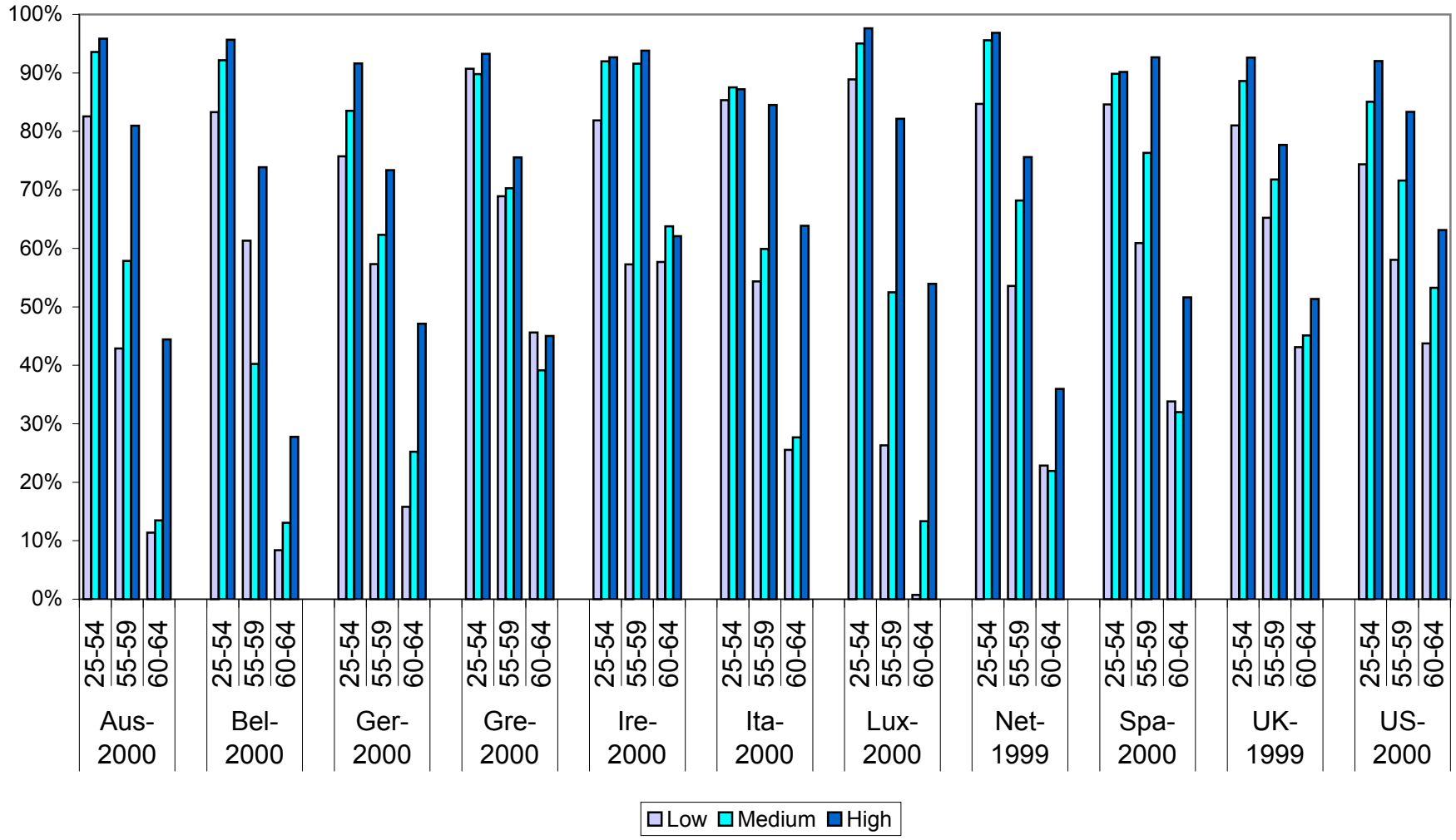


Figure 10B
Employment Rates - Women
by Age and Education Level
11 Countries

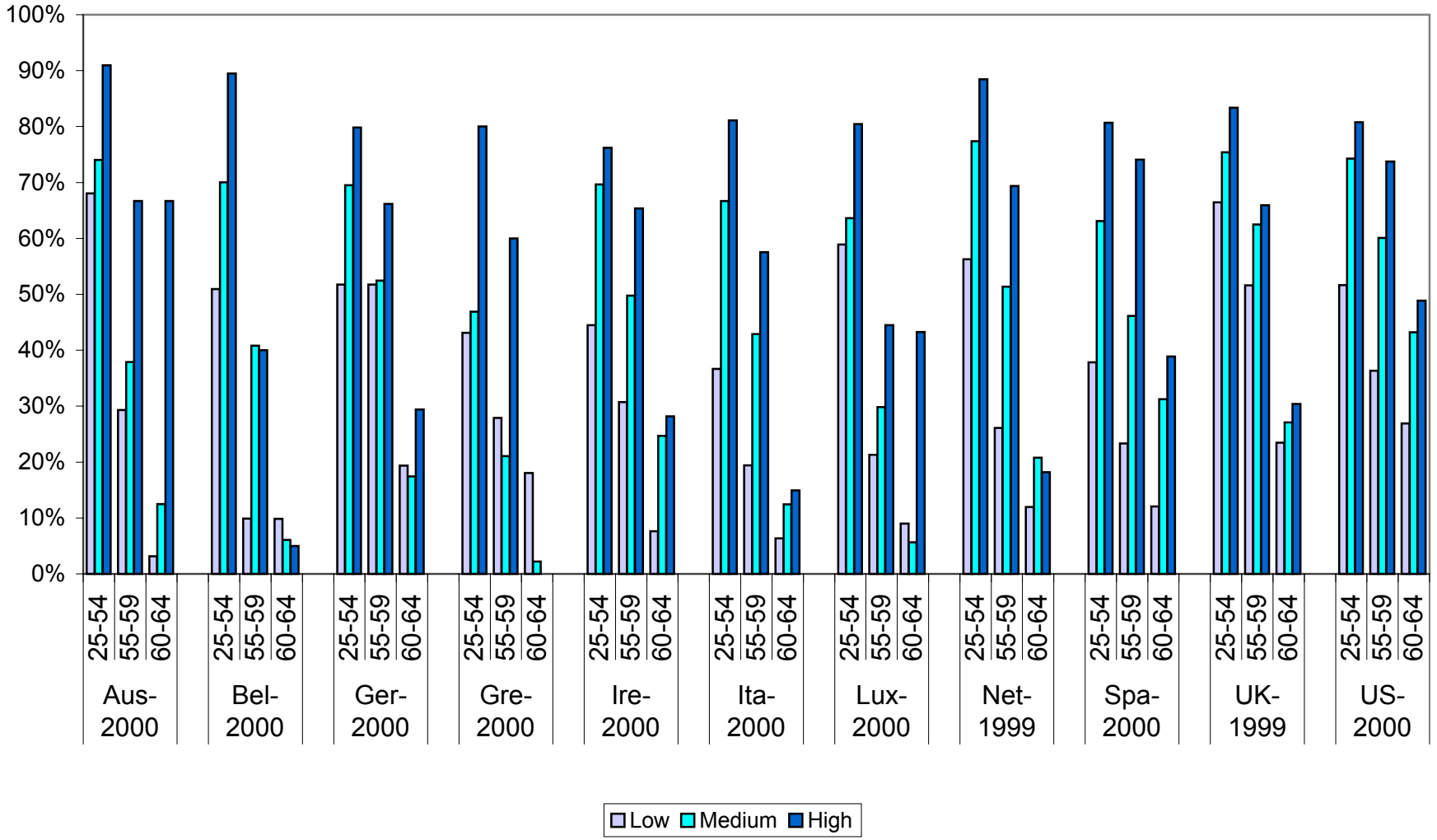


Figure 11A
Distribution of the Employed
