Have US Workers' Job Security Perceptions Decreased Since the 1990 Recession?

Major Paper

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Abstract

In this paper, I verify whether American workers changed their perceptions regarding job security since the 1990 recession. Using data from the General Social Survey from 1977 to 2006, and based on three different measures of perceived insecurity, I find that insecurity is highly cyclical and shows no significant sign of secular increase since the early 1990s. Although the perceptions of insecurity did not change significantly across time, substantial differences in levels of insecurity exist across worker groups. In particular, low-skilled, blue-collar, goods-producing industry, non-white, part-time and unionized workers perceive that they have low job security relative to their respective counterparts.

1 Introduction

Almost a decade and a half ago, job security became a much debated public issue in the United States. In 1995, the former Chairman of the Federal Reserve, Alan Greenspan, declared in front of the Economic Club of Chicago that even though job insecurity was not a new phenomenon, it was becoming "particularly pronounced" in recent years. Such comments spurred many media reports on job security, most claiming that workers were becoming more anxious about losing their jobs.[1] The general belief was that the American labour market had changed due to rapid technological advances and to firm downsizing.

The issue of job security also received its share of interest amongst academic researchers. Most studies used objective measures of ex-post labour market realizations such as job loss rates, displacement rates and separations probabilities (e.g. see Farber (1997), Aaronson & Sullivan (1998) and Valletta (1999)). The main conclusion coming out of these studies is that actual job security declined in the early to mid-1990s. The reported drop was, however, not as pronounced as Greenspan's comments and media reports previously suggested.

A specific dimension of job security that received much less attention is the worker's perception of his own job security. This dimension differs in that it applies to every worker while objective measures (e.g. separation rates and probabilities) infer from the minority of workers who lost their job. Subjective data may identify changes that objective data may not because they are two different economic variables. For instance, a change in the firm's layoff policy might greatly influence perceptions,

[1] These include articles from the Washington Post, the New York Times, the Wall Street Journal and the USA Today (Schmidt (1999)).

even if layoffs do not actually change (Brochu & Zhou (2009)). Most studies found that the early 1990s was a period of high perceived insecurity (US: Aaronson & Sullivan (1998), Schmidt (1999), Canada: Brochu & Zhou (2009) and UK: Green, Felstead & Burchell (2000), Green (2003)). Some went further suggesting that the high perceived insecurity resulted from a structural change in the workers' perceptions (i.e. Schmidt (1999)) that started in the early 1990s. Others, looking at a sample that extends the analysis in the early 2000s, concluded that perceived insecurity is cyclical in nature (i.e. Brochu & Zhou (2009) for Canada and Green (2003) for the UK).

The 1990s decade began with a recession that started in July 1990 and ended in March 1991 for the US. Although milder than the recession of the early 1980s, it was characterized by a slower recovery. In that respect, Gardner (1994) found that "the labour market continued to deteriorate long after other economic indicators began to improve." The US unemployment rate peaked in June 1992, more than a year after the recession ended. At that point, the number of job losses, discouraged workers and involuntary part-time workers kept increasing, indicating that the labour market was still slack. The number of discouraged workers[2] stopped increasing only two and a half years after the official end date of the recession (Gardner (1994)). It was not until late in 1993 that the number of involuntary part-time workers peaked (Gardner (1994)). This is about one and a half years after the unemployment rate improved, and more than two and a half years after the economy was declared out of recession. Even slower to recover were the job loss rates: they peaked in 1995 and gradually improved between 1995 and 1997 (Farber (2005)).

[2] A discouraged worker refers to a person that dropped out of the labour force because of poor job prospects.

The 1990s recession was unusually hard on some occupation and industry groups but unusually gentle on others. Highly educated, white-collar and service industry workers faced noticeable increases in their involuntary job loss rates during the early to mid-1990s (Farber (1997), Aaronson & Sullivan (1998)).[3] Unlike prior recessions, low-skilled blue-collar workers in the manufacturing sector were not affected as much (Gardner (1994)).

Perceived job insecurity can play an important role in the labour market, particularly through its joint causal relationship with many labour market outcomes. First, labour market institutions such as job protection regulations and the generosity and availability of unemployment benefits influence and shape the worker's perceptions about his own job security.

Second, perceptions themselves might influence labour market outcomes. Perceptions influence the workers' behavior, which affects employer-employee relationships such as the wage determination process. Outcomes like wages, employment, consumption and savings may all be significantly affected by perceived job security (Manski & Straub (2000)). Numerous policymakers and analysts claimed that high job insecurity contributed to the low wage inflation of the 1990s (Aaronson & Sullivan (1998), Katz & Krueger (1999)). Campbell, Carruth, Dickerson & Green (2007) tested this claim for the UK and concluded that high unemployment fears for men were associated with lower wage growth, all other factors held constant. Perceived job insecurity may also influence human capital investments; workers who feel less secure substitute away from firm-specific skills in favor of general (transferable) skills that are useful to many employers (Schmidt

[3] Some researchers referred to this trend as the "democratization" process of the labour force (e.g. see Aaronson & Sullivan (1998), Borland (2002), Böckerman (2004)).

(1999)). Finally, some suggested that high insecurity negatively affects job quality and important facets of life such as health (e.g. Green (2003), amongst many others).

This paper investigates the long-run changes in job insecurity perceptions for the United States from 1977 to 2006. A major axis of my paper is to disentangle secular changes from cyclical effects. In particular, I analyze whether there has been a structural rise in perceived insecurity since the early 1990s, as was suggested by Schmidt (1999).[4] By extending the data well beyond the mid-1990s, I can truly determine if there has been a structural break in perceived job insecurity following the recession of the early 1990s.

My results show that aggregated insecurity perceptions have not been structurally higher since the early 1990s. In fact, perceived insecurity is found to be highly cyclical, closely monitoring the unemployment rate throughout the 1977-2006 period. The most important variations of perceived insecurity are found to be across sub-groups of workers. Most notably, perceived job insecurity is particularly pronounced for blue-collar, lowly educated, part-time, non-white and goods-producing industry workers. I also find that unionized workers are more insecure in regards to their perceptions, particularly about finding a job that offers similar income and fringe benefits. Finally, workers with high personal income seem less insecure about losing their job in the next twelve months, but more so about finding a comparable one if they were to become unemployed.

[4] Her sample ends in 1996 – just a few years following the official end of the 1990s recession.

This paper is organized as follows. Section 2 offers a literature review of American and International studies on perceived job insecurity. This section also includes a discussion on studies that analyzed job security through objective measures. Section 3 discusses data and sample restrictions. Section 4 illustrates the empirical findings, while Section 5 verifies the robustness of those findings. Finally, Section 6 offers a summary of the main results.

2 Literature Review

2.1 Literature on Job Security Perception

Aaronson & Sullivan (1998) look at US job security perception trends using data from the General Social Survey (GSS) from 1977 to 1996. They use two measures of perceived insecurity: one about job loss and another about finding a job that offers similar benefits to that of the present job (say a comparable job). In a descriptive analysis, both (aggregated) measures of perceived insecurity are shown to follow a cyclical pattern up to the late 1980s. After the 1990 recession, workers are found to become relatively more insecure in their perceptions, particularly about losing their current job. Aaronson & Sullivan (1998) also analyze insecurity in a multi-variate framework using an ordered probit model for each measure.[5] Their ordered probit results support those obtained from the descriptive statistics. The authors find that groups of workers who had high job security prior to the 1990s experienced the biggest increase in perceived insecurity after 1990 (for both perceived insecurity measures). This includes white-collar workers, service industry workers, and highly educated workers. Perceived job loss insecurity is not found to differ significantly across gender and is slightly higher for non-white workers.

Schmidt (1999) also examines US perceived job security patterns using GSS data from 1977 to 1996. Her analysis includes two measures of insecurity perception. The first involves job loss and is identical to that of Aaronson & Sullivan (1998). The second measure is a combination of perceived insecurity about losing a job and about finding a comparable one. Workers are considered to have perceptions of insecurity by this second measure if they express fears with respect to both of its components.

[5] Aaronson & Sullivan (1998) did analyze the ordered probit using insecurity about finding a comparable job as the dependent variable but do not offer these results. However, they noted that the results were in line with those of their descriptive statistics.

Using descriptive statistics and probit models for both insecurity measures, Schmidt (1999) finds that perceptions have been cyclical prior to the 1990 recession. Perceived insecurity, however, increased noticeably in the early to mid-1990s. During this period, workers became overly pessimistic relative to market indicators (e.g. unemployment rate), particularly during the recovery years (1993-1996). Schmidt (1999) concluded that US perceived job insecurity exhibited a structural increase since the early 1990s. Her results also support that sub-groups with low perceived insecurity prior to 1990 experienced higher perceived insecurity after the recession of the early 1990s. The biggest increase in perceived job insecurity came from white-collar, service occupation, older, and highly educated workers. According to Schmidt's (1999) second measure of insecurity perception, white-collar and older workers had the highest increase in perceived job insecurity.

Manski & Straub (2000) analyze US job security perceptions for the mid-1990s. They use data from the Survey of Economic Expectations (SEE) from 1994 to 1998. Unlike the GSS, the SEE asks *probabilistic* questions about the workers' expectations of job loss and search outcomes. The job security perception questions in the SEE are otherwise similar to those of the GSS. Manski & Straub (2000) believe that probabilistic questions have the advantage of being more interpersonally comparable and more informative than the qualitative questions of the GSS. They outline two downfalls of the GSS. First, they mention that there is no reason, a priori, to expect that people are able to identically interpret answers like "fairly quickly" or "somewhat easy". This makes it difficult to interpersonally compare the workers' responses. Second, the information retrieved from the GSS is ordinal in nature, meaning that "the most that the answers reveal is that workers who report "very likely" perceive that they are more likely to lose their job that those who report fairly likely".

I would like to note, however, that it may also be quite difficult for some individuals to appropriately evaluate their job loss probability or the probability of finding a comparable job. Thus, it is my belief that the SEE also faces some challenges. Furthermore, I believe that the GSS is more useful than the SEE because it permits the distinction between cyclical and secular changes of perceived job insecurity. The SEE started in 1994, making it inadequate to examine if perceived job insecurity has been structurally higher since the early 1990s. It appears to me that the drawbacks of the qualitative questioning of the GSS are outweighed by the advantage of being able to compare the cyclical patterns of perceived insecurity over a period of 30 years.

Manski & Straub (2000) use two measures of perceived insecurity: job loss insecurity and insecurity about finding a comparable job. The authors find that perceived insecurity peaked in 1995. At that point it began to fall, suggesting that the high insecurity felt in the early to mid-1990s may have been of cyclical nature. This claim cannot be verified from their study, as Manski & Straub's (2000) sample is inadequate to evaluate cyclical patterns.[6] The probability of feeling insecure about losing a job is found to decrease with education, while that of finding a comparable one increases with schooling. Perceived insecurity is not found to vary across gender, while self-employed workers tend to be more secure (for both measures). Black workers feel more insecure, particularly about the elicited perception of job loss probability. Both perceived insecurity measures are affected differently by the workers' age. Older workers are considerably less likely to fear losing their current job, but believe it would be more difficult to find a comparable one if they were to

[6] Manski & Straub's (2000) coverage was for 1994-1998 and had a sample size of only 3,561 observations.

become unemployed. Younger workers have the opposite type of perceived insecurity, being more anxious about losing their current job but less so about finding a comparable one.

A Canadian study conducted by Brochu & Zhou (2009) looks at long-run trends of job security perceptions. Using Canadian Gallup data (1977-2006), they consider two measures of perceived insecurity: one about job loss and another about finding employment if the worker were to lose his job. The authors find no secular increase in job insecurity perceptions since the early 1990s for Canadian workers. In fact, the high perceived insecurity of the early to mid-1990s seems to be solely due to a longer cyclical movement. They also find that Canadian insecurity perception declined considerably in 1997 and 1998, about one to two years after the end of Schmidt's (1999) and Aaronson & Sullivan's (1998) sample. This might give insight as to why these studies reached different conclusions.

Age and education sub-group differences are found to be similar to those reported in Manski & Straub (2000) and Böckerman (2004). The higher perceived security expressed by white-collar versus blue-collar workers is more pronounced in Brochu & Zhou (2009) than in Aaronson & Sullivan (1998) and Schmidt (1999).[7] Finally, women seem more likely to be anxious about the outcome of their future job search - a result that is shared by Green, Felstead & Burchell (2000), but not by either Manski & Straub (2000) or Aaronson & Sullivan (1998).

[7] The US studies of Schmidt (1999) and Aaronson & Sullivan (1998) find that the perceived insecurity difference between blue-collar and white-collar workers gradually disappeared after the 1990s recession. They both suggested that it seems that there is not more job insecurity difference across both sub-groups.

Green, Felstead & Burchell (2000) analyze aggregated and disaggregated trends of job security perceptions for the United Kingdom (UK). The authors use two surveys: the Social Change and Economic Life Initiative (SCELI) of 1986 and the Skills Survey (SS) of 1997. The authors initially find that perceived risks of job loss did not change much between 1986 and 1997. In fact, the authors found that workers perceived that it would be easier to find a similar job in 1997 compared to 1986. Once controls for the unemployment rate are added, however, they find that perceived job insecurity is higher relative to the unemployment rate in 1997. This latter finding suggests that perceived insecurity may have increased in the UK during this 11 year span. The levels of perceived insecurity are found to vary significantly across sub-groups. Most importantly, Green, Felstead & Burchell (2000) find that professional workers became a great deal more insecure in their perceptions, while sales and manual workers became less insecure. This shift in perceived insecurity across occupation groups is shared by Aaronson & Sullivan (1998) and Schmidt (1999).

Green (2003) examines perceived job insecurity for the US and UK. His US analysis is solely based on raw patterns (in terms of means) of insecurity.[8] He uses data from the GSS (1977-2000), the SCELI (1986) and the SS (1997 and 2001) and considers two insecurity measures: one about job loss and another about finding a comparable job. Interestingly, he finds that there are very similar proportions of US and British workers who reported high levels of perceived job insecurity. While the 1997 UK unemployment rate was 5.8 percentage points lower than that of 1986, Green (2003) finds that British job loss insecurity remained approximately equal for both periods. Controlling for that fact, insecurity was thus relatively higher in 1997 compared to 1986. Perceived job loss insecurity, however, fell considerably in the late 1990s

[8] Green (2003) did not run any regressions using the US GSS data.

(between 1997 and 2001). This drop was so significant that when looking at the whole period (1986-2001), Green (2003) finds no increase in perceived job loss insecurity. A similar pattern is found for the US.

Turning to the US evidence, insecurity about finding a comparable job is found to follow a cyclical pattern from 1977 to 2000. While this type of perceived insecurity increased from the early to mid-1990s, it decreased considerably in the late 1990s (for both the US and UK). The fact that both insecurity measures fell sharply after the mid-1990s leads Green (2003) to cast doubt on Schmidt's (1999) reference to a secular increase of perceived job insecurity for US workers.

Green (2003) finds that, in opposition to prior recessions, perceived job insecurity of American white-collar workers increased, while that of blue-collar workers decreased during the 1990s recession. This reversal caused the insecurity of both groups to converge towards a similar level by the mid-1990s. This finding is shared by Schmidt (1999) and Aaronson & Sullivan (1998). By the end of the 1990s, perceived insecurity of white-collar workers returned to its lower level, and that of blue-collar workers returned to its prior higher level. A very similar pattern is found for the UK when looking up to 2001.