by Age and Occupational Group -- Men
6 Countries

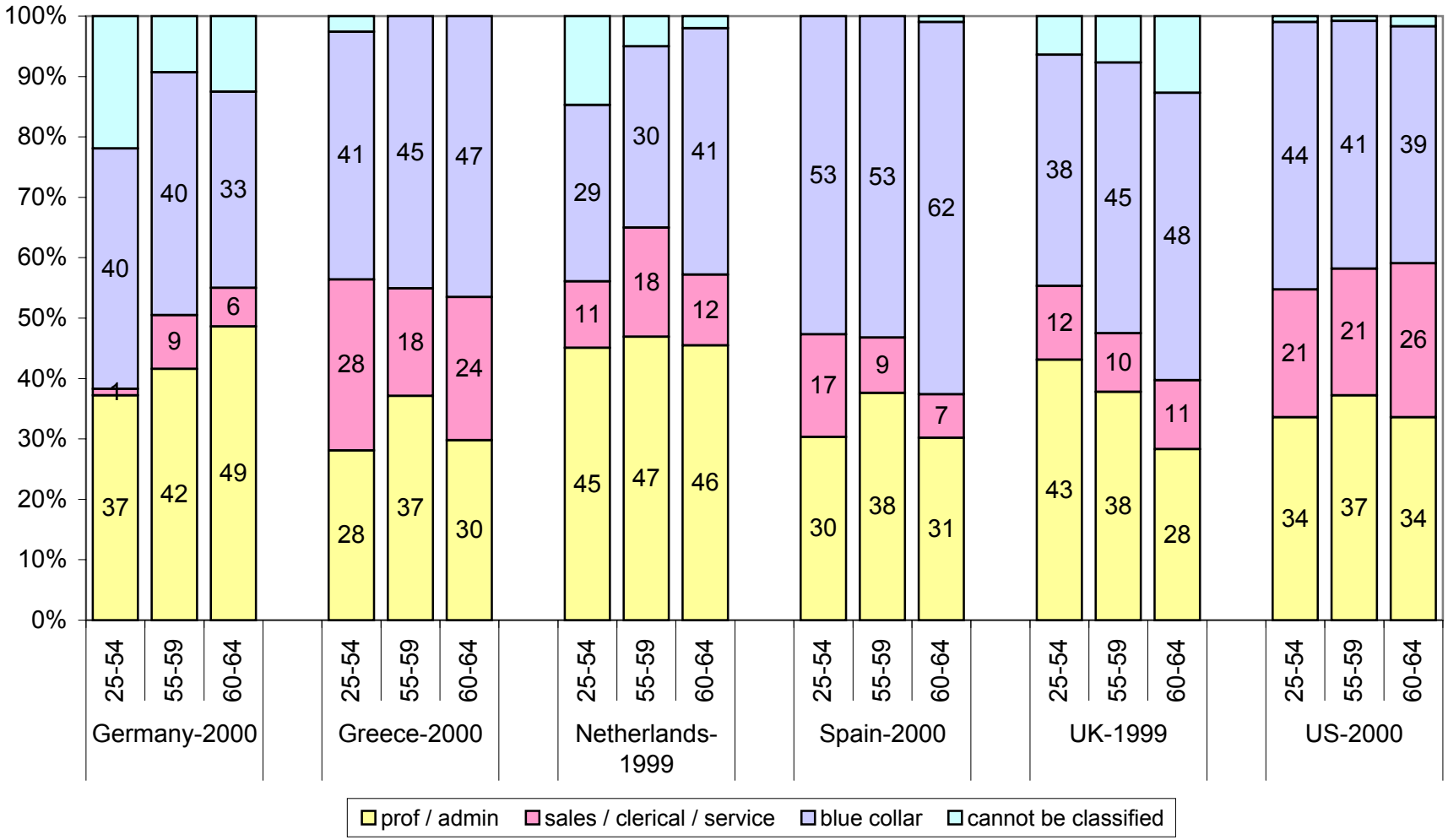


Figure 11B
Distribution of the Employed
by Age and Occupational Group -- Women
6 Countries

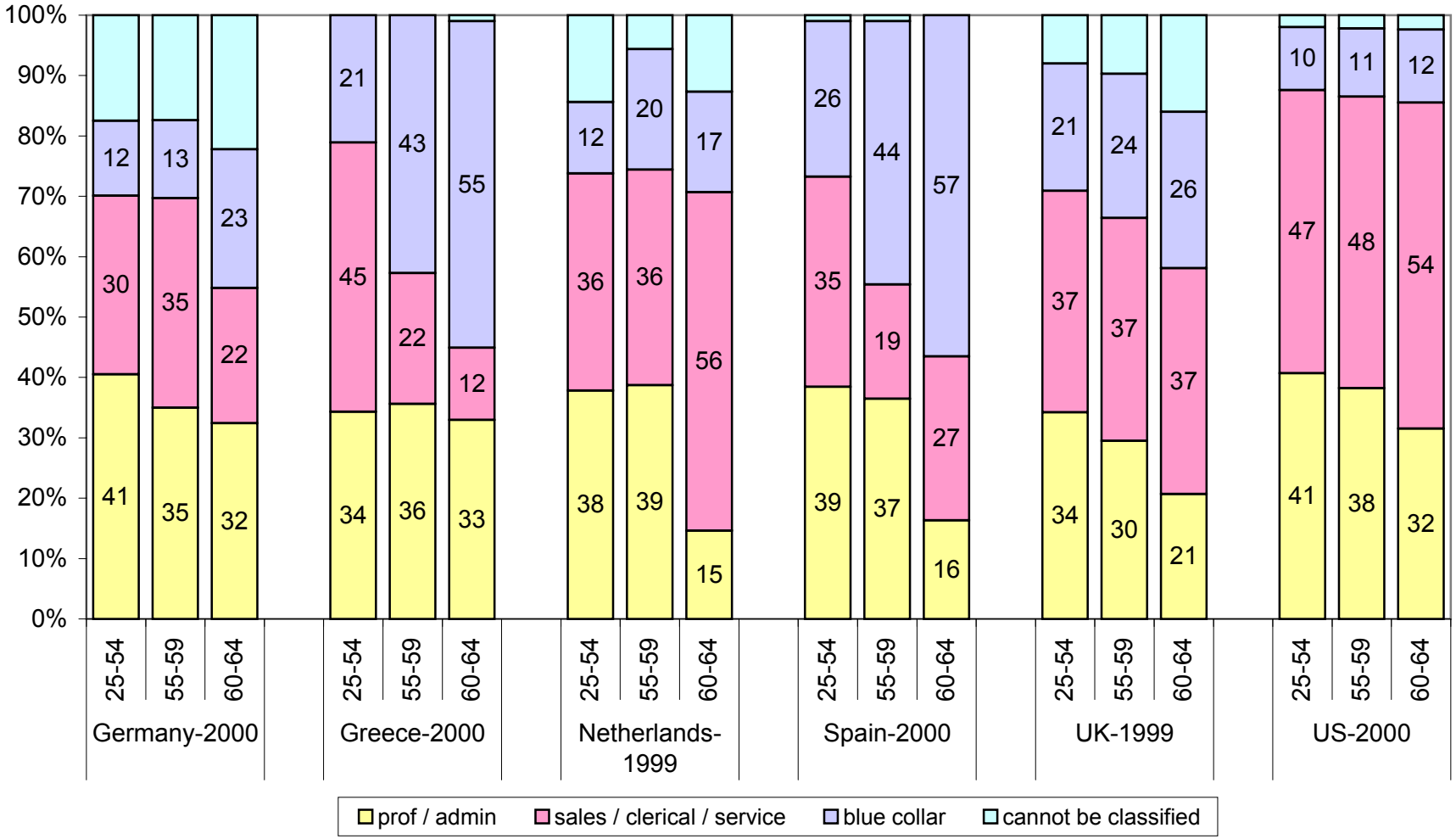


Figure 12A
Distribution of the Employed
by Age and Employment Status (Employee vs Self-Employed) -- Men
6 Countries