Borland (2002) looks at perceived job insecurity in Australia based on data from the Melbourne Institute phone survey (1999-2002): a quarterly survey that asks probabilistic questions similar to those of the SEE. The author therefore uses the same perceived insecurity measures as Manski & Straub (2000). He finds that perceived job insecurity followed the unemployment rate's movements, which points towards a cyclical pattern. However, the short time span covered by his sample makes it

impossible to conclude anything about the cyclicality of perceived job insecurity. Borland (2002) finds that perceived insecurity increased considerably relative to the unemployment rate after 2001. He finds that perceived insecurity increases with age, decreases with education, and is higher for blue-collar and male workers. Interestingly, Borland (2002) notes that perceived job insecurity does not vary with the workers' work status (part-time or full-time), while it decreases with household income.

Linz & Semykina (2008) examine Russian job security perceptions. The authors examine if insecurity changed in accordance with the different labour market conditions of 1995-1998 and 2000-2004. The former period was characterized by a changing and unstable labour market, while the latter had much more stable conditions (Linz & Semykina (2008)). The authors use data from the nationally representative Russian Longitudinal Monitoring Survey (RLMS) to investigate the 1995 to 2004 period. The RLMS is not a true longitudinal survey as it follows dwellings, not households, across time. Using this survey as longitudinal would result in considerable selection biases (Linz & Semykina (2008)). In order to limit the impacts of possible selection biases and due to attrition problems, the authors decided to use it as repeated cross-sectional data.[9] For instance, attrition problems may arise if the individuals do not change dwellings randomly, i.e. there is something specific about those individuals who changed dwellings that cannot be captured by our measure.

Two perceived insecurity measures are used: one for job loss concerns and another for concerns about finding employment in case of a layoff. The authors find that perceived job insecurity was high in years of economic change (1995-1998) and

[9] To properly use the RMLS as cross-sectional data, the authors account for the correlation between observations by adjusting the standard errors for cluster at the individual level.

lower during the more stable years (2000-2004). The insecurity patterns across worker sub-groups such as gender, age, occupation and education are similar to that found for Canada by Brochu & Zhou (2009).

2.2 Literature on Job Security and Job Stability

Job security literature using objective measures has typically been divided between studies that looked at job security and others at job stability. Job stability refers to long-term employment relationships. A job is said to be unstable if there is a high probability that it will end, irrespective of being caused by a quit or layoff. Lower job stability is commonly captured through an increase in the probability of job separation. Job security refers to a worker being able to stay employed as long as he fulfils job requirements. A job is insecure if there is a high probability of involuntarily job loss. Job security is usually measured through layoff rates, displacement rates or involuntary job loss rates.

2.2.1 Job Security

The evidence accumulated thus far suggests that job losses increased between the late 1980s and mid-1990s. The loss in earnings resulting from a lost job also became much more severe during this period (Stewart (2002)). Such findings support that job security, analyzed through objective measures, declined between the early to mid-1990s (Aaronson & Sullivan (1998)). As of the late 1990s, Farber (1998) found that job losses declined between 1995-1997, which is consistent with the fact that insecurity declined. Finally, it seems that over the past two decades from the late-1970s to early-2000s, job security stayed relatively stable (Stewart (2002)).

Studies on job security have mainly relied on data from the Current Population Survey (CPS), the Displaced Worker Survey (DWS), the Panel Study of Income Dynamics (PSID) or the National Longitudinal Surveys (NLS) (Stewart (2002)). While all these datasets offer objective measures of job security, all of them also contain breaks in their series. This complicates the long-run analysis of job security patterns (Stewart (2002)).

The CPS offers information on job security through supplements conducted once every four-years. Having a four year gap between observations may complicate long-run analysis, as it does not permit to properly analyze cyclical movements.

A major complication of the DWS is its inconsistency across time. From 1984 to 1992, workers were asked about job separations for the past 5 years, and since 1994, respondents are asked about job separations for the past 3 years. Unfortunately, this change occurred during the recovery years following the 1990 recession, which is an important period for my study. This inconsistency cannot be neglected as Stewart (2002) finds that it may affect the job loss rates obtained, at least for the 1993-1995 period.

Although the PSID collects data on job losses, it only does so for household heads. Consequently, studies that used PSID data are generally restricted to male household heads (Stewart (2002)). Stewart (2002) rightfully acknowledges that male household heads may not be representative of all men, and are certainly not representative of the entire population.

Farber (1997) examines job loss rates, re-employment possibilities and lost earnings resulting from a lost job using DWS data (1981-1995). His main finding is that job loss rates are higher in 1993-1995 than in 1981-1985, despite the fact that the former period was during a sustained economic expansion. Although less-educated workers always had higher job loss rates, highly educated workers experienced a considerable increase in the rate of job losses in the 1990s. Furthermore, re-employment probability and probability of part-time employment increased over Farber's (1997) sample. Interestingly, re-employed workers suffered significant losses in earnings compared to what their initial job paid them. This loss was more pronounced for workers with low education levels.

Aaronson & Sullivan (1998) also examine actual job security trends using DWS data from 1979 to 1995. The authors find that displacement rates[10] of high-seniority workers (at least 5 years of tenure) remained elevated well after the end of the 1990 recession. In fact, displacement rates achieved their highest point in 1995. This is consistent with the claim that job security declined for high seniority workers between the early to mid-1990s. The authors also find that highly educated, white-collar and service industry workers experienced the largest increase in displacement rates.

Valletta (1999) examines job security using PSID data (1976-1993). His analysis focuses on job security "in the context of implicit contracts designed to overcome incentive problems in the employment relationships". Such contracts are argued to generate predictions on job security and on the probability of job separations. Analyzing these predictions, he finds that incentives to maintain a long-term employment relationship declined for male and skilled white-collar female workers. This supports the claim

[10] Displacement rates refer to job losses that are not related to a worker's performance (Aaronson & Sullivan (1998)). The term displacement rate is used interchangeably with job loss rate.

that actual job security declined over this period. Moreover, Valletta (1999) hypothesized that the upward trend of job insecurity continued through 1996.

Krolik, McMenamin & Langdon (2002) use data from the Current Employment Survey (CES) and the CPS from 1995-2001 to analyze the US labour market of the early 2000s. The authors note that contrary to the 1990 recession, the recession that started in March 2001 did not spare the manufacturing sector, which had high displacement rates. Moreover, the service-producing industry was not affected as much as in the early 1990s, only being indirectly affected through a lower demand from the manufacturing sector (Krolik, McMenamin & Langdon (2002)). The authors find that job losses affected workers in all occupations and major demographic groups. The steepest declines came, however, from the manufacturing-related field, implying that blue-collar workers were the most affected group (Krolik, McMenamin & Langdon (2002)).

Farber (2005) uses DWS data (1984-2004) to analyze job security through job loss rates. He finds that extending the analysis up to the early 2000s supports his prior findings; displacement rates increased in the early to mid-1990s. Over the 1984-2004 period, he finds that re-employed workers faced substantial drops in earnings relative to what they earned in their previous job, while job security did not decline significantly. Between 1984-2004, Farber (2005) finds two notable periods in which job insecurity was usually high. First, even though the US economy was in a period of strong expansion, job loss rates increased in the 1993-1995 post-recession period. This is consistent with previous studies who found that job security decreased in the early 1990s (i.e. Farber (1997), and Valletta (1999)). However, he finds that job loss rates substantially declined between 1995 and 1997. This suggests that the high insecurity

of the early to mid-1990s was due to a cyclical movement. Second, insecurity levels of the 2001-2004 period are also found to be quite high. Starting towards the end of 2001, the American economy was recovering from the recession and was thus already in expansion. Nonetheless, displacement rates were still increasing in 2004.

Farber (2005) finds that highly educated workers have lower job loss rates and higher re-employment rates. This result is in line with his previous findings (see Farber (1997)). He also finds that the youngest group of workers (20-29) faced higher job loss rates than workers aged between 30-39. However, workers of both older age groups (40-49 and 50-64) had a similar job insecurity pattern to that of workers aged 30-39. Farber's (2005) conclusion that aggregate job insecurity did not significantly increase between 1984 and 2004 have not gone uncontested. For instance, Valletta (2005) looks at involuntary job loss rates using CPS data and finds that they increased between 1976 and 2004, suggesting that job security declined.

Picot & Lin (1997) examine Canadian permanent layoff rates using the Longitudinal Worker File from 1978 to 1994. They find that layoff rates did not follow an upward trend over this period, suggesting that aggregate job insecurity did not increase. Nonetheless, Picot & Lin (1997) find that the probability of a permanent layoff increased for older and highly-paid workers. In another Canadian study, Morissette (2004) uses Longitudinal Worker File data (1983-1999) to examine whether permanent layoff rates increased in Canada. He finds that job loss probability has mildly increased between the 1980s and 1990s. The most important change in the Canadian job security component was a remarkable decrease in hiring rates during the 1990s. This particularly affected young workers.

2.2.2 Job Stability

As mentioned earlier, other studies examined long-term employment relationships through job stability which is mainly captured by an increase in the probability of job separation. A job is considered unstable if there is a high probability that it will end. Most would agree that for the early to mid-1990s, the decline in job security was more pronounced than that of job stability (Stewart (2002)). The general consensus is that if job stability decreased, it was not by much. Furthermore, the modest decline in stability was not found to be persistent through the late 1990s. It nonetheless varied considerably across some groups of workers, consensus being that it decreased for men, high school dropouts and high tenure workers (Stewart (2002)). When looking at an extended period, most academic studies agree that job stability was somewhat stable between the mid-1970s and the early 1990s (Stewart (2002)).

Of the many studies that analyzed job stability in the early to mid-1990s, some found that job stability remained somewhat stable (Diebold, Neumark & Polsky (1997), Gottschalk & Moffitt (1999)), others suggested that job stability moderately declined (Neumark, Polsky & Hansen (1999), Jaeger & Stevens (1999)), and finally some reported more pronounced declines (Rose (1995), Boisjoly, Duncan & Smeeding (1994)). I now review some of these studies.

Neumark, Polsky & Hansen (1999) use CPS data to infer US job stability trends by comparing the following periods: 1983-1987, 1987-1991 and 1991-1995. They find evidence of lower (aggregate) job stability during the first half of the 1990s. The authors suggest that this mild increase might be caused by changes in the demographic characteristics of the workforce. Workers that were mostly affected

include: black workers, workers of the manufacturing sector, high tenure workers, older workers and male workers.

Jaeger & Stevens (1999) reach similar conclusions to those of Neumark, Polsky & Hansen (1999) using data from the PSID and the CPS (1983-1996). The decline in job stability is found to be particularly strong for high tenure workers. They find that instability becomes even more pronounced once controls such as the workers' age are included.

Gottschalk & Moffitt (1999) offer a comparative study of job stability patterns using data from the Survey of Income and Program Participation (SIPP) and from the PSID from 1983 to 1995. Contrary to the studies of Jaeger & Stevens (1999) and Neumark, Polsky & Hansen (1999), the authors find no evidence (from neither survey) supporting the claim that aggregated job stability decreased since the early 1990s.

Heisz (2005) uses Canadian data from the Labour Force Survey (LFS) (1976-2001) to examine job stability. He finds that stability declined in the 1980s and increased in the 1990s for low-tenure workers.[11] When comparing 1987 to 1995, he finds that job stability remained steady in Canada. Contrary to Heisz (2005), Brochu (2009) finds that there has been a secular increase in Canadian job stability. Using LFS data between 1976 and 2004, Brochu (2009) finds that aggregate job stability increased since the early 1990s. This increase was particularly pronounced for women and low-tenure workers.

[11] Heisz (2005) refers to low tenure if the worker has less than one year of tenure.

3 Data

3.1 About the General Social Survey

My analysis uses data from the American GSS, a nationally representative survey conducted by the National Opinion Research Center (NORC). This survey started in 1972 and has usually been conducted in the months of February, March and April. The survey has been annual from 1972 to 1994, except for three years in which it did not take place (1979, 1981 and 1992). Since 1994, the survey has been biennial.

The GSS contains rich economic, social and demographic information on a sample of English-speaking individuals aged 18 years or older at the time of the survey. Since 2006, Spanish-speaking individuals are also being interviewed to ensure proper representation of the growing Hispanic community. Cross-sectional in nature, the GSS does not follow the same individuals from year to year. It must therefore be used as repeated cross-sectional data.

For my purposes, what is particularly attractive with the GSS is that workers are asked two questions about their job security perceptions. First, workers are asked: "Thinking about the next 12 months, how likely do you think it is that you will lose your job or be laid off—very likely, fairly likely, not too likely, or not at all likely?" and second, they are asked: "About how easy would it be for you to find a job with another employer with approximately the same income and fringe benefits you now have? Would you say very easy, somewhat easy, or not easy at all?"

I believe that analyzing job security through subjective data has many advantages and can be seen as a natural compliment over using objective data. Objective

measures may not always be valid indicators of worker insecurity (Green (2003)) and may not permit credible inference (Manski & Straub (2000)). For instance, perceived risks of job loss are generally found to be good predictors of subsequent unemployment experiences (Green (2003)). This suggests that, when giving subjective responses, workers hold private information that cannot be picked up by objective data (Bryson, Cappellari & Lucifora (2004)).

Both perceived job security questions were asked in all surveys since 1977, except for 1980, 1984 and 1987. This is so because prior to 1988, the job security perception questions were part of a rotation scheme. All rotation items of this scheme were included in two out of every three surveys. This explains why three years in which the survey was conducted do not provide information on perceived job security. After the 1988 survey, the rotation scheme changed as to permit the rotation items to be asked in every survey. In this new scheme, the rotation questions are now included in two out of three questionnaires (also referred to as ballots). Many variables such as the workers' demographic and job characteristics (i.e. age, race, education, occupation and industry) were never part of such rotation and were thus asked in every survey.

I will use data from a total of 18 surveys that cover a 30-year period.[12] This sample will consequently add ten years and five surveys of additional coverage over the previous American studies of Aaronson & Sullivan (1998) and Schmidt (1999). This is very important as it will give me a clearer picture of the trends followed by insecurity perceptions through the 1990s.

[12] i.e. 1977, 1978, 1982, 1983, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1996, 1998, 2000, 2002, 2004, and 2006.

In addition to both perceived insecurity employment questions, the GSS's richness also comes from the many controls one can use. The relevant control variables for my analysis include: year, age, gender, occupation, region, union membership, educational attainment and degree, work status, inflation-adjusted personal income, and industry.[13]

The union variable has not been asked in every survey year because it is a rotation item. The union membership question has been excluded from two survey years in which the job security questions have been asked (1977, 1982). Given that since 1988, the rotation is conducted within samples, the number of workers asked about their union status is considerably smaller than the number of individuals for whom we can obtain information on non-rotation questions (e.g. perceived job security). This does not create any selection problems as the rotation scheme of the union variable is random. It nonetheless implies a loss in precision caused by a reduced sample size.

3.2 Sample Restrictions

My sample consists of workers aged 18-64 years who answered either job security perception questions in one of the 18 surveys used. I exclude students, the self-employed, and farm occupation workers. Observations for which key demographic or job characteristic information is missing are also dropped.[14] In total, 64.68% of

[13] Unfortunately, the GSS did not regularly ask workers about their tenure; defined as the number of ongoing years with the current employer. Though not at the centerpiece of my research on long-run trends of job security perceptions, this information could have helped analyze how perceptions vary with tenure. For instance, it would have enabled me to see if the lower job stability of the early 1990s for high tenure workers (Farber (1997), Valletta (1997) and Aaronson & Sullivan (1998)) resulted in lower levels of perceived job security.

[14] Key demographic or job characteristic variables are those that I include in every regression. The key variables are the year dummies, work status, race, gender, age, education and degree, occupation, industry and region.

observations are dropped, mostly due to missing information on perceived job security.

My sample includes workers who worked either part-time or full-time. Workers who were temporarily not working due to factors such as vacation, illness and strike, are only included if I was able to classify them into either work status. I was able to do so if the worker gave the number of hours he usually works in a given week. Self-employed workers are excluded because they may not have the same notion of perceived job insecurity as people who work for someone else.[15] Unemployed, retired or housekeeping individuals are excluded, since the job security questions are not relevant for those individuals. Students are dropped on the basis that paid work is not their main labour market activity per se.

I impose an upper age limit of 64 years to ensure that my results represent the US working age population and do not become entangled with retirement issues. This is consistent with many studies on job security (e.g. see Aaronson & Sullivan (1998), Borland (2002), Farber (1997) and Brochu & Zhou (2009)). I exclude farm occupation workers because they might have a very different vision of job security (e.g. see Neumark, Polsky & Hansen (1999) and Linz & Semykina (2009)).

My cross-sectional samples range from 477 (2002) to 1,077 (1996) observations. The main analysis will nonetheless rely on a base sample of 13,493 observations representing the 18 survey years. All descriptive statistics and estimating equations use weights to ensure my results are representative of the entire population of US

[15] Excluding self-employed workers is consistent with many studies (i.e. see Maurin & Postel-Vinay (2005), Böckerman (2004), Neumark, Polsky & Hansen (1999)).

workers. For each sample year, the weights sum up to one to guarantee that all survey years have the same importance regardless of the size or year of the sample.

4 Empirical Analysis

4.1 Insecurity Measures

My descriptive analysis and probit models are based on three different measures of perceived insecurity. *Insecure1* indicates if the worker feels insecure about losing his job within the next twelve months. It assumes a value of unity if the worker thought it would be either very or fairly likely for him to lose his job and equals zero otherwise. *Insecure2* measures the workers' perceived difficulty of finding a comparable job if he were to lose his current one. It equals one if the worker answered that it would not be easy at all for him to find a similar job and equals zero otherwise. Finally, *insecure3* measures the joint insecurity about losing a job and finding a comparable one. *Insecure3* equals one if the worker considered that it was either very or fairly likely to lose his job in the next twelve months *and* that it would not be easy at all finding a comparable one (i.e. *insecure3*=1 if *insecure1*=1 & *insecure2*=1). This third measure adds richness in view of the fact that by combining information from both questions; only the most insecure workers are considered as being so. This group, furthermore, may have different insecurity patterns.

Of the three measures above, Schmidt (1999) uses *insecure1* and *insecure3*. Most studies on job security perceptions use *insecure1* and *insecure2* (e.g. Brochu & Zhou (2009), Aaronson & Sullivan (1998), Borland (2002)).

4.2 Descriptive Statistics

This section's purpose is to examine the time patterns, in the aggregate and across sub-groups, of perceived job insecurity from 1977 to 2006. In particular, I search for cyclical patterns. Insecurity measures represent the average of insecure workers.

The unemployment rate is based on yearly data from the Bureau of Labour Statistics (BLS). All figures have a vertical line in 1996 in order to demarcate Schmidt's (1999) sample from my own.

4.2.1 Aggregated Insecurity Trends

Figures 1, 2 and 3 illustrate the cyclical pattern of aggregated insecurity defined respectively by *insecure1, insecure2 and insecure3.* Overall, all three figures show that insecurity was strongly cyclical throughout the 1977 to 2006 period. For instance, insecurity increased quite instantaneously with the unemployment rate in the early stages of all three recessions (early 1980s, early 1990s and early 2000s) and then dropped along with the unemployment rate.

Figure 1 shows that in between 1990-1991, the upward trend of *insecure1* was more pronounced then that of the unemployment rate. By 1992, insecurity started a downward trend up to 1998, at which point it got back to a level comparable to that of 1978. *Insecure1* was unusually high in 1996 due to a weaker downward trend, relative to that of the unemployment rate, between 1994 and 1996. Job loss insecurity sharply increased between 1998 and 2002 but did not stay significantly high as it fell between 2002 and 2004. *Insecure1* was generally quite high throughout the 2000s (2000-2006). This seems to be mostly due to the noticeable increase between 2000 and 2002.

As illustrated by Figure 2, *insecure2* increased after the 1990 recession and reached a peak in 1994. At this point, it began a downward trend and reached a trough in 2000. *Insecure2* is not significantly higher in the early to mid-2000s. Interestingly, *insecure2* followed a very similar cyclical movement in both early-1990 and early-

2000 recessions; it overshoot upwards in the early stages, stayed high after the unemployment rate began to fall and dropped sharply thereafter.

After staying high in 1993, the *insecure3* measure shown in Figure 3 sharply declined and reaching a trough in 2000. At that point, *insecure3* was at its lowest point since 1977. Just like *insecure2*, *insecure3* has not been noticeably higher after the early to mid-2000s.

4.2.2 Insecurity Trends across Sub-Groups

The job security literature found that aggregate patterns usually hide rather pronounced differences across various sub-groups of workers. I now propose a short analysis of how insecurity trends differed across sub-groups between 1977 and 2006.

Figure 4 illustrates that blue-collar workers generally feel more insecure than white-collar workers about losing their jobs. For the first time since 1977, perceived job loss insecurity of both groups converged to a similar level by 1996. Figure 4 shows, however, that this process was only temporary: perceived job loss insecurity for blue-collar workers stayed above that of white-collar workers since 1996. Hence, I find that the "democratization" process is not as strong as Aaronson & Sullivan (1998) suggested. Since 2000, white-collar workers had virtually no change in their insecurity perceptions, while that of blue-collar workers increased considerably. This pattern is also found by Green (2003) for the UK.

The pattern of *insecure3* supports the conclusions above for *insecure1* (not shown). The *insecure2* pattern suggests that perceived insecurity of blue-collar and white-

collar worker stayed roughly equal ever since they converged to a similar level in 1996 (not shown).

Figure 5 shows the trend of *insecure2* for younger (18-29) and older workers (50-64) over the 1977 to 2006 period. Relative to younger workers, older workers have always felt quite insecure about finding a comparable job. Prior to 1996, average perceived insecurity about finding a comparable job often differed by 20 to 30 percentage points. A striking feature of Figure 5 is that from 1996 to 2002, fears about finding a comparable job have considerably decreased for older workers (achieved their lowest point since 1977 in 2002), but increased for younger workers (even up to 2004). The perceived insecurity gap between both groups was smaller in 2002 than at any other point since 1977.

Workers aged between 30-39 are found to be less insecure in their perceptions than both older age groups but feel more insecure than the youngest group (not shown). Workers aged 40-49 feel more insecure than both younger age groups but are less so than the oldest workers (not shown). Hence, perceived insecurity about finding a comparable job is found to increase with age. Finally, I find that both *insecure2* and *insecure3* do not vary significantly across age groups (not shown).

Figure 6 examines perceived job loss insecurity for workers of the goods-producing sector and of the service sector. Perceived job loss insecurity has always been higher for workers in the goods-producing sector. Their insecurity has been particularly volatile from 1983 to 1991. After 1996, there has been a somewhat consistent gap between the insecurity perceptions of both groups. To a lesser extent, both other measures of perceived insecurity confirm that insecurity has been

mostly coming from the goods-producing sector (not shown). Aaronson & Sullivan (1998) also reach the conclusion that insecurity perceptions usually come from workers of the goods-producing sector.

Figure 7 illustrates the *insecure3* trend for the most and least educated workers (respectively university and high school dropouts). Individuals with university education have maintained fairly low and stable perceived insecurity levels, while less educated workers had highly volatile and cyclical insecurity. Insecurity perceptions of high school dropouts fell considerably between 1983 and 1989, and started to rise sharply thereafter up to 1993. Though at times close (particularly for 1978, 1989 and 2002), insecurity perceptions of less educated workers has generally been quite higher relative to that of highly educated workers.

Interestingly, I find that both other education groups had a perceived insecurity level between those illustrated by Figure 7; high school graduates having higher perceived insecurity than those who attended college (not shown). The conclusions coming from Figure 7 also apply for both other measures of perceived insecurity (not shown). Past literature overwhelmingly supports that insecurity perceptions decrease with education (e.g. see Aaronson & Sullivan (1998)).

4.3 Regression Analysis

First, I discuss the probit models and the explanatory variables included in those models. Then, I replicate Schmidt's (1999) analysis on job security perception trends for the 1977-1996 period. I also deepen the study of perceived insecurity in the 1990s by extending the analysis up to 2006. I am thus better able to analyze the validity of the claim that perceived insecurity is not only higher since the early 1990s, but

exhibits a structural break. Finally, I examine how the worker's union status and inflation-adjusted personal income affect job security perceptions.

4.3.1 The Empirical Model

Conducting a multi-variate analysis has many advantages over descriptive statistics. Most importantly, it accounts for the major changes that occurred in the US labour market since 1977 (Schmidt (1999)). These changes include, for example, shifts in the age and education distribution of workers (Aaronson & Sullivan (1998)). My multi-variate analysis is based on probit models. This is motivated by the fact that in a linear probability model, the predictions are not constrained to lie between zero and one. The probit model is favored over the logit model on the basis that previous literature on job security perceptions also based their analysis on probit models. The econometric model used has the following form;

$$(1)\ P(Y_{it}=1|x)=F(x_{it}\beta_1+z_{it}\beta_2+w_{it}\beta_3)$$

where Y_{it} is the perceived insecurity measure (*insecure1*, *insecure2* or *insecure3)* for individual *i* at time *t*. The vectors x_{it}, z_{it} and w_{it} contain different types of explanatory variables. x_{it} has controls for the workers' personal characteristics, such as age, gender, race and education. z_{it} contains job characteristic controls such as work status, occupation, industry and region. It also contains year dummies as well as a control for the regional unemployment rate according to nine Census regions. Finally, w_{it} includes variables that are included in some, but not all, regression equation like the workers' union status and inflation-adjusted personal income.

The age dummy variables have been intuitively divided into four categories: *18-29, 30-39, 40-49,* and *50-64*. I believe dividing it as such will help me to group workers that are at similar points in their life cycle.[16]

I create a dummy variable called *female* that equals one if individual *i* is a female. I also generate a race variable, *nonwhite,* that equals one for black and other non-white workers. This dual division is motivated by the fact that these two categories are those in which people are most consistently grouped by the GSS since 1977.[17]

With the help of two GSS variables, I generate four education dummies. Workers who do not have a high school degree are classified as *high school dropouts*. Those who achieved a high school diploma as their highest degree and had 12 years or less of education are *high school* graduates. The latter category groups workers who dropped out of school immediately after completing their high school diploma. I also create a variable named *college* which includes people who experienced some college studies as their highest attainment, even if they did not complete their college degree. Individuals in this category reported a degree of the associate/junior college level or reported a high school degree and had more than 12 years of schooling. Finally, individuals who achieved a bachelor's or a graduate degree are categorized in the *university* educational category.

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[16] To illustrate this point, note that Aaronson & Sullivan (1998) had an age category for workers aged between 25-44 while Schmidt (1999) had one for workers aged between 24-39. It is my belief that by having a gap of almost 20 years in a same category, one might group workers that are in very different points in their life cycle. Furthermore, given that the GSS does not permit us to directly control for tenure, it seems rather unappealing to have such a 20 year gap as the age coefficients might also pick up some of the tenure effects. Farber (2005) used the same age groups as I do.

[17] Initially, the Hispanic race was mostly included in the white category. However, as the Hispanic community grew in the US over the years, Hispanic workers have more and more been considered as a separate group and became included in the "other" race category of the GSS. This trend accounts in large proportion for the increase in the other category over the years.

I classify as working part-time (*part-time*=1) or full-time (*part-time*=0) individuals who respectively reported working part-time or full-time as their work status. I faced some challenges when trying to include workers with a job but temporarily not at work. The difficulty arises because the work status variable does not directly identify whether these individuals usually work part-time or full-time. I had to rely on a second variable (HRS2) that captures the number of hours usually worked on a given week at all jobs. Workers who worked either 30 hours or less are classified as part-time workers, while those who worked more than 30 hours are full-time workers.[18]

I create three occupation dummy variables: *blue-collar, white-collar* and *service-occupation*. The GSS coded workers' occupations in accordance with the Canadian Census. This helped me classify workers into their respective occupation category.[19] I also controlled for the workers' industry by creating two dummy variables: *service-industry* and *goods-industry*. Similarly to the occupation codes, the industry codes of the GSS are based on Census codes and have changed after the 1991 GSS survey. More details on how workers are divided into these two industry groups are available in Appendix 1.

Regional dummies are divided into nine Census regions: *New-England, Mid-Atlantic, East North Central, East South Central, South Atlantic, West North Central, West South Central, Pacific* and *Mountain*. I also generated year dummies for each of the 18 survey years (*1977, 1978, 1982, 1983, 1985, 1986, 1988, 1989, 1990, 1991, 1993, 1994, 1996, 1998, 2000, 2002, 2004* and *2006*).

[18] For more details, please consult Appendix 1.
[19] I did face some challenges since the codes and Census occupational groups changed after the 1991 GSS survey. A more thorough discussion on the issue is offered in Appendix 1.

A yearly regional unemployment rate is included as an explanatory variable. In Section 5, I check whether using the yearly rate, as opposed to the monthly rate, affects the results.

The worker's union status and inflation-adjusted personal income are sometimes included as controls. A worker is classified as a *union* member if he responded being a union member or that both he and his spouse were union members (*union*=1). Non-union members responded that only the spouse belonged or that neither belonged to a union (*union*=0). I create four dummy variables referring to different personal income levels: *less than 19,999$, 20,000-49,999$, 50,000-74,999$, 75,000$ and more*.

4.3.2 Replication of Schmidt (1999)

This sub-section evaluates the extent to which my probit model is able to replicate the results of Schmidt (1999). Her results include standard errors adjusted for the regional clustering of data. As I attempted to do so in order to replicate her study as closely as possible, STATA encountered some complications.[20] Hence, I decided to compute robust standard errors: I do not explicitly impose the homoskedasticity assumption. This different methodology between my study and that of Schmidt (1999) will not affect the marginal effects, but will affect the standard errors.

Schmidt's (1999) regressions use either *insecure1* or *insecure3* and include the variables that I include in x_{it} and z_{it}, except that the regional unemployment rate is

[20] This is possibly due to the small number of clusters.

sometimes omitted. Given that I believe it is important to account for labour market conditions, all of my regressions include the unemployment rate as a control.

Table 1 illustrates how my results compare with those of Schmidt (1999) when *insecure1* is the dependent variable. The estimates presented in Table 1 (and all following tables) are marginal effects: the change in the probability that the worker feels insecure resulting from a one-unit increase of an explanatory variable. All robust standard errors are presented in brackets.

Column (1) shows the marginal effects generated from my analysis; i.e. using my sample restrictions and my age categories. Column (2) displays the results from my analysis when I replicate Schmidt's (1999) sample; i.e. including agriculture occupation[21] and self-employed workers, but still considering my age categories. Column (3) only differs from column (2) in that it includes Schmidt's (1999) age categories. Column (3) is thus my best replication of her study. Workers aged 65 years and older are included when using Schmidt's (1999) age categories. Finally column (4) presents Schmidt's (1999) results.