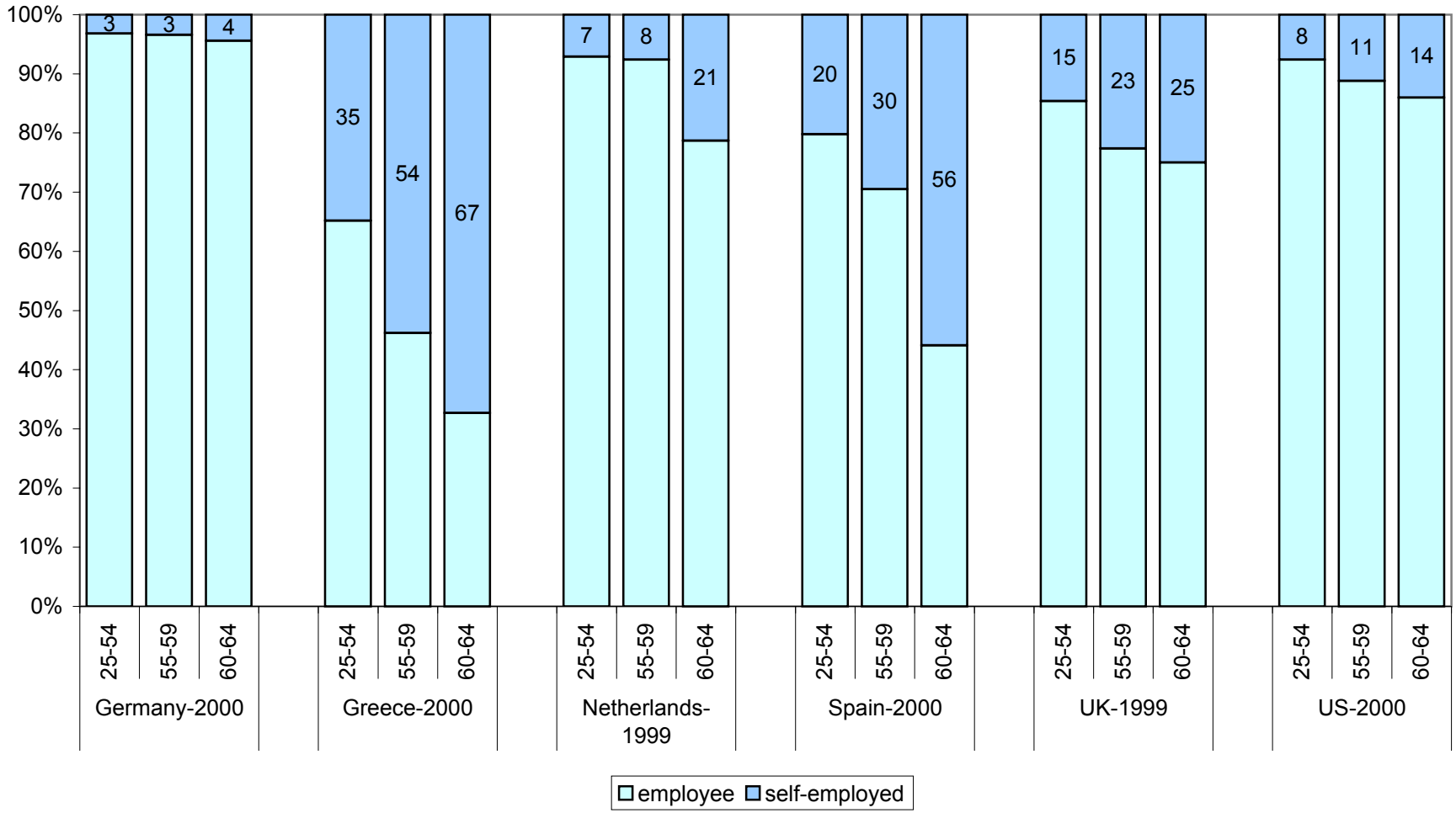


Figure 12B
Distribution of the Employed
by Age and Employment Status (Employee vs Self-Employed) -- Women
6 Countries

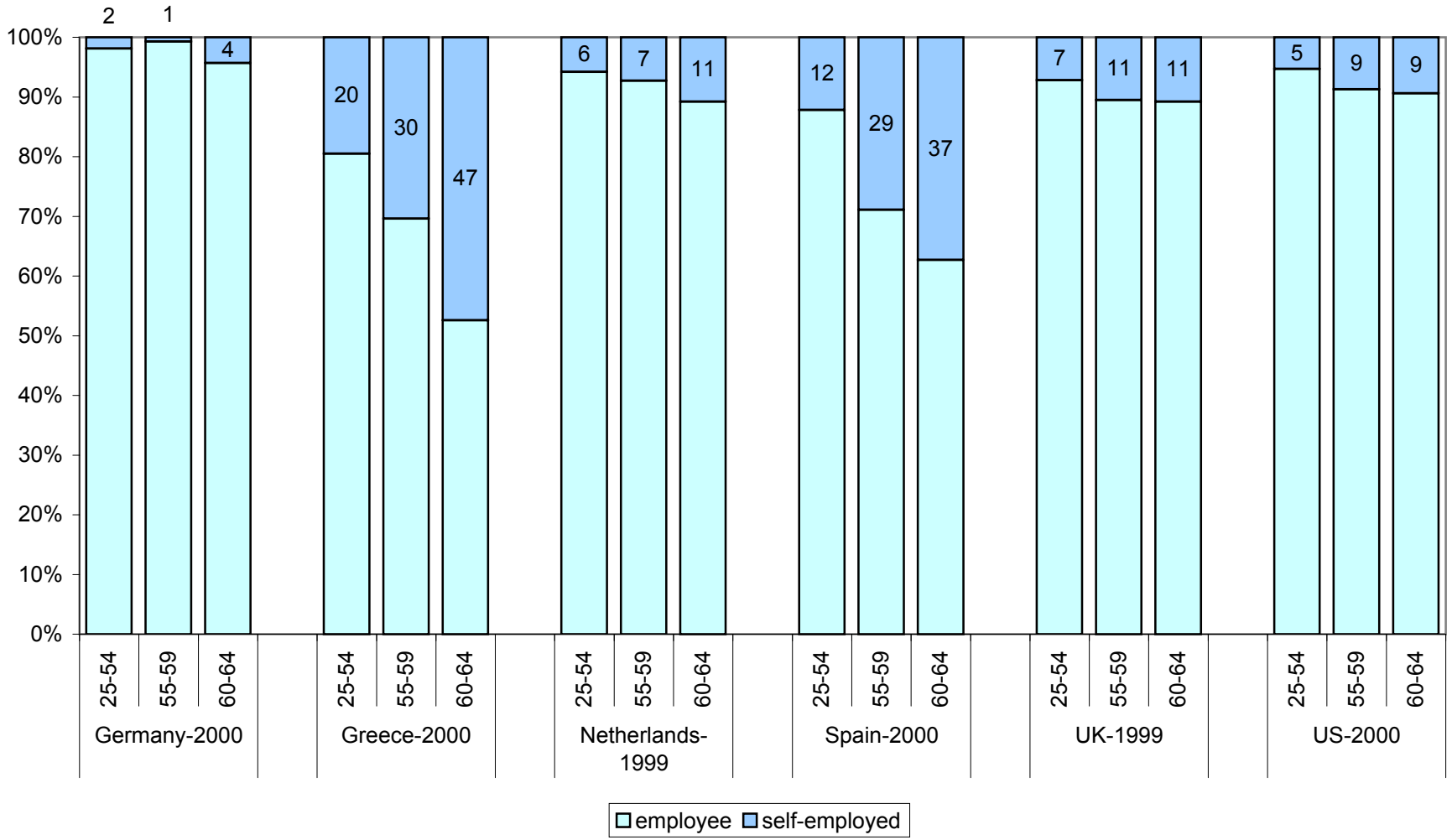


Figure 13A
Distribution of Employed by
Age and Household Income Quartile -- Men
6 Countries

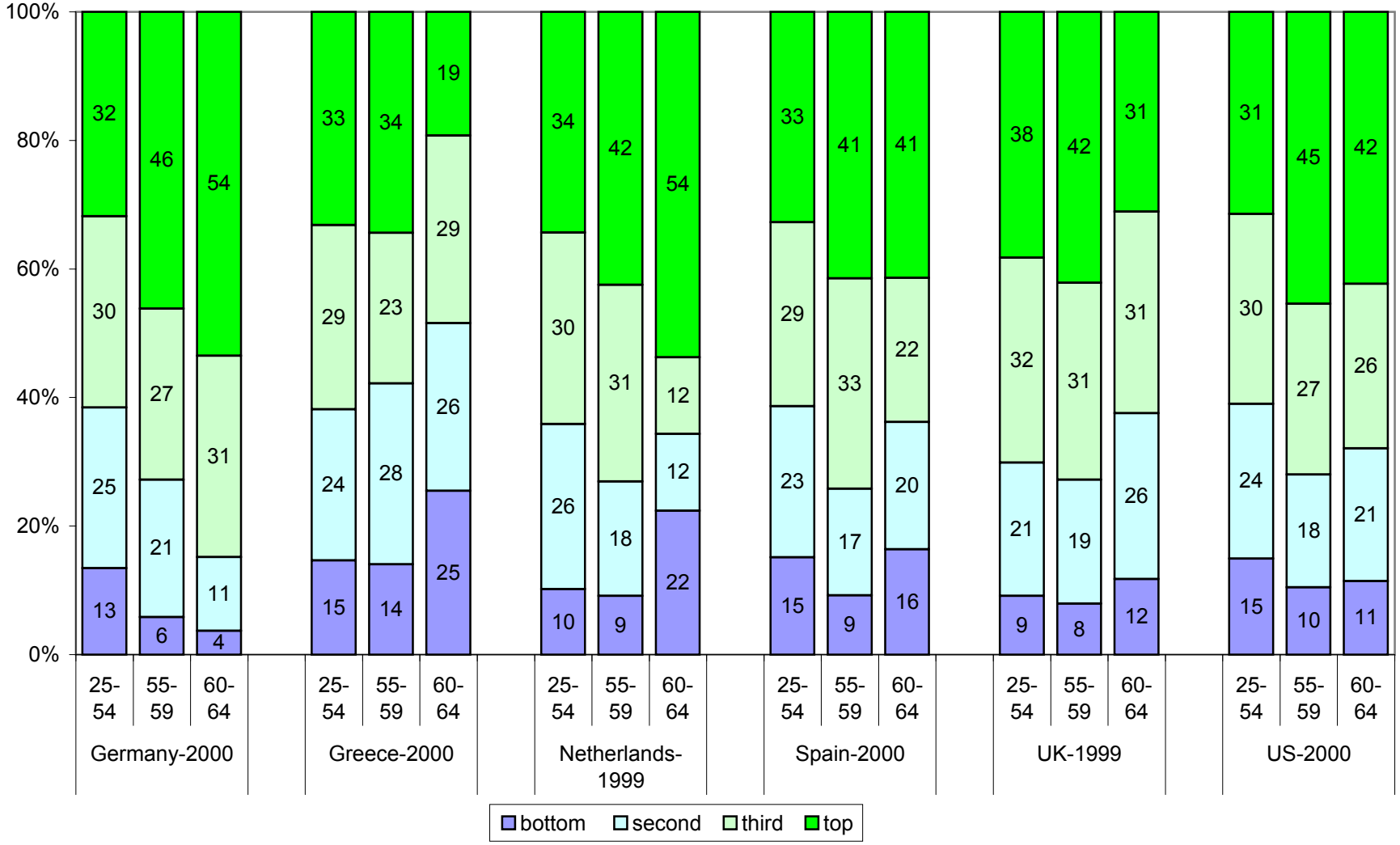
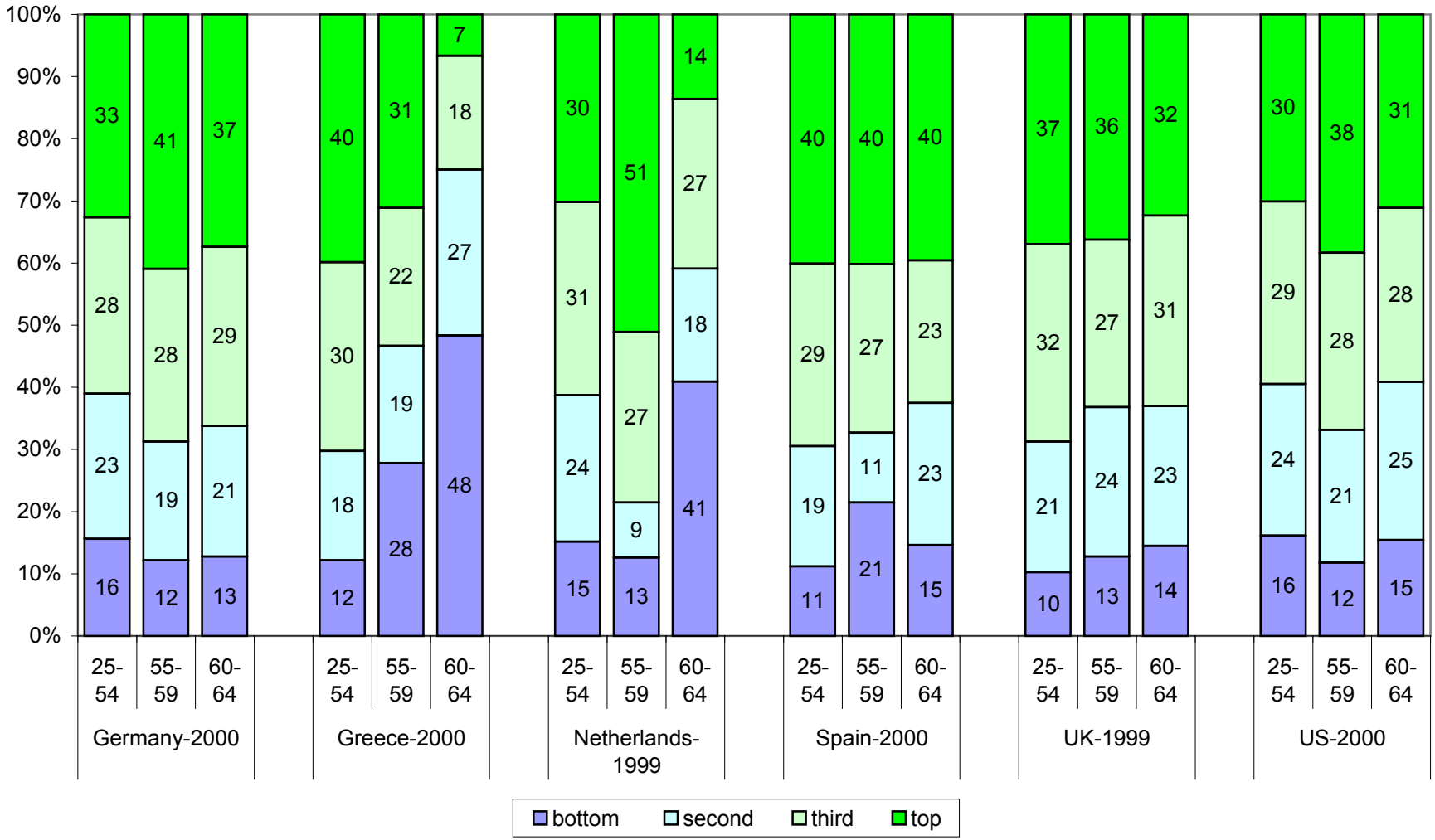