Table 1 has three main purposes. First, comparing columns (1) and (4) determines if my sample and estimation offers comparable results to Schmidt (1999). A difficulty associated with this exercise is that Schmidt (1999) does not show the marginal effects of all her explanatory variables.[22] Second, comparing columns (3) and (4) evaluates of how closely I can replicate her results. Finally, comparing columns (2)

[21] Agricultural occupation workers are classified as blue-collar workers of the goods-producing industry.
[22] For these probit models, only the marginal effects for the year dummies are presented in Schmidt (1999).

and (3) examines if my results are sensitive to the age categories used and to the exclusion of workers aged over 64 years.

Looking at columns (1) and (4) show that my sample gives comparable results to those found by Schmidt (1999). The most notable difference between both columns comes from the non-significant marginal effects which was expected, and is not taken to be much informative. Overall, the year dummy coefficients somewhat differ but are nonetheless of the same sign and order of magnitude. Schmidt (1999) finds two year dummies to be statistically significant (at the 5% level): 1985 (1.89%) and 1993 (3.21%). Coefficients from my specification for these years are 1.71% and 4.81%, the latter being significant at the 5% level. My results show that 1991 has higher levels of insecurity (4.06%), a result that is significant at the 10% level. Although Schmidt (1999) finds a similar marginal effect for 1991 (4.42%), hers is not statistically different from zero. Overall, my results do not differ to any extent which might alter the overall empirical pattern for perceived job insecurity.

Comparing columns (3) and (4) reveals that when replicating Schmidt (1999) as closely as possible, my sample size and marginal effects are, though not identical, very close to hers. For instance, Schmidt (1999) finds that the 1985 and 1993 marginal effects are significant (at the 5% level) at respectively 1.89% and 3.21%. My replication exercise gives 0.66% (1985) and 2.82% (1993), but neither is statistically significant. My replication finds that the marginal effects of 1991 (3.38%) and 1996 (2.99%) are significant at the 10% level, while Schmidt (1999) finds respectively 4.42% and 2.81%, neither being significant. This difference is statistical precision could be due to differences in standard errors estimation (cluster vs. robust).

Comparing the first three columns of Table 1 shows that all marginal effects are not much sensitive to the addition of agricultural occupation workers, self-employed workers and of workers aged over 64 years. For instance, the non-white variable has a marginal effect for columns (1), (2) and (3) of 7.10%, 7.06% and 6.87%, respectively. A similar comparison exercise can be done for many of the other variables (i.e. *high school dropouts* (1.64%, 1.96%, 1.73%), *white-collar* (-4.79%, -4.62%,-4.55%), *East North Central* (-2.35%, -2.44%, -2.46%), etc.). This confirms that my results are not driven by the fact I use different age categories (and restrict to workers aged under 65 years) and exclude agricultural occupation and self-employed workers.

The main reason why the year marginal effects differ is because of weak statistical precision. Marginal effects of sub-group characteristics are less sensitive than those of the year dummies. This indicates that perceived job insecurity is much less explained by the year effect than by the workers' characteristics.[23]

Table 2 offers a similar analysis to that of Table 1, except that *insecure3* is the dependent variable. The main conclusions of Table 1 hold for Table 2. Schmidt (1999) finds that 1986 (2.21%), 1991 (4.19%), 1993 (4.38%), 1994 (2.29%) and 1996 (1.81%) have significantly higher levels of perceived insecurity. Column (1) shows that I find three of those years (1991 (3.99%), 1993 (5.66%), 1994 (3.48%)) to have high insecurity perceptions, while 1983 is also found to have a statistically higher insecurity level (3.84%). Again, all significant marginal effects remain very close in the three first columns.

[23] Controls such as like non-white, part-time, occupation, age and education seem clearly more important determinants of perceived job security.

4.3.3 Extending the Analysis to 2006

I now build on last section's analysis by extending it up to 2006. Given that my results are found to be comparable to those of Schmidt (1999) over a comparable interval; my extension up to 2006 can also be viewed as an extension of her study. As mentioned previously, such coverage gives an enhanced and clearer picture of the patterns followed by insecurity perceptions throughout the 1990s.

First, I analyze how the marginal effects change by adding 5 additional cross sections of data. Thereafter, I examine how perceived insecurity patterns differ across sub-groups and compare my findings with those of previous studies. Next, probit models are estimated differently across sub-groups to allow for the possibility that the contribution of different factors varied over time. In the final part of this section, I add the workers' union status and inflation-adjusted personal income as explanatory variables and examine how they influence perceived job insecurity. To my knowledge, no other study included the worker's inflation-adjusted personal income as an explanatory variable.

4.3.3.1 Results from Probit Models

The first column of Table 3 is a transcript of Table 1's first column (i.e. my analysis for 1977-1996), while column (2) extends the analysis up to 2006. It immediately stands out that all the coefficients' estimates, even those that are not significant at the 10% level, remain nearly identical. Column (2) shows that the 1983 marginal impact (4.44%) becomes significant at the 10% level when we consider the whole 1977-2006 period. As before, the 1991 and 1993 marginal effects (respectively 3.98% and 4.69%) are statistically significant. After 1993, no year dummy in the 1990s is significant (both statistically and economically). For instance, the marginal effect for

1998 and 2000 are considerably low at, respectively, -0.26% and 0.58%. This is consistent with the claim that, by the late 1990s, perceived job insecurity fully recovered from the 1990s recession. As for the extra years covered, only 2002 is statistically and economically significant. The 2002 year dummy has the largest marginal impact (5.53%) amongst all year dummies.

Table 3 shows that non-white and part-time workers feel substantially, both statistically (at the 1% level) and economically (over 6.30% for the marginal probability effect) more insecure about losing their job than their respective counterparts. Perceived job loss insecurity, however, is not found to differ across genders. Blue-collar workers are significantly more insecure in their perceptions than both other occupation groups, while service industry workers feel less insecure (-3.36%) than workers of the goods-producing industry. The latter two findings go hand-in-hand, as many blue-collar workers are from the goods-producing industry.

Workers aged 30-39 years feel the most insecure about losing their job. The oldest group of workers (50-64) is found to be 2.90% less likely to feel insecure about job loss than workers aged 30-39. The youngest (18-29) group of workers and those aged between 40-49 years are both about 1.4% less insecure about losing their job than the 30-39 age group.

The results from Table 3 strongly suggest that perceived job loss insecurity decreases with education. In comparison to high school graduates, high school dropouts feel 1.75% more insecure, workers with some college education feel less insecure (-1.46%) while workers with a university degree feel even less insecure (-4.66%).

Table 4 offers a similar analysis to that of Table 3, except that the dependent variable is *insecure3*. Columns (1) and (2) once again have noticeably close marginal impacts. Adding 10 years of coverage does not alter the group of year dummies that are statistically significant (1983, 1991, 1993 and 1994). As for the post-1996 year dummies, again only 2004 has a significantly higher insecurity perception level (3.76%). The conclusions about the sub-groups perceived insecurity pattern of Table 2 concerning race, work status, gender, occupation, industry and education also apply for the *insecure3* measure.

The age pattern of Table 4 is found to differ from that of Table 3. The youngest group of workers (18-29) is 2.16% less likely to perceived insecurity and is the only group that has a significantly different marginal effect.

Table 5 shows the results from a similar analysis when *insecure2* is the dependent variable. In total, only four year dummies (1989, 1994, 1996 and 2004) have significantly higher perceived insecurity about finding a comparable job (respectively 7.55%, 8.34%, 4.96% and 6.75%). Again, the results do not show any sign of a structural increase. Perceived insecurity differences across gender, race, work status, education and industry are found to be identical to those of both other insecurity perception measures. Service-occupation workers remain less likely (-11.20%) to feel insecure than blue-collar workers, while white-collar workers do not have lower perceived insecurity about their search outcomes.

Workers aged 18-29 years feel less insecure about finding a comparable job (-7.53%), while workers aged 40-49 and 50-64 are considerably more insecure (respectively

10.33% and 19.01%). These results point towards the conclusion that perceived insecurity about finding a comparable job increases with age.

4.3.3.2 Summary and Comparison of Results

All three probit models support the findings coming out of the descriptive statistics; aggregate job insecurity perceptions followed a rather strong cyclical pattern from 1977 to 2006. At most five out of 17 year dummies have significantly higher insecurity perceptions compared to 1988. By the late 1990s, the perceived insecurity level is found to be comparable to that of the base year. If perceived insecurity had been structurally higher after the 1990 recession, one would expect higher (and significantly so) year dummy marginal effects throughout the late 1990s and early 2000s. That this is not the case supports the findings of Brochu & Zhou (2009) for Canada and Green (2003) for the UK, who claimed that insecurity perceptions did not structurally increase after the early 1990s.

Nonetheless, all three measures of perceived insecurity suggest that perceived insecurity is higher for some sub-groups. Service industry workers generally feel more secure than workers from the goods-producing industry. Schmidt (1999) and Aaronson & Sullivan (1998)) also found such pattern across industries. Non-white workers are found to feel considerably more insecure than their white race counterpart. This conclusion is shared by Manski & Straub (2000) and Aaronson & Sullivan (1998). I find that perceived insecurity decreases with education, a finding also shared by most of the literature of job security perceptions (US: Manski & Straub (2000), Aaronson & Sullivan (1998), Schmidt (1999), Australia: Borland (2002), Canada: Brochu & Zhou (2009) and Russia: Linz & Semykina (2008)). All measures of perceived insecurity conclusively point to the fact that part-time workers feel more insecure

than full-time workers. This conclusion is shared by the Canadian study of Brochu & Zhou (2009) while the Australian study of Borland (2002) did not find that perceived insecurity changed with work status.

Perceived insecurity does not differ across gender. This is in line with the conclusions of Manski & Straub (2000) and Aaronson & Sullivan (1998). Other studies reached different conclusions. For example, both Brochu & Zhou (2009) and Linz & Semykina (2008) (respectively for Russia and Canada) find that female workers are more anxious about the outcomes of a job search. Borland (2002) finds that Australian male workers are generally more insecure.

My three measures of perceived insecurity show that, relative to blue-collar workers, service-occupation workers are less likely to be insecure. Two out of three measures show that white-collar workers also tend to be less insecure than blue-collar workers. My findings are shared by the studies of Brochu & Zhou (2009) for Canada, Linz & Semykina (2008) for Russia and Borland (2002) for Australia. For the US, Schmidt's (1999) and Aaronson & Sullivan's (1998) conclusion differ somewhat in that they found that perceived job insecurity of both groups converged towards a similar level. My analysis suggests that such a "democratization" process was only temporary (supported by Green (2003) for the UK).

I find that workers of opposite age cohorts have different types of perceived insecurity. Older workers (40-49 and 50-64) feel less insecure about losing their current job than workers aged 30-39. So too are the youngest workers (18-29), but to a lesser extent. Hence, job loss insecurity has an inverted u-shape curve (in respect to the worker's age) that peaks between 30 and 39 years of age. Brochu & Zhou

(2009), Linz & Semykina (2008) and Manski & Straub (2000) (respectively for Canada, Russia and the US) all find that fears of job loss decrease with age, which would have been consistent with my findings if the younger age group had higher insecurity. Younger workers are less insecure about finding a comparable job while both older groups are found to be more insecure. Perceived insecurity about finding a comparable job is found to be an increasing function of the worker's age. This is consistent with the findings Brochu & Zhou (2009), Linz & Semykina (2008) and Manski & Straub (2000) (for Canada, Russia and the US), who all find that fears about finding a comparable job increase with the worker's age.

4.3.3.3 Probit Models Estimated Separately by Sub-Groups

In order to analyze if various sub-groups had noticeable changes in perceived insecurity since the early 1990s, I estimated probit models separately for some sub-groups. In these models, I add as an explanatory variable one of three different possible dummies which represent post-1990 grouped years: 1990-2006, 1992-2006 and 1995-2006. The year cutoffs have been decided on the basis that it allows for the flexibility of testing if insecurity perceptions have only been higher in the early to mid-1990s or structurally so since the early 1990s.

Table 6 shows the marginal effects for the grouped year dummies when probit models are estimated separately by education, age and occupation sub-groups. *Insecure1* is the dependent variable. Other probit models with *insecure2* and *insecure3* as the dependent variables (not shown) give identical conclusions.

Table 6 confirms prior conclusions; perceived insecurity has not been structurally higher since the 1990s. Only four out of the 33 coefficients are statistically significant

at the 10% level or lower. All four significant marginal effects are for the educational sub-groups; the college category seemed to have considerable higher insecurity in the 1990 to 2006 and 1992 to 2006 periods (respectively 8.62% and 9.92%). This finding disappears when we look at the 1995-2006 period since workers with some college education has only slightly higher insecurity (1.14%) that is not statistically significant. This is consistent with the claim that these workers have only been more insecure during the early to mid-1990s. However, workers with university education have 7.12% higher perceived insecurity in the 1995-2006 period.

4.3.3.4 Further Exploration

As the final part of this empirical section, Table 7 presents the marginal effects for the workers' union status and for his inflation-adjusted personal income. The probit models have been conducted with respect to all three variables of perceived insecurity.

Other studies also added the worker's union status as an explanatory variable. Aaronson & Sullivan (1998) and Brochu & Zhou (2009) did so for the US and Canada respectively and found that unionized workers are more likely to be insecure. Aaronson & Sullivan (1998) hypothesized that insecure workers self-selected themselves in unionized jobs, which may cause an endogeneity bias.[24]

Brochu & Zhou (2009) deepened the analysis on this issue by looking at the union status effect separately across sub-groups. They did so for occupation (blue-collar and white-collar-workers) and education (high school educated and university

[24] Brochu & Zhou (2009) also state that there are good reasons to believe that the union variable is endogenous.

graduate workers) sub-groups. They find that the high perceived insecurity of unionized workers comes primarily from low skilled blue-collar workers.

Table 7 confirms that union members feel significantly (statistically so at the 1% level) more insecure in respect to all three measures of perceived insecurity (respectively 2.42%, 17.49% and 2.95%)). What is striking is that union members feel much more insecure with respect to finding a job that offers similar salary and fringe benefits (17.49% significant at the 1% level).

To further analyze the union effect on perceived insecurity, I also decided to estimate probit models separately by occupation and education groups (as did Brochu & Zhou (2009) for Canada). The marginal effects of the union variable are available in Table 8. One will notice that the estimates are only quite significant (at the 1% level) for *insecure2*, so that unions seem to mainly affect perceptions about finding a comparable job. Column (2) shows that the union effect on perceived insecurity is important for all occupational sub-groups, but more so for white-collar than blue-collar workers (respectively 21.47% and 12.77%). The union effect seems quite evenly distributed across education groups, except for workers with college education who have the lowest effect.

With respect to both other measures of perceived insecurity, the union effect is near zero and insignificant for white-collar and service occupation workers. Nonetheless, it is statistically significant (at the 1% level) and economically so (at more than 5%) for blue-collar workers. Thus, except for *insecure2*, the union impact on insecurity seems to be driven by blue-collar workers. This result is comparable to what Brochu & Zhou (2009) found for Canadian workers. However, no clear pattern arises for *insecure1*

and *insecure3* when estimated across different educational categories. This differs from Brochu & Zhou (2009).

Given that there is a general belief that low-skilled individuals working in poorly-paid jobs are easily replaceable, I wanted to evaluate how the worker's personal income affects his perception of job security. To my knowledge, no other study controlled for the worker's personal income. In his Australian study, Borland (2002) did control for income, but at the household level. He finds that the likelihood of feeling insecure (for both measures) is higher for workers living in a household that earns less that 20,000$ per annum. Table 7 shows that workers with personal income of at least 75,000$ feel significantly less insecure about losing their job (-7.32%) but significantly more insecure about finding a comparable one (7.91%). With respect to the job loss insecurity, all coefficients are found to be statistically significant at the 1% level. These coefficients suggest that perceived insecurity about losing a job decreases with personal income, which is consistent to what Borland (2002) finds for family income. A similar pattern arises for the *insecure3* measure. The coefficients presented in Table 7 for the worker's personal income categories cannot be viewed as being causal impacts. This is so because out of all my other control variables, personal income is the most likely to be endogenous.

5 Robustness Verification

I now examine whether my results are sensitive to variable selection decisions that may have appeared arbitrary. I will verify if the inclusion of individuals who are temporarily not working into either work status category affects the results. I also examine if the estimates are robust to the use of the monthly regional unemployment rate as an alternative to the annual regional unemployment rate.

Table 9 investigates whether the inclusion of temporarily not working workers affects the estimates of the coefficients of interest. The even-numbered columns illustrate the marginal effects from the probit models in which such workers are included. Odd-numbered columns exclude them. Table 9 confirms that, for each measure of perceived insecurity, the addition or exclusion of those workers does not alter the results. Indeed, all statistically significant coefficients remain very comparable in size and of the same sign in both settings. What is striking is that most, if not all, of the non-statistically significant coefficients also remain quite similar under both alternatives.

Table 10 illustrates a comparison of the marginal effects when the monthly employment rate is used as a control instead of the annual rate.[25] This alternative is made possible because the GSS recorded, for each observation, the month during which the interview was conducted. The format of Table 10 is similar to that of Table 6; results are presented for all three insecurity perception measures. The even-numbered columns show the probit results when the monthly regional

[25] In order to keep my sample sizes comparable in both alternative settings, 26 individuals are assigned an annual rather than monthly unemployment rate. This is motivated by the fact the variable indicating the month the survey was conducted was not available for those observations. Given that this is so for 26 individuals out of more than 13,000 observations, I believe the robustness verification exercise remains legitimate.

unemployment rate is used, while odd-numbered columns use the annual rate. All coefficients that were significant using the annual regional unemployment rate kept an exceptionally comparable marginal impact when using the monthly regional unemployment rate. The most important change is with respect to the impact of the unemployment rate on the perceived insecurity measures. For instance, the marginal effect of the annual regional unemployment rate on the *insecure1* measure is 7.95%. When considering the monthly regional unemployment rate, this marginal increase is of 6.88%.

In general, my results are robust to both alternatives hereby evaluated. Hence, even if at times my decisions might have appeared arbitrary, it is important to note that they did not ultimately influence the estimates.

6 Conclusion

It has been frequently reported throughout the 1990s that job insecurity was becoming an important facet of the worker's life. Higher insecurity may cause important changes in the labour market and this phenomenon raises issues of employment relationships. Some studies, such as Schmidt (1999), analyzed the issue of perceived job insecurity for the United States and suggested that it has been structurally higher since the 1990 recession. If this is indeed the case, there are many reasons to believe that the employee-employer relationship and wage-setting process have consequently been affected.

My study uses GSS data from 1977-2006 to analyze long-term patterns of job security perceptions based on three insecurity measures. I find no evidence of a structural increase in perceived insecurity since the early 1990s. In fact, perceived job security is found to be highly cyclical over the whole period, which casts doubt on Schmidt's (1999) reference to a secular increase discerned over an earlier interval. Thus, if one believes that there has been a change in the US employment relationships such as the wage-setting process, it does not appear to be caused by higher insecurity perceptions.

I find that insecurity perceptions across sub-groups are much more pronounced than they are across time. The most important sub-group differences are associated with the worker's occupation, industry, race, education and work status. Perceived insecurity about finding a comparable job is found to increase with the worker's age. Blue-collar workers feel more insecure than both white-collar and service occupation workers. Workers of the goods-producing industry seem more likely to feel insecure than workers of the service industry, while part-time workers are found to be more

insecure than full-time workers. Finally, white race workers are found to feel quite significantly more secure about their job than the non-white workers.

Another interesting facet that has been examined is how perceived insecurity is affected by the workers' union status and by his inflation-adjusted personal income. Union members are more likely to feel insecure, most notably about finding a comparable job. I believe this finding deserves further exploration. Finally, workers who had at least 75,000$ in personal income had greater insecurity about finding a comparable job but lower insecurity about losing their current job compared to workers with less than 20,000$ of income.

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Table 1-Probit Model
Comparison of my Results of Perceived Job Insecurity to those of Schmidt (1999) for the 1977-1996 period
Dependent Variable = *insecure1*
Marginal effects presented

Exogenous Variables	(1)	(2)	(3)	SCHIMDT (1999)
Annual Regional Unemployment Rate	.0084** (.0037)	.0094*** (.0034)	.0097*** (.0033)	.00631*** (.00254)
1977	.0006 (.0201)	.0010 (.0181)	-.0038 (.0169)	.00502 (.02211)
1978	-.0175 (.0178)	-.0174 (.0158)	-.0226 (.0147)	-.0252 (.0158)
1982	.0228 (.0267)	.0157 (.0231)	.0070 (.0213)	.0292 (.0276)
1983	.0425 (.0292)	.0247 (.0244)	.0168 (.0228)	.0290 (.0209)
1985	.0171 (.0219)	.0111 (.0189)	.0066 (.0177)	.0189** (.0099)
1986	.0138 (.0214)	.0072 (.0185)	.0036 (.0175)	.0104 (.0205)
1988			Base	
1989	.0118 (.0233)	.0016 (.0199)	-.0023 (.0188)	-.00009 (.0253)
1990	.0056 (.0222)	.0018 (.0195)	-.0025 (.0184)	-.00039 (.0245)
1991	.0406* (.0259)	.0412** (.0233)	.0338* (.0220)	.0442 (.0312)
1993	.0481** (.0261)	.0362* (.0224)	.0282 (.0209)	.0321** (.0161)
1994	.0294 (.0212)	.0232 (.0187)	.0179 (.0175)	.0170 (.0185)
1996	.0319 (.0215)	.0325* (.0194)	.0299* (.0185)	.0281 (.0230)
Female	.0058 (.0078)	.0059 (.0071)	.0068 (.0069)	yes[1]
Non-white	.0710*** (.0116)	.0706*** (.0108)	.0687*** (.0106)	yes
Part-Time	.0726*** (.0125)	.0604*** (.0106)	.0583*** (.0101)	yes
Age 18-29	-.0148* (.0086)	-.0085 (.0078)	-	-
Age 30-39	Base		-	-
Age 40-49	-.0183** (.0088)	-.0197** (.0077)	-	-
Age 50-64	-.0329*** (.0088)	-.0349*** (.0076)	-	-
Age 18-24	-	-	-.0104 (.0094)	yes
Age 25-39	-	-	Base	
Age 40-54	-	-	-.0193** (.0067)	yes

Age 55 & older	-	-	-.0461*** (.0071)	yes
High School dropout	.0164 (.0116)	.0196*** (.0104)	.0173* (.0100)	yes
High School Graduate			Base	
College	-.0155* (.0084)	-.0122 (.0076)	-.0125 (.0074)	yes
University	-.0471*** (.0087)	-.0397*** (.0079)	-.0394*** (.0077)	yes
White-Collar	-.0479*** (.0105)	-.0462*** (.0093)	-.0455*** (.0091)	yes
Blue-Collar			Base	
Service Occupations	-.0506*** (.0094)	-.0457*** (.0085)	-.0427*** (.0084)	yes
Goods Industry			Base	
Service Industry	-.0341*** (.0095)	-.0277*** (.0084)	-.0284*** (.0083)	yes
New England	.0039 (.0201)	.0041 (.0183)	.0111 (.0184)	yes
Middle Atlantic			Base	
East North Central	-.0235** (.0108)	-.0244** (.0096)	-.0246** (.0094)	yes
West North Central	.0032 (.0183)	-.0007 (.0158)	-.0005 (.0155)	yes
South Atlantic	.0086 (.0130)	.0066 (.0117)	.0073 (.0114)	yes
East South Central	-.0059 (.0153)	-.0103 (.0133)	-.0101 (.0129)	yes
West South Central	.0298** (.0163)	.0212 (.0142)	.0196 (.0139)	yes
Mountain	.0277 (.0195)	.0265 (.0174)	.0250 (.0169)	yes
Pacific	-.0014 (.0131)	-.0032 (.0115)	-.0009 (.0113)	yes
N	9,272	10,741	11,114	11,304

Column (1) considers a probit regression with my sample restrictions and my age categories.
Column (2) considers a probit regression using Schmidt's (1999) sample restrictions with my age categories. In sum, self-employed workers and farmers are included.
Column (3) considers a probit regression using a replication of Schmidt's (1999) sample with her age variables. Workers aged over 64 years are thus included.
Column (4) illustrates Schmidt's (1999) results.

Robust standard errors are presented in parentheses.

The base category consists of a 30 to 39 years old (alternatively 25-39) white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the goods-producing industry in 1988. I also include a control for the regional unemployment rate.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

[1] Indicates that Schmidt (1999) did control for these characteristics but did not show her results.

Table 2- Probit Model
Comparison of my Results of Perceived Job Insecurity to those of Schmidt (1999) for the 1977-1996 period
Dependent Variable = *insecure3*
Marginal effects presented

Exogenous Variables	(1)	(2)	(3)	SCHIMDT (1999)
Annual Regional Unemployment Rate	.0097*** (.0026)	.0104*** (.0023)	.0101*** (.0023)	.00652** (.00249)
1977	-.0018 (.0148)	-.0036 (.0130)	-.0079 (.0117)	.000718 (.01351)
1978	-.0008 (.0151)	.0019 (.0139)	-.0034 (.0125)	-.00003 (.00910)
1982	.0187 (.0210)	.0117 (.0177)	.0066 (.0161)	.0386 (.0153)
1983	.0384* (.0246)	.0230 (.0199)	.0169 (.0181)	.0360 (.0234)
1985	.0167 (.0178)	.0111 (.0151)	.0068 (.0138)	.0234 (.0133)
1986	.0209 (.0184)	.0166 (.0160)	.0127 (.0148)	.0221** (.0109)
1988			Base	
1989	.0109 (.0195)	.0052 (.0166)	-.0004 (.0148)	.00251 (.00983)
1990	-.0021 (.0163)	-.0047 (.0143)	-.0087 (.0130)	-.00619 (.0127)
1991	.0399** (.0227)	.0355** (.0200)	.0298* (.0185)	.0419*** (.0121)
1993	.0566*** (.0245)	.0436*** (.0206)	.0363** (.0186)	.0438** (.0219)
1994	.0348** (.0192)	.0285** (.0167)	.0229* (.0152)	.0229* (.0143)
1996	.0264 (.0184)	.0220 (.0161)	.0185 (.0149)	.0181*** (.00402)
Female	.0067 (.0057)	.0066 (.0052)	.0075 (.0051)	yes[1]
Non-white	.0388*** (.0083)	.0409*** (.0079)	.0397*** (.0078)	yes
Part-Time	.0318*** (.0092)	.0249*** (.0076)	.0229*** (.0072)	yes
Age 18-29	-.0258*** (.0056)	-.0217*** (.0051)	-	-
Age 30-39	Base		-	-
Age 40-49	.0027 (.0066)	.0004 (.0058)	-	-
Age 50-64	-.0072 (.0064)	-.0094 (.0056)	-	-
Age 18-24	-	-	-.0203*** (.0057)	yes
Age 25-39	-	-	Base	
Age 40-54	-	-	.0045 (.0052)	yes
Age 55 & older	-	-	-.0118*	yes

			(.0058)	
High School dropout	.0051	.0057	.0055	yes
	(.0074)	(.0067)	(.0065)	
High School Graduate			Base	
College	-.0137**	-.0109**	-.0108**	yes
	(.0058)	(.0053)	(.0052)	
University	-.0308***	-.0281***	-.0284***	yes
	(.0058)	(.0052)	(.0051)	
White-Collar	-.0289***	-.0267***	-.0260***	yes
	(.0074)	(.0066)	(.0065)	
Blue-Collar			Base	
Service Occupations	-.0282***	-.0260***	-.0248***	yes
	(.0065)	(.0059)	(.0058)	
Goods Industry			Base	
Service Industry	-.0324***	-.0268***	-.0283***	yes
	(.0072)	(.0063)	(.0063)	
New England	-.0036	-.0016	-.0009	yes
	(.0137)	(.0127)	(.0125)	
Middle Atlantic			Base	
East North Central	-.0144*	-.0140**	-.0143**	yes
	(.0073)	(.0065)	(.0064)	
West North Central	.0050	.0009	.0001	yes
	(.0137)	(.0118)	(.0114)	
South Atlantic	-.0021	-.0018	-.0024	yes
	(.0086)	(.0078)	(.0076)	
East South Central	-.0041	-.0069	-.0073	yes
	(.0102)	(.0089)	(.0087)	
West South Central	.0045	.0014	-.0001	yes
	(.0105)	(.0092)	(.0089)	
Mountain	.0038	.0083	.0065	yes
	(.0128)	(.0122)	(.0116)	
Pacific	-.0212**	-.0186**	-.017**	yes
	(.0072)	(.0064)	(.0064)	
N	9,147	10,542	10,882	11,271

Column (1) considers a probit regression with my sample restrictions and my age categories.
Column (2) considers a probit regression using Schmidt's (1999) sample restrictions with my age categories. In sum, self-employed workers and farmers are included.
Column (3) considers a probit regression using a replication of Schmidt's (1999) sample with her age variables. Workers aged over 64 years are thus included.
Column (4) illustrates Schmidt's (1999) results.

Robust standard errors are presented in parentheses.

The base category consists of a 30 to 39 years old (alternatively 25-39) white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the good producing industry in 1988. I also include a control for the regional unemployment rate.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

[1] Indicates that Schmidt (1999) did control for these characteristics but did not show her results.