Figure 13B
Distribution of Female Employed
by Age and Household Income Quartile -- Women
6 Countries



APPENDIX TABLE 1.
UNITED STATES -- 2000
Employment and Hours among Prime-age and Older Workers

EMPLOYMENT RATES BY CHARACTERISTIC

A AGE

	men	women
25-44	87.1%	74.2%
45-54	85.0%	74.7%
55-59	73.8%	60.5%
60-64	54.6%	41.2%
65-69	29.4%	18.8%
70-74	17.8%	11.4%
75+	8.4%	2.9%

B FAMILY TYPE

		men	women
25-54	Alone	83.0%	81.2%
	Couple	87.1%	77.6%
	Complex	86.9%	72.7%
55-59	Alone	66.7%	67.8%
	Couple	76.8%	58.4%
	Complex	72.4%	59.3%
60-64	Alone	46.0%	46.8%
	Couple	55.9%	38.0%
	Complex	55.7%	42.6%
65-69	Alone	27.0%	27.3%
	Couple	28.9%	14.8%
	Complex	31.8%	18.3%
70-74	Alone	14.1%	13.1%
	Couple	19.3%	9.7%
	Complex	16.3%	12.0%
75+	Alone	6.3%	2.8%
	Couple	9.5%	3.3%
	Complex	7.4%	2.8%

C EDUCATION

		men	women
25-54	Low	74.4%	51.6%
	Medium	85.1%	74.3%
	High	92.0%	80.8%
55-59	Low	58.0%	36.3%
	Medium	71.6%	60.1%
	High	83.4%	73.8%
60-64	Low	43.8%	26.9%
	Medium	53.3%	43.2%
	High	63.1%	48.9%
65-69	Low	20.5%	14.4%
	Medium	28.9%	19.4%
	High	38.2%	22.9%
70-74	Low	10.6%	6.1%
	Medium	17.1%	11.7%
	High	26.6%	18.1%
75+	Low	4.5%	1.3%
	Medium	9.5%	3.5%
	High	12.3%	4.8%

MEAN HOURS WORKED AMONG THE EMPLOYED

AGE

	men	women
25-44	44.3	38.5
45-54	44.7	39.1
55-59	43.6	37.9
60-64	40.5	34.4
65-69	34.5	28.4
70-74	29.6	25.4
75+	30.7	26.3

FAMILY TYPE

		men	women
25-54	Alone	44.6	42.5
	Couple	45.2	39.8
	Complex	44.2	37.9
55-59	Alone	41.3	40.3
	Couple	44.1	36.5
	Complex	43.6	38.1
60-64	Alone	37.5	37.0
	Couple	40.5	31.5
	Complex	41.7	36.9
65-69	Alone	33.2	31.9
	Couple	33.3	23.2
	Complex	38.0	31.5
70-74	Alone	32.8	28.5
	Couple	28.3	23.0
	Complex	32.0	28.5
75+	Alone	31.8	25.7
	Couple	31.3	21.3
	Complex	31.2	34.5