Table 3-Probit Model
Extending the Analysis of Perceived Job Insecurity up to the 1977-2006 period
Dependent Variable = *insecure1*
Marginal effects presented

Exogenous Variables	(1)	(2)
Annual Regional Unemployment Rate	.0084** (.0037)	.0076** (.0035)
1977	.0006 (.0201)	.0005 (.0196)
1978	-.0175 (.0178)	-.0174 (.0171)
1982	.0228 (.0267)	.0241 (.0263)
1983	.0425 (.0292)	.0444* (.0290)
1985	.0171 (.0219)	.0178 (.0216)
1986	.0138 (.0214)	.0144 (.0210)
1988	Base	
1989	.0118 (.0233)	.0103 (.0226)
1990	.0056 (.0222)	.0055 (.0216)
1991	.0406* (.0259)	.0398* (.0256)
1993	.0481** (.0261)	.0469** (.0257)
1994	.0294 (.0212)	.0277 (.0207)
1996	.0319 (.0215)	.0304 (.0210)
1998	-	-.0026 (.0187)
2000	-	.0058 (.0202)
2002	-	.0553** (.0273)
2004	-	.0317 (.0230)
2006	-	.0274 (.0221)
Female	.0058 (.0078)	.0060 (.0065)
Non-white	.0710*** (.0116)	.0655*** (.0089)
Part-Time	.0726*** (.0125)	.0636*** (.0102)
Age 18-29	-.0148* (.0086)	-.0135* (.0072)
Age 30-39	Base	
Age 40-49	-.0183** (.0088)	-.0145* (.0073)
Age 50-64	-.0329*** (.0088)	-.0290*** (.0073)
High School dropout	.0164 (.0116)	.0175* (.0099)
High School Graduate	Base	
College	-.0155* (.0084)	-.0146** (.0070)
University	-.0471*** (.0087)	-.0466*** (.0072)
White-Collar	-.0479*** (.0105)	-.0400*** (.0087)
Blue-Collar	Base	
Service Occupations	-.0506*** (.0094)	-.0383*** (.0084)
Goods Industry	Base	
Service Industry	-.0341*** (.0095)	-.0336*** (.0081)
New England	.0039 (.0201)	.0006 (.0165)
Middle Atlantic	Base	
East North Central	-.0235** (.0108)	-.0274*** (.0087)
West North Central	.0032 (.0183)	-.0088 (.0139)
South Atlantic	.0086 (.0130)	.0039 (.0104)
East South Central	-.0059 (.0153)	-.0023 (.0130)
West South Central	.0298** (.0163)	.0081 (.0121)
Mountain	.0277 (.0195)	.0122 (.0148)
Pacific	-.0014 (.0131)	-.0035 (.0107)
N	9,272	13,486

Column (1)'s marginal effectsare taken from column (1) of Table 1
Column (2) considers a probit regression identical to that of column (1), except that the period

considered is 1977-2006

Robust standard errors are presented in parentheses.

The base category consists of a 30 to 39 years old white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the goods-producing industry in 1988. I also include a control for the regional unemployment rate.

*Significant at the 90% level---**Significant at the 95% level---***Significant at the 99% level

Table 4-Probit Model
Extending the Analysis of Perceived Job Insecurity up to the 1977-2006 period
Dependent Variable = *insecure3*
Marginal effects presented

Exogenous Marginal effects presented Variables	(1)	(2)
Annual Regional Unemployment Rate	.0097*** (.0026)	.0091*** (.0023)
1977	-.0018 (.0148)	-.0021 (.0136)
1978	-.0008 (.0151)	-.0012 (.0139)
1982	.0187 (.0210)	.0158 (.0191)
1983	.0384* (.0246)	.0351* (.0229)
1985	.0167 (.0178)	.0153 (.0166)
1986	.0209 (.0184)	.0192 (.0173)
1988	Base	
1989	.0109 (.0195)	.0103 (.0182)
1990	-.0021 (.0163)	-.0017 (.0152)
1991	.0399** (.0227)	.0371** (.0216)
1993	.0566*** (.0245)	.0530*** (.0235)
1994	.0348** (.0192)	.0318** (.0181)
1996	.0264 (.0184)	.0244 (.0174)
1998	-	.0240 (.0183)
2000	-	-.0045 (.0139)
2002	-	.0284 (.0204)
2004	-	.0376** (.0203)
2006	-	.0169 (.0166)
Female	.0067 (.0057)	.0077* (.0046)
Non-white	.0388*** (.0083)	.0392*** (.0064)
Part-Time	.0318*** (.0092)	.0276*** (.0072)
Age 18-29	-.0258*** (.0056)	-.0216*** (.0046)
Age 30-39	Base	
Age 40-49	.0027 (.0066)	.0010 (.0052)
Age 50-64	-.0072 (.0064)	-.0059 (.0052)
High School dropout	.0051 (.0074)	.0101 (.0065)
High School Graduate	Base	
College	-.0137** (.0058)	-.0123** (.0046)
University	-.0308*** (.0058)	-.0249*** (.0047)
White-Collar	-.0289*** (.0074)	-.0244*** (.0060)
Blue-Collar	Base	
Service Occupations	-.0282*** (.0065)	-.0240*** (.0052)
Goods Industry	Base	
Service Industry	-.0324*** (.0072)	-.0293*** (.0060)
New England	-.0036 (.0137)	.0008 (.0117)
Middle Atlantic	Base	
East North Central	-.0144* (.0073)	-.0166*** (.0055)
West North Central	.0050 (.0137)	.0032 (.0106)
South Atlantic	-.0021 (.0086)	-.0011 (.0068)
East South Central	-.0041 (.0102)	-.0060 (.0079)
West South Central	.0045 (.0105)	-.0012 (.0077)
Mountain	.0038 (.0128)	.0009 (.0099)
Pacific	-.0212** (.0072)	-.0218*** (.0054)
N	9,147	13,323

Column (1)'s marginal effectscome from column (1) of Table 5
Column (2) considers a probit regression identical to that of column (1), except that the period

considered is 1977-2006

Robust standard errors are presented in parentheses.

The base category consists of a 30 to 39 years old white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the good producing industry in 1988. I also include a control for the regional unemployment rate.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

Table 5-Probit Model
Extending the Analysis of Perceived Job Insecurity up to the 1977-2006 period
Dependent Variable = *insecure2*
Marginal effects presented

Exogenous Variables		Exogenous Variables	
Annual Regional Unemployment Rate	.0457*** (.0058)	Age 18-29	-.0753*** (.0128)
1977	-.0488 (.0309)	Age 30-39	Base
1978	-.0019 (.0312)	Age 40-49	.1033*** (.0135)
1982	.0183 (.0368)	Age 50-64	.1901*** (.0145)
1983	-.0391 (.0394)	High School dropout	.0390** (.0169)
1985	.0170 (.0319)	High School Graduate	Base
1986	-.0522 (.0313)	College	-.0631*** (.0123)
1988	Base	University	-.1358*** (.0129)
1989	.0755** (.0351)	White-Collar	-.0396*** (.0144)
1990	.0350 (.0344)	Blue-Collar	Base
1991	-.0028 (.0339)	Service Occupations	-.1120*** (.0165)
1993	.0417 (.0341)	Goods Industry	Base
1994	.0834*** (.0298)	Service Industry	-.0594*** (.0130)
1996	.0496* (.0295)	New England	.0426 (.0272)
1998	.0114 (.0304)	Middle Atlantic	Base
2000	-.0062 (.0315)	East North Central	-.0138 (.0169)
2002	-.0024 (.0345)	West North Central	.1004*** (.0245)
2004	.0675** (.0328)	South Atlantic	-.0086 (.0179)
2006	-.0084 (.0312)	East South Central	-.0317 (.0224)
Female	.0045 (.0108)	West South Central	-.0156 (.0201)
Non-white	.0555*** (.0133)	Mountain	.0642*** (.0243)
Part-Time	-.0680*** (.0140)	Pacific	-.0865*** (.0180)
	N	13,493	

Robust standard errors are presented in parentheses.

The base category consists of a 30 to 39 years old white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the good producing industry in 1988. I also include a control for the regional unemployment rate.

*Significant at the 90% level---**Significant at the 95% level---***Significant at the 99% level

Table 6-Probit Models By Sub-Groups (education, age and occupation)
Dependent Variable = *insecure1*
Marginal effects presented for the 199X-2006 dummy variable

	Dummy 1990-2006 (1)	Dummy 1992-2006 (2)	Dummy 1995-2006 (3)	N
Exogenous Variables				
A. Occupations				
White-Collar	.0402 (.0224)	.0115 (.0232)	.0116 (.0238)	7,702
Service Occupation	.0071 (.0579)	.0629 (.0499)	.0199 (.0519)	2,197
Blue Collar	.0088 (.0472)	-.0583 (.0427)	-.0180 (.0460)	3,587
				13,486
B. Education				
High School Dropout	.0030 (.0773)	.0343 (.0784)	.0030 (.0776)	1,596
High School Grads	-.0215 (.0353)	.0046 (.0371)	.0046 (.0373)	4,539
College	.0862** (.0322)	.0992*** (.0374)	.0114 (.0347)	3,880
University	.0551* (.0272)	.0357 (.0315)	.0712** (.0409)	3,471
				13,486
C. Age				
18-29	.0392 (.0393)	.0392 (.0393)	-.0044 (.0365)	3,625
30-39	-.0239 (.0430)	-.0234 (.0414)	-.0229 (.0397)	4,005
40-49	.0030 (.0359)	.0031 (.0361)	.0111 (.0348)	3,214
50-64	.0580 (.0347)	.0613 (.0387)	.0281 (.0372)	2,642
				13,486

Robust standard errors are presented in parentheses.

Each coefficient presented comes from a separate regression. In each regression controls for age, race, gender, education, region, work status, occupation, industry, unemployment rate and year. Columns (1), (2) and (3) respectively add as a control a group year dummy for 1990-2006, 1992-2006 and 1995-2006. When a regression is done for a particular group, I exclude all controls for this sub-group. For instance, when running a regression for white-collar workers, both other occupation categories are excluded. I also include a control for the regional unemployment rate.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

Table 7-Probit Model 1977-2006
Including an Indicator for Union Status and Personal Income control
Marginal effects presented

Exogenous Variables	Insecure1	Insecure2	Insecure 3
	(1)	(2)	(3)
Union	.0242***	.1749***	.0295***
	(.0123)	(.0195)	(.0099)
Inflation adjusted personal income			
20000-49999	-.0354***	.0290	-.0140*
	(.0112)	(.0240)	(.0076)
50000-74999	-.0544***	.0378	-.0251***
	(.0116)	(.0276)	(.0076)
75000+	-.0732***	.0791***	-.0349***
	(.0119)	(.0288)	(.0081)
N	6,538	6,539	6,468

Robust standard errors are presented in parentheses.

In each regression also controls for age, race, gender, education, region, work status, occupation, industry, unemployment rate and year.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

Table 8-Probit Model By Sub-Groups (education and occupation)
Analysis of the Union effect on Perceived Job Insecurity for 1977-2006
Marginal effects presented for the union variable

Exogenous Variables	Insecure1 (1)	Insecure2 (2)	Insecure3 (3)	N
A. Occupations				
White-Collar	-.0052 (.0145)	.2147*** (.0276)	.0166 (.011)	(1)3,819 (2)3,802 (3)3,767[1]
Service Occupation	.0049 (.0277)	.1708*** (.0547)	-.0013 (.0103)	(1)985 (2)989 (3)927
Blue Collar	.0694*** (.0249)	.1277*** (.0330)	.0550*** (.0189)	(1)1,734 (2)1,748 (3)1,722
B. Education				
High School Dropout	.0503 (.0411)	.1911*** (.0557)	.0348 (.0305)	(1)700 (2)728 (3)693
High School Grads	.0161 (.0199)	.1935*** (.0319)	.0208 (.0146)	(1)2,235 (2)2,232 (3)2,211
College	.0614** (.0276)	.1355*** (.0380)	.0514*** (.0223)	(1)1,878 (2)1,877 (3)1,795
University	-.0070 (.0125)	.1989*** (.0375)	.0109 (.0083)	(1)1,710 (2)1,702 (3)1,418

Robust standard errors are presented in parentheses.

Each coefficient presented comes from a separate regression. In each regression controls for age, race, gender, education, region, work status, occupation, industry, unemployment rate, inflation-adjusted personal income and year. When a regressions is done for a given group of any sub-groups (education, age, occupation), I exclude all controls for this sub-groups.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

[1] These sample sizes are numbered in relation to the respective probit model (columns (1), (2) or (3)).

Table 9-Probit Model
Robustness Check; Including workers that were temporarily not working
Marginal effects presented

Temp. Not Working	Excluded	Included	Excluded	Included	Excluded	Included
	Insecure1		Insecure2		Insecure3	
Exogenous Variables	(1)	(2)	(3)	(4)	(5)	(6)
Regional unemployment rate	.0103***	.0076**	.0483***	.0457***	.0103***	.0091***
	(.0035)	(.0035)	(.0062)	(.0058)	(.0023)	(.0023)
1977	-.0067	.0005	-.0483	-.0488	-.0027	-.0021
	(.0189)	(.0196)	(.0311)	(.0309)	(.0137)	(.0136)
1978	-.0167	-.0174	-.0105	-.0019	.0002	-.0012
	(.0175)	(.0171)	(.0315)	(.0312)	(.0144)	(.0139)
1982	.0101	.0241	-.0308	.0183	.0086	.0158
	(.0245)	(.0263)	(.0394)	(.0368)	(.0176)	(.0191)
1983	.0311	.0444*	-.0255	-.0391	.0298	.0351*
	(.0273)	(.0290)	(.0392)	(.0394)	(.0221)	(.0229)
1985	.0132	.0178	-.0007	.0170	.0117	.0153
	(.0213)	(.0216)	(.0324)	(.0319)	(.0162)	(.0166)
1986	.0078	.0144	-.0625*	-.0522	.0139	.0192
	(.0204)	(.0210)	(.0314)	(.0313)	(.0164)	(.0173)
1988				Base		
1989	.0102	.0103	.0662*	.0755**	.0082	.0103
	(.0229)	(.0226)	(.0355)	(.0351)	(.0181)	(.0182)
1990	.0033	.0055	.0103	.0350	-.0021	-.0017
	(.0217)	(.0216)	(.0343)	(.0344)	(.0154)	(.0152)
1991	.0353	.0398*	-.0212	-.0028	.0361**	.0371**
	(.0253)	(.0256)	(.0343)	(.0339)	(.0218)	(.0216)
1993	.0458**	.0469**	.0398	.0417	.0523***	.0530***
	(.0258)	(.0257)	(.0346)	(.0341)	(.0237)	(.0235)
1994	.0245	.0277	.0907***	.0834***	.0291*	.0318**
	(.0207)	(.0207)	(.0302)	(.0298)	(.0180)	(.0181)
1996	.0303	.0304	.0436	.0496*	.0220	.0244
	(.0213)	(.0210)	(.0298)	(.0295)	(.0173)	(.0174)
1998	.0033	-.0026	.0027	.0114	.0271*	.0240
	(.0197)	(.0187)	(.0304)	(.0304)	(.0192)	(.0183)
2000	.0106	.0058	-.0191	-.0062	-.0035	-.0045
	(.0211)	(.0202)	(.0315)	(.0315)	(.0144)	(.0139)
2002	.0583**	.0553**	-.0091	-.0024	.0301*	.0284
	(.0280)	(.0273)	(.0347)	(.0345)	(.0210)	(.0204)
2004	.0342	.0317	.0564*	.0675**	.0384	.0376**
	(.0237)	(.0230)	(.0330)	(.0328)	(.0209)	(.0203)
2006	.0330	.0274	-.0166	-.0084	.0177	.0169
	(.0231)	(.0221)	(.0313)	(.0312)	(.0171)	(.0166)
Female	.0059	.0060	.0061***	.0045	.0084*	.0077*
	(.0065)	(.0065)	(.0109)	(.0108)	(.0046)	(.0046)
Non-white	.0642***	.0655***	.0574	.0555***	.0392***	.0392***
	(.0090)	(.0089)	(.0135)	(.0133)	(.0065)	(.0064)
Part-Time	.0632***	.0636***	-.0737***	-.0680***	.0254***	.0276***
	(.0103)	(.0102)	(.0142)	(.0140)	(.0072)	(.0072)
Age 18-29	-.0139*	-.0135*	-.0717***	-.0753***	-.0211***	-.0216***
	(.0073)	(.0072)	(.0130)	(.0128)	(.0047)	(.0046)
Age 30-39				Base		