EDUCATION

		men	women
25-54	Low	41.8	37.5
	Medium	43.7	38.1
	High	45.8	39.4
55-59	Low	41.7	36.2
	Medium	42.7	37.1
	High	45.1	38.9
60-64	Low	39.4	35.1
	Medium	39.8	34.4
	High	41.9	33.8
65-69	Low	31.2	26.4
	Medium	35.1	27.2
	High	34.4	31.5
70-74	Low	29.4	27.4
	Medium	30.3	25.6
	High	29.3	25.7
75+	Low	24.8	25.4
	Medium	31.0	24.6
	High	34.2	28.3

APPENDIX TABLE 1.
UNITED STATES -- 2000
Employment and Hours among Prime-age and Older Workers

	CHARACTERISTICS OF THE EMPLOYED				MEAN HOURS WORKED AMONG THE EMPLOYED			
D	OCCUPATION				OCCUPATION			
			men	women			men	women
	25-54	prof / admin	33.60	40.70	25-54	prof / admin	45.8	40.5
		sales / clerical / service	21.20	46.90		sales / clerical / service	43.2	37.4
		blue collar	44.30	10.40		blue collar	43.0	39.0
		cannot be classified	<1%	2.00		cannot be classified		
	55-59	prof / admin	37.20	38.20	55-59	prof / admin	44.8	39.6
		sales / clerical / service	21.00	48.30		sales / clerical / service	42.5	36.8
		blue collar	41.00	11.30		blue collar	42.1	38.8
		cannot be classified	0.80	2.20		cannot be classified		
	60-64	prof / admin	33.60	31.50	60-64	prof / admin	41.1	36.4
		sales / clerical / service	25.50	54.00		sales / clerical / service	38.4	33.6
		blue collar	39.20	12.10		blue collar	40.1	36.7
		cannot be classified	1.70	2.40		cannot be classified		
	65-69	prof / admin	29.70	24.20	65-69	prof / admin	37.0	33.5
		sales / clerical / service	29.40	62.60		sales / clerical / service	30.9	27.3
		blue collar	37.80	9.20		blue collar	34.1	29.9
		cannot be classified	3.10	4.00		cannot be classified		
	70-74	prof / admin	33.60	22.00	70-74	prof / admin	29.6	32.9
		sales / clerical / service	31.20	62.00		sales / clerical / service	26.8	22.6
		blue collar	31.80	11.40		blue collar	27.2	30.4
		cannot be classified	3.30	4.60		cannot be classified		
	75+	prof / admin	25.80	23.90	75+	prof / admin	34.2	29.1
		sales / clerical / service	32.50	63.80		sales / clerical / service	26.0	23.8
		blue collar	35.40	9.80		blue collar	28.0	26.0
		cannot be classified	6.30	2.50		cannot be classified		
E	EMPLOYMENT STATUS				EMPLOYMENT STATUS			
			men	women			men	women
	25-54	employee	92.40	94.70	25-54	employee	43.90	38.69
		self-employed	7.60	5.30		self-employed	47.84	37.08
	55-59	employee	88.80	91.30	55-59	employee	43.07	37.94
		self-employed	11.20	8.70		self-employed	46.08	35.53
	60-64	employee	86.00	90.60	60-64	employee	39.84	34.65
		self-employed	14.00	9.40		self-employed	43.14	32.16
	65-69	employee	79.70	88.10	65-69	employee	33.70	28.73
		self-employed	20.30	11.90		self-employed	35.13	24.99
	70-74	employee	75.30	84.40	70-74	employee	27.71	25.42
		self-employed	24.70	15.60		self-employed	33.04	27.76
	75+	employee	73.00	74.10	75+	employee	28.60	25.37
		self-employed	27.00	25.90		self-employed	34.87	26.43
F	HH INCOME QUARTILES				HH INCOME QUARTILES			
			men	women			men	women
	25-54	bottom	14.9%	16.1%	25-54	bottom	41.5	36.3
		second	24.1%	24.4%		second	43.2	37.8
		third	29.5%	29.4%		third	44.8	38.6
		top	31.4%	30.1%		top	46.2	40.5
	55-59	bottom	10.4%	11.8%	55-59	bottom	38.9	35.0
		second	17.6%	21.3%		second	42.9	36.6
		third	26.6%	28.5%		third	43.0	38.1
		top	45.4%	38.4%		top	45.3	38.8
	60-64	bottom	11.4%	15.4%	60-64	bottom	36.7	31.0
		second	20.7%	25.4%		second	40.5	34.1
		third	25.6%	28.0%		third	40.0	35.4
		top	42.3%	31.1%		top	41.9	35.3
	65-69	bottom	10.1%	17.3%	65-69	bottom	31.6	25.3
		second	19.3%	24.9%		second	29.3	26.8
		third	29.7%	27.5%		third	34.9	29.2
		top	40.9%	30.3%		top	36.5	29.9
	70-74	bottom	9.4%	16.7%	70-74	bottom	26.0	23.1
		second	19.0%	28.0%		second	27.5	23.4
		third	26.7%	32.5%		third	30.3	25.8
		top	44.9%	22.8%		top	31.2	31.1
	75+	bottom	10.4%	19.1%	75+	bottom	27.9	15.2
		second	23.6%	28.4%		second	25.1	23.1
		third	28.5%	23.6%		third	30.1	30.1
		top	37.5%	29.0%		top	36.1	31.4

APPENDIX TABLE 1.
UNITED STATES -- 2000
Employment and Hours among Prime-age and Older Workers

G MEAN HOURS WORKED AMONG THE EMPLOYED by ESTIMATED (STANDARDIZED) HOURLY EARNINGS

	hours worked per week	men	women
25-54	15 to 29 hours	$0.76	$0.60
	30-39 hours	$1.00	$0.75
	40-49 hours	$1.18	$0.90
55-59	15 to 29 hours	$0.99	$0.56
	30-39 hours	$1.12	$0.78
	40-49 hours	$1.23	$0.97
60-64	15 to 29 hours	$0.65	$0.51
	30-39 hours	$1.04	$0.74
	40-49 hours	$1.27	$0.81
65-69	15 to 29 hours	$0.62	$0.45
	30-39 hours	$0.92	$0.65
	40-49 hours	$1.02	*
70-74	15 to 29 hours	$0.47	$0.38
	30-39 hours	$0.74	$0.46
	40-49 hours	*	*
75+	15 to 29 hours	$0.55	$0.31
	30-39 hours	$0.89	$0.62
	40-49 hours	*	*

*** =** indicates cell size too small to report (fewer than 30 employed person in cell)

APPENDIX TABLE 2.
Eleven Countries -- Approximately 2000
Employment and Hours among Prime-age and Older Workers

A. Employment Rates by Age Group

		age 18-24	age 25-44	age 45-54	age 55-59	age 60-64	age 65-69	age 70-74	age 75+
Austria-2000	men	68.1%	93.1%	91.6%	58.7%	14.6%	3.6%	0.8%	0.0%
	women	60.5%	78.7%	66.6%	36.1%	9.9%	2.0%	0.0%	0.3%
Belgium-2000	men	41.6%	91.6%	88.6%	59.8%	12.6%	4.8%	2.3%	0.0%
	women	37.4%	77.5%	61.7%	26.1%	8.0%	1.4%	0.3%	0.3%
Germany-2000	men	59.9%	86.8%	82.2%	64.9%	31.4%	6.9%	4.2%	1.0%
	women	56.8%	68.9%	70.1%	54.6%	20.1%	2.4%	2.1%	0.3%
Greece-2000	men	36.4%	90.0%	92.5%	70.2%	44.7%	14.5%	4.7%	3.8%
	women	30.5%	58.4%	44.7%	29.1%	15.6%	5.1%	0.6%	0.9%
Ireland-2000	men	73.1%	88.3%	82.6%	67.2%	58.7%	26.3%	13.6%	7.5%
	women	57.9%	64.5%	55.7%	40.0%	14.0%	6.3%	1.3%	0.1%
Italy-2000	men	40.0%	85.8%	88.0%	58.3%	28.5%	11.9%	7.0%	4.3%
	women	27.5%	57.3%	45.4%	25.6%	7.5%	2.8%	0.8%	0.5%
Luxembourg-2000	men	49.2%	95.3%	90.3%	53.5%	15.8%	0.0%	1.4%	0.0%
	women	46.6%	71.5%	53.8%	26.6%	10.5%	1.2%	0.0%	0.0%
Netherlands-1999	men	52.1%	86.7%	80.3%	63.0%	23.7%	6.0%	2.8%	2.8%
	women	68.8%	77.1%	61.4%	41.1%	14.3%	2.5%	1.5%	0.0%
Spain-2000	men	49.5%	87.8%	85.5%	66.5%	35.2%	5.4%	0.6%	0.8%
	women	34.7%	57.3%	44.2%	27.9%	14.4%	2.3%	0.8%	0.3%
UK-1999	men	65.2%	85.4%	82.6%	67.2%	43.9%	12.9%	6.3%	2.3%
	women	57.8%	70.3%	72.2%	54.0%	24.2%	6.4%	3.0%	0.5%
US-2000	men	65.3%	87.1%	85.0%	73.8%	54.6%	29.4%	17.8%	8.4%
	women	63.6%	74.2%	74.7%	60.5%	41.2%	18.8%	11.4%	2.9%

B. Average Usual Weekly Hours (Among the Employed)

		age 18-24	age 25-44	age 45-54	age 55-59	age 60-64	age 65-69	age 70-74	age 75+
Austria-2000	men	39.1	44.1	43.4	46.1	*	*	*	*
	women	34.9	33.6	37.6	40.8	*	*	*	*
Belgium-2000	men	37.9	45.4	44.1	44.7	*	*	*	*
	women	32.2	34.8	34.4	31.5	*	*	*	*
Germany-2000	men	37.0	44.1	44.2	43.8	40.1	28.1	*	*
	women	35.8	33.5	33.5	33.3	26.3	*	*	*
Greece-2000	men	43.2	46.0	46.5	47.7	44.2	44.5	*	*
	women	38.3	39.3	38.9	34.8	32.7	37.4	*	*
Ireland-2000	men	39.7	45.6	44.5	42.8	43.1	32.8	*	*
	women	34.6	32.4	29.8	25.1	*	*	*	*
Italy-2000	men	40.5	43.8	43.5	44.8	42.7	41.7	34.0	*
	women	35.9	36.0	35.6	37.8	37.4	*	*	*
Luxembourg-2000	men	42.1	44.3	44.3	44.4	*	*	*	*
	women	40.3	35.1	31.1	37.8	*	*	*	*
Netherlands-1999	men	29.7	41.6	41.9	39.4	34.5	*	*	*
	women	26.0	26.9	25.5	25.1	16.9	*	*	*
Spain-2000	men	40.3	44.4	44.5	44.5	46.1	*	*	*
	women	37.2	37.0	37.4	34.8	39.0	*	*	*
UK-1999	men	40.1	46.5	46.5	45.1	39.6	28.0	23.7	21.9
	women	34.8	33.4	33.1	30.7	25.8	19.5	15.2	*
US-2000	men	35.6	44.3	44.7	43.6	40.5	34.5	29.6	30.7
	women	32.5	38.5	39.1	37.9	34.4	28.4	25.4	26.3

*** =** indicates cell size too small to report (fewer than 30 employed person in sample)