Age 40-49	-.0140*	-.0145*	.1036***	.1033***	.0018	.0010
	(.0075)	(.0073)	(.0137)	(.0135)	(.0053)	(.0052)
Age 50-64	-.0287***	-.0290***	.1927***	.1901***	-.0051	-.0059
	(.0074)	(.0073)	(.0147)	(.0145)	(.0053)	(.0052)
High School dropout	.0181*	.0175*	.0415**	.0390**	.0110*	.0101
	(.0100)	(.0099)	(.0172)	(.0169)	(.0067)	(.0065)
High School Graduate			Base			
College	-.0136*	-.0146**	-.0585***	-.0631***	-.0106**	-.0123**
	(.0071)	(.0070)	(.0125)	(.0123)	(.0047)	(.0046)
University	-.0447***	-.0466***	-.1321***	-.1358***	-.0228***	-.0249***
	(.0073)	(.0072)	(.0131)	(.0129)	(.0048)	(.0047)
White-Collar	-.0411***	-.0400***	-.0412***	-.0396***	-.0256***	-.0244***
	(.0088)	(.0087)	(.0146)	(.0144)	(.0061)	(.0060)
Blue-Collar			Base			
Service Occupations	-.0420***	-.0383***	-.1142***	-.1120***	-.0264***	-.0240***
	(.0082)	(.0084)	(.0168)	(.0165)	(.0051)	(.0052
Goods Industry			Base			
Service Industry	-.0314***	-.0336***	-.0574***	-.0594***	-.0281***	-.0293***
	(.0082)	(.0081)	(.0131)	(.0130)	(.0060)	(.0060)
New England	.0020	.0006	.0450*	.0426	.0035	.0008
	(.0167)	(.0165)	(.0276)	(.0272)	(.0123)	(.0117)
Middle Atlantic			Base			
East North Central	-.0270***	-.0274***	-.0099	-.0138	-.0143**	-.0166***
	(.0089)	(.0087)	(.0173)	(.0169)	(.0058)	(.0055)
West North Central	-.0063	-.0088	.0991***	.1004***	.0069	.0032
	(.0142)	(.0139)	(.0249)	(.0245)	(.0113)	(.0106)
South Atlantic	.0096	.0039	-.0096	-.0086	.0029	-.0011
	(.0108)	(.0104)	(.0182)	(.0179)	(.0072)	(.0068)
East South Central	-.0035	-.0023	-.0295	-.0317	-.0044	-.0060
	(.0132)	(.0130)	(.0229)	(.0224)	(.0083)	(.0079)
West South Central	.0092	.0081	-.0163	-.0156	.0007	-.0012
	(.0123)	(.0121)	(.0204)	(.0201)	(.0080)	(.0077)
Mountain	.0156	.0122	.0649***	.0642***	.0053	.0009
	(.0152)	(.0148)	(.0245)	(.0243)	(.0106)	(.0099)
Pacific	-.0046	-.0035	-.0896***	-.0865***	-.0204***	-.0218***
	(.0108)	(.0107)	(.0183)	(.0180)	(.0056)	(.0054)
N	13,100	13,486	13,099	13,493	12,941	13,323

Robust standard errors are presented in parentheses.

The base category consists of a 25 to 39 years old white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the good producing industry for the year 1988. I also include a control for the regional unemployment rate.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

Table 10-Probit Model 1977-2006
Robustness Check for the Regional Unemployment Rate
Marginal effects presented for the union variable

Regional Unemployment Rate control	Monthly	Annual	Monthly	Annual	Monthly	Annual
	Insecure1		Insecure2		Insecure3	
Exogenous Variables	(1)	(2)	(3)	(4)	(5)	(6)
Regional Unemployment rate	.0067**	.0076**	.0457***	.0451***	.0089***	.0091***
	(.0033)	(.0035)	(.0058)	(.0061)	(.0022)	(.0023)
1977	.0002	.0005	-.0488	-.0384	-.0037	-.0021
	(.0196)	(.0196)	(.0309)	(.0310)	(.0133)	(.0136)
1978	-.0169	-.0174	-.0019	-.0028	-.0007	-.0012
	(.0172)	(.0171)	(.0312)	(.0312)	(.0140)	(.0139)
1982	.0338	.0241	.0183	-.0102	.0253	.0158
	(.0254)	(.0263)	(.0368)	(.0394)	(.0195)	(.0191)
1983	.0438	.0444*	-.0391	-.0116	.0290	.0351*
	(.0298)	(.0290)	(.0394)	(.0390)	(.0222)	(.0229)
1985	.0202	.0178	.0170	.0119	.0173	.0153
	(.0216)	(.0216)	(.0319)	(.0322)	(.0168)	(.0166)
1986	.0158	.0144	-.0522	-.0515	.0198	.0192
	(.0211)	(.0210)	(.0313)	(.0314)	(.0173)	(.0173)
1988			Base			
1989	.0119	.0103	.0755**	.0627*	.0127	.0103
	(.0229)	(.0226)	(.0351)	(.0349)	(.0189)	(.0182)
1990	.0086	.0055	.0350	.0142	.0022	-.0017
	(.0222)	(.0216)	(.0344)	(.0340)	(.0163)	(.0152)
1991	.0442*	.0398*	-.0028	.0142	.0427**	.0371**
	(.0258)	(.0256)	(.0339)	(.0340)	(.0224)	(.0216)
1993	.0480**	.0469**	.0417	.0444	.0532***	.0530***
	(.0258)	(.0257)	(.0341)	(.0342)	(.0236)	(.0235)
1994	.0268	.0277	.0834***	.0921***	.0298**	.0318**
	(.0207)	(.0207)	(.0298)	(.0298)	(.0178)	(.0181)
1996	.0309	.0304	.0496*	.0451	.0255*	.0244
	(.0211)	(.0210)	(.0295)	(.0294)	(.0176)	(.0174)
1998	-.0026	-.0026	.0114	.0047	.0251	.0240
	(.0188)	(.0187)	(.0304)	(.0301)	(.0187)	(.0183)
2000	.0059	.0058	-.0062	-.0163	-.0031	-.0045
	(.0204)	(.0202)	(.0315)	(.0311)	(.0144)	(.0139)
2002	.0574**	.0553**	-.0024	-.0122	.0314*	.0284
	(.0276)	(.0273)	(.0345)	(.0342)	(.0211)	(.0204)
2004	.0339	.0317	.0675**	.0541*	.0415**	.0376**
	(.0233)	(.0230)	(.0328)	(.0326)	(.0211)	(.0203)
2006	.0277	.0274	-.0084	-.0163	.0185	.0169
	(.0223)	(.0221)	(.0312)	(.0309)	(.0170)	(.0166)
Female	.0060	.0060	.0045	.0046	.0077*	.0077*
	(.0065)	(.0065)	(.0108)	(.0108)	(.0046)	(.0046)
Non-white	.0655***	.0655***	.0555***	.0558***	.0391***	.0392***
	(.0089)	(.0089)	(.0133)	(.0133)	(.0064)	(.0064)
Part-Time	.0636***	.0636***	-.0680***	-.0676***	.0276***	.0276***
	(.0102)	(.0102)	(.0140)	(.0140)	(.0072)	(.0072)
Age 18-29	-.0135*	-.0135*	-.0753***	-.0751***	-.0216***	-.0216***
	(.0072)	(.0072)	(.0128)	(.0128)	(.0046)	(.0046)

Age 30-39			Base			
Age 40-49	-.0145*	-.0145*	.1033***	.1035***	.0009	.0010
	(.0073)	(.0073)	(.0135)	(.0135)	(.0052)	(.0052)
Age 50-64	-.0289***	-.0290***	.1901***	.1898***	-.0058	-.0059
	(.0073)	(.0073)	(.0145)	(.0145)	(.0052)	(.0052)
High School dropout	.0176*	.0175*	.0390**	.0393**	.0101*	.0101
	(.0099)	(.0099)	(.0169)	(.0169)	(.0065)	(.0065)
High School Graduate			Base			
College	-.0147**	-.0146**	-.0631***	-.0631***	-.0123**	-.0123**
	(.0070)	(.0070)	(.0123)	.0123	(.0046)	(.0046)
University	-.0467***	-.0466***	-.1358***	-.1355***	-.0250***	-.0249***
	(.0072)	(.0072)	(.0129)	(.0129)	(.0047)	(.0047)
White-Collar	-.0398***	-.0400***	-.0396***	-.0398***	-.0243***	-.0244***
	(.0087)	(.0087)	(.0144)	(.0144)	(.0060)	(.0060)
Blue-Collar			Base			
Service Occupations	-.0383***	-.0383***	-.1120***	-.1115***	-.0240***	-.0240***
	(.0084)	(.0084)	(.0165)	(.0166)	(.0052)	(.0052
Goods Industry			Base			
Service Industry	-.0336***	-.0336***	-.0594***	-.0593***	-.0293***	-.0293***
	(.0081)	(.0081)	(.0130)	(.0130)	(.0060)	(.0060)
New England	.0001	.0006	.0426	.0386	.0010	.0008
	(.0164)	(.0165)	(.0272)	(.0272)	(.0117)	(.0117)
Middle Atlantic			Base			
East North Central	-.0270***	-.0274***	-.0138	-.0139	-.0166**	-.0166***
	(.0087)	(.0087)	(.0169)	(.0170)	(.0055)	(.0055)
West North Central	-.0096	-.0088	.1004***	.0970***	.0033	.0032
	(.0138)	(.0139)	(.0245)	(.0245)	(.0106)	(.0106)
South Atlantic	.0036	.0039	-.0086	-.0110	-.0010	-.0011
	(.0104)	(.0104)	(.0179)	(.0179)	(.0069)	(.0068)
East South Central	-.0017	-.0023	-.0317	-.0322	-.0057	-.0060
	(.0130)	(.0130)	(.0224)	(.0224)	(.0079)	(.0079)
West South Central	.0088	.0081	-.0156	-.0181	-.0004	-.0012
	(.0121)	(.0121)	(.0201)	(.0201)	(.0078)	(.0077)
Mountain	.0124	.0122	.0642***	.0595**	.0018	.0009
	(.0149)	(.0148)	(.0243)	(.0242)	(.0101)	(.0099)
Pacific	-.0029	-.0035	-.0865***	-.0864***	-.0217***	-.0218***
	(.0108)	(.0107)	(.0180)	(.0180)	(.0054)	(.0054)
N	13486	13486	13493	13493		13323

Robust standard errors are presented in parentheses.

The base category consists of a 25 to 39 years old white male who is a high school graduate living in the Mid-Atlantic region and worked fulltime in a blue-collar job in the good producing industry for the year 1988.

*Significant at the 90% level—**Significant at the 95% level—***Significant at the 99% level

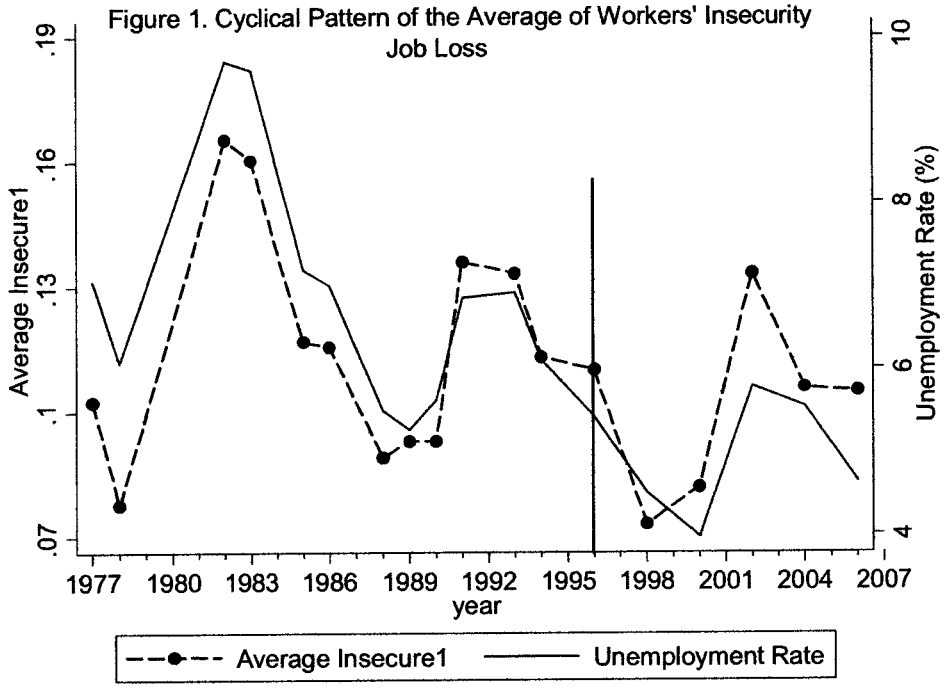


Figure 1. Cyclical Pattern of the Average of Workers' Insecurity
Job Loss
Average Insecure1
.07
.1
.13
.16
.19
Unemployment Rate (%)
4
6
8
10
1977 1980 1983 1986 1989 1992 1995 1998 2001 2004 2007
year
Average Insecure1
Unemployment Rate

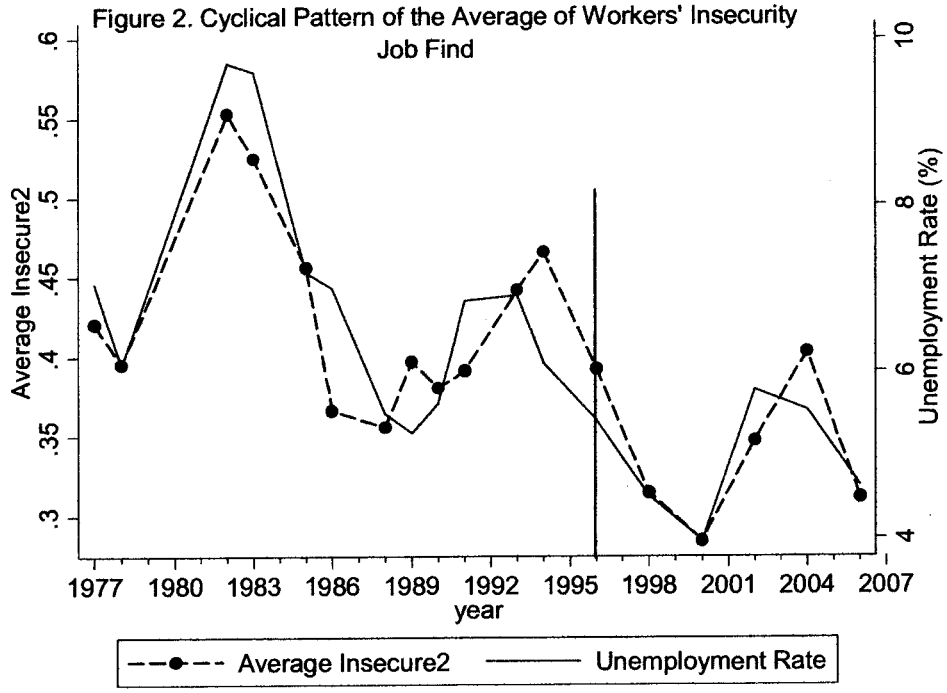


Figure 2. Cyclical Pattern of the Average of Workers' Insecurity
Job Find
Average Insecure2
.3
.35
.4
.45
.5
.55
.6
Unemployment Rate (%)
4
6
8
10
1977 1980 1983 1986 1989 1992 1995 1998 2001 2004 2007
year
Average Insecure2
Unemployment Rate

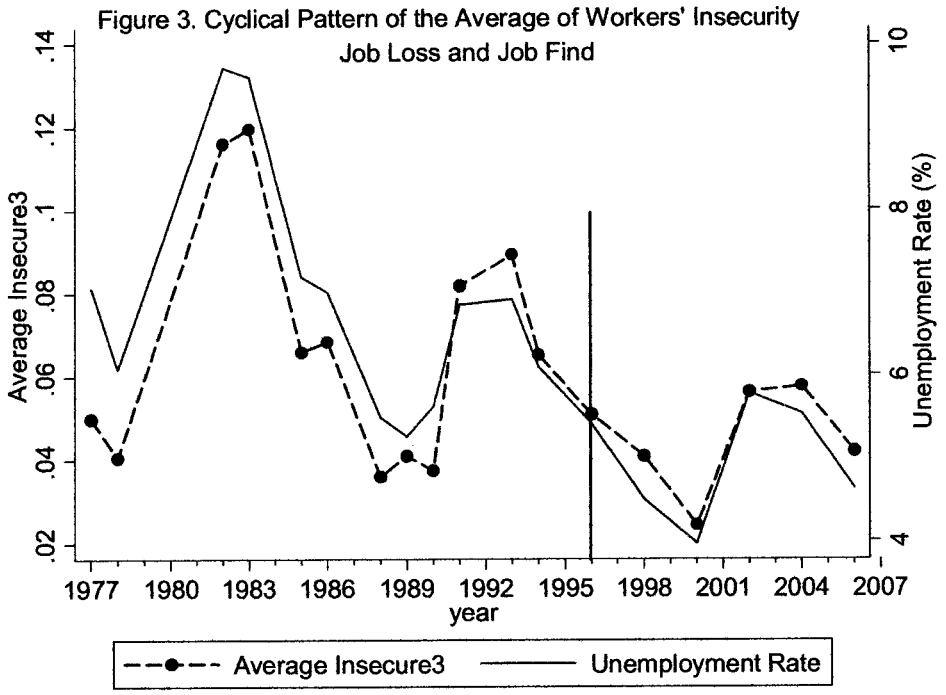


Figure 3. Cyclical Pattern of the Average of Workers' Insecurity
Job Loss and Job Find
Average Insecure3
.02
.04
.06
.08
.1
.12
.14
Unemployment Rate (%)
4
6
8
10
1977
1980
1983
1986
1989
1992
1995
1998
2001
2004
2007
year
Average Insecure3
Unemployment Rate

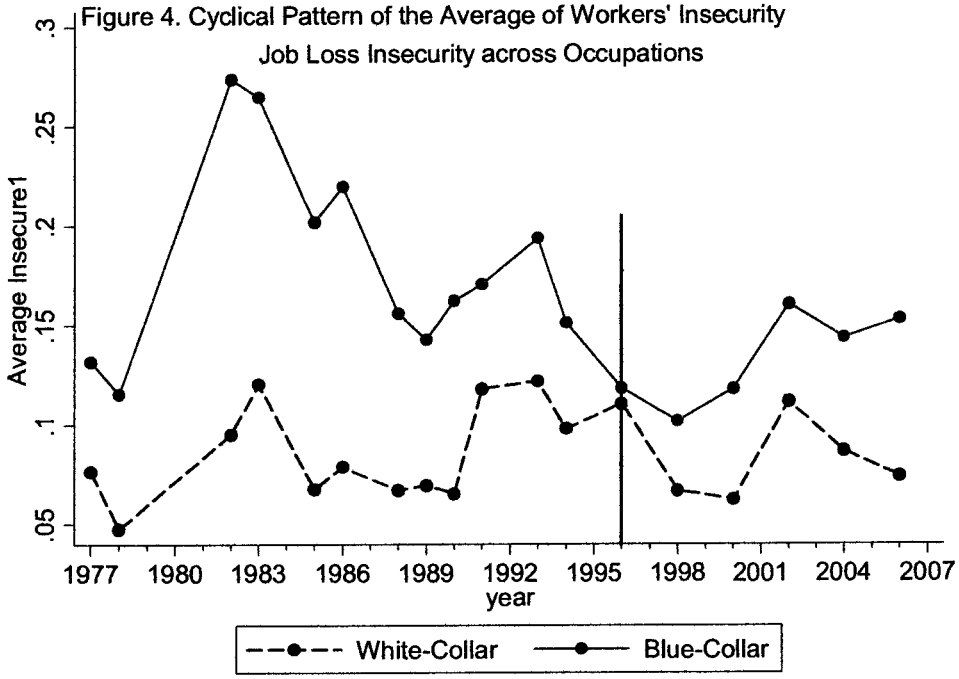


Figure 4. Cyclical Pattern of the Average of Workers' Insecurity
Job Loss Insecurity across Occupations
Average Insecure1
.05
.1
.15
.2
.25
.3
1977
1980
1983
1986
1989
1992
1995
1998
2001
2004
2007
year
White-Collar
Blue-Collar

Figure 5. Cyclical Pattern of the Average of Workers' Insecurity
Insecurity about finding a comparable job across Age

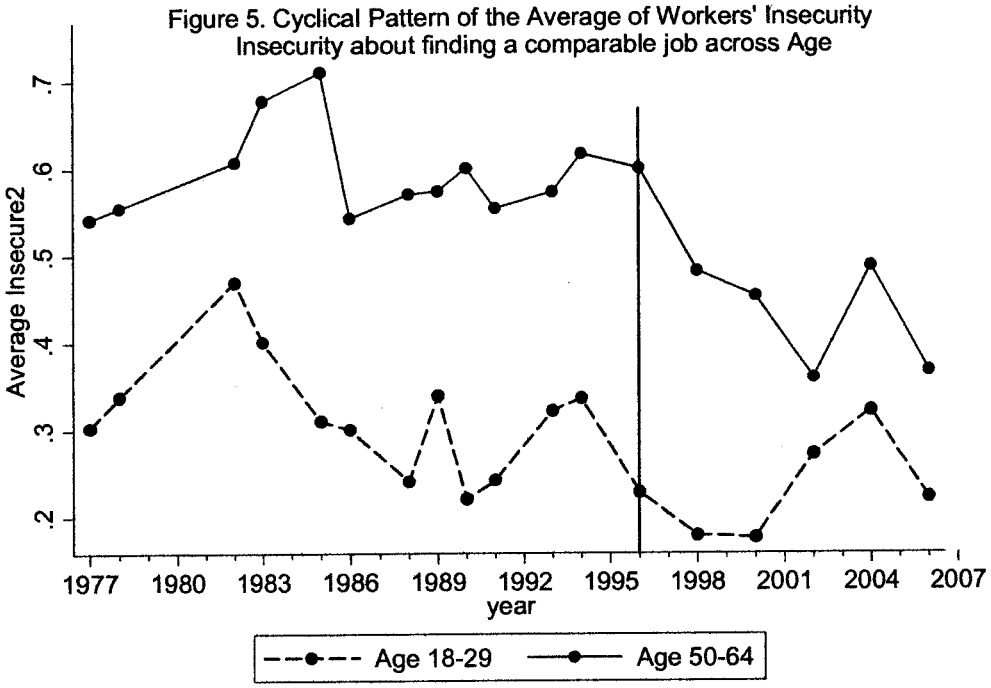


Figure 6. Cyclical Pattern of the Average of Workers' Insecurity
Job Loss Insecurity across Industry

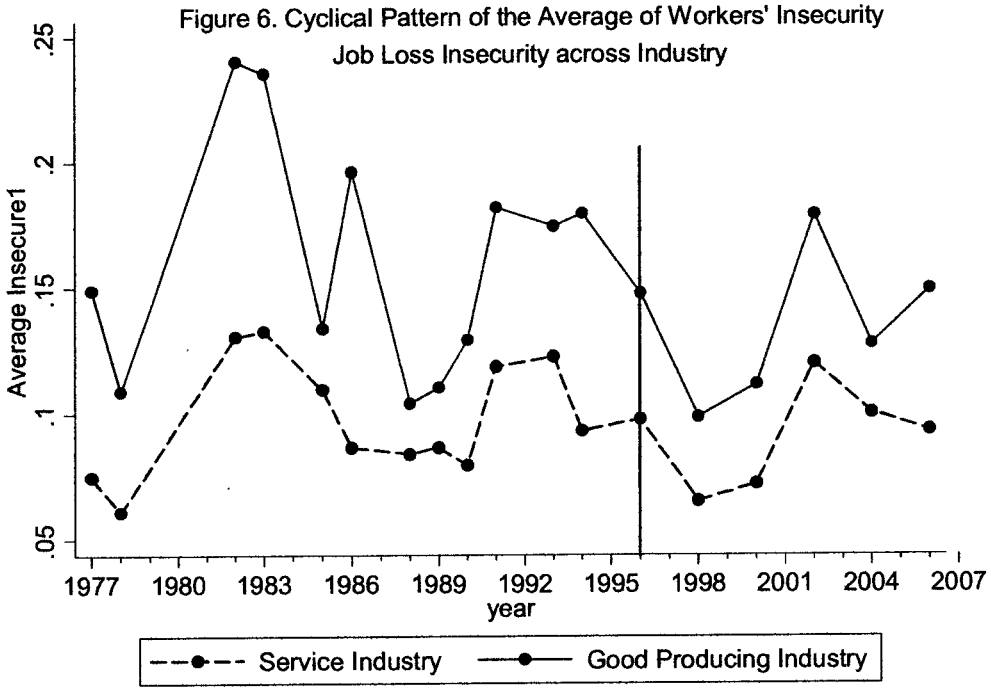
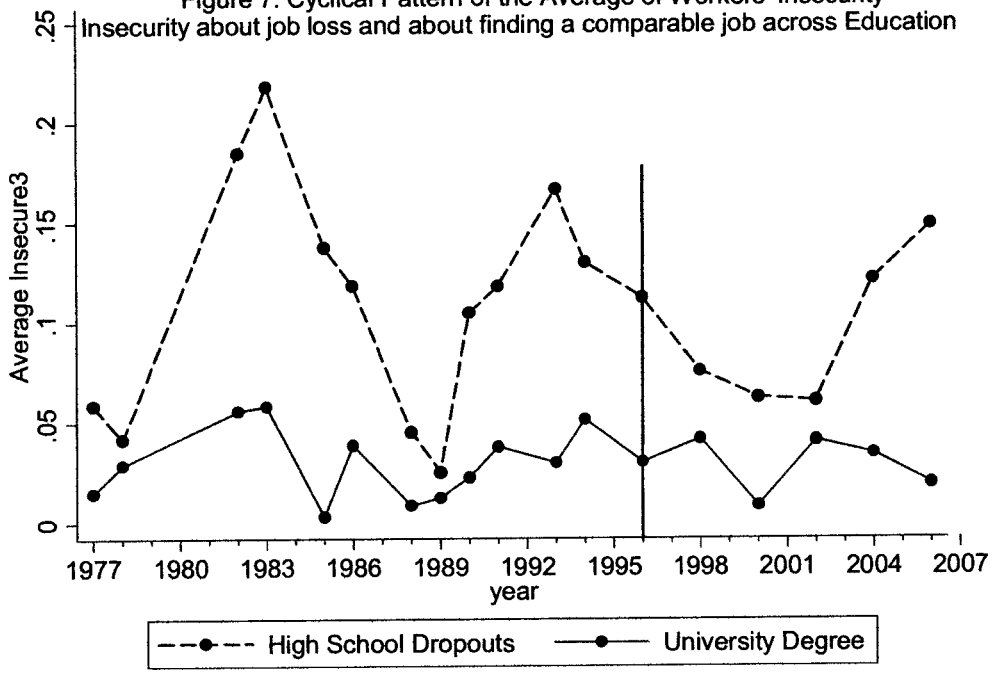


Figure 7. Cyclical Pattern of the Average of Workers' Insecurity
Insecurity about job loss and about finding a comparable job across Education



APPENDIX 1 VARIABLES

Work Status

An issue associated with the inclusion of individuals who reported being temporarily not working into either work status category is that the HRS2 variable refers to hours usually worked at all jobs. My way of dividing individuals implies that I might wrongfully classify some workers. A worker might be misclassified as full-time if he was temporarily not working and reported working more than 30 hours per week (HRS2 variable), given that those hours might be divided between two distinct part-time jobs. This worker would thus be a part-time worker classified as a full-time worker. This issue arises because the GSS does not permit to determine how many jobs the worker has.

I verify the robustness of my results to the inclusion of workers who reported being temporarily not working. The alternative would be to only include workers who were explicitly classified into either work status category. My motivation for including individuals who reported being temporarily not working is that they may add important information to the analysis on job security perceptions, especially at the aggregate level.

Occupational Categories

Given that the GSS occupation codes changed after 1991, I was faced with the challenge of consistently dividing workers into occupations. The GSS coded the workers' occupations up to the 1991 survey with the codes of the 1970 Census, and

from 1988 onwards with the 1980 Census codes.[26] This change not only resulted in a change of codes, but also in the major occupational groups.

As for the 1970 Census, the grouping was done as follows. White-Collar workers were those grouped in the following major occupational groups: professional, technical, and kindred workers, managers and administrators, sales workers and clerical and kindred workers. Blue-collar workers include craftsmen and kindred workers, operatives, transport equipment operatives and laborers. Finally, the service-occupation category includes people classified in the service workers, and private household categories. One will notice that none of my three occupational categories include farmers, who are the workers coded under the farmers and farm managers and farm laborers and farm foremen sub-categories.

The 1980 Census major occupational groups changed considerably, which complicated the steps to ensure consistency. Nonetheless, a thorough review of occupations helped me classify them as consistently as possible. To ensure this consistency, I based myself on the 1970 Census groupings. The 1980 occupational groups that are included in the white-collar occupation are managerial and professional specialty occupations and technical, sales, and administrative support occupations. Blue-collars include the precision production, craft, and repair occupations, the operators, fabricators and laborers, forestry and logging occupations and fishers, hunters and trappers. The latter two categories are sub-categories of the major occupational group named farming, forestry, and fishing occupations. This was required to ensure consistency. The service-occupation includes the service occupations major group.

[26] One will notice that these two intervals intersect each other. This is so because both the 1970 and 1980 Census codes were used for the 1988, 1989, 1991 surveys.

The farm group includes farm operators and managers and other agricultural and related occupations. These are two sub categories of the farming, forestry, and fishing major group. This major group also had a sub-group named related agricultural occupations that has been divided as follows; blue-collar (groundskeepers and gardeners (except farm), animal caretaker (except farm), graders and sorters of agricultural products) and white-collar (supervisors (related agricultural occupations), inspectors (agricultural products)). Finally, as to be consistent with Schmidt (1999), every category including nurses was considered as service-occupation.

Industry Categories

The GSS also coded the workers' industry in relation to the 1970 and 1980 Census codes. As for the years prior to 1991 using the 1970 Census codes, I included in the goods-producing industry individuals in the agriculture, forestry and fisheries, mining, construction and manufacturing.[27] For 1980, the goods-industry includes agriculture, forestry and fisheries, mining, construction and manufacturing. One will notice that the industry categories changed moderately compared to the occupation categories.

The service-industry includes the following 1970 major industry groups: transportation, communications, and other public utilities, finance, insurance, and retail estate, business and repair services, personal services, entertainment and recreation services, professional and related services and public administration. For the 1980

[27] For simplicity purposes, I included the agriculture in the goods-industry, but recall that individuals with farm occupations are excluded. In other words, my exclusion of agricultural workers is solely made via the occupational categories.

industry groups, they are transportation, communications, utilities and sanitary services, wholesale trade, retail trade, finance, insurance, and retail estate, business and repair services, personal services, entertainment and recreation services, professional and related services and public administration.