Late-career Risks in Changing Welfare States

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3  Institutional context and social policy change

In the last chapter, I highlighted the potential of the trigger events perspective for understanding the real-life implications of welfare state provisions. My review of recent mobility research suggests that three factors are crucial in shaping income trajectories around adverse trigger events: institutions that cushion the financial consequences of adverse events such as welfare state programs; the opportunity structure for compensatory countermobil-ity; and family insurance provided by the actual income and earnings potential of other household members. So far, I have only discussed these three factors in very general terms. This chapter provides a more concrete account of relevant differences between the US and Germany and of changes between the 1980s and early 2000s.

The chapter is structured as follows. Section 3.1 summarizes overall macroeconomic conditions during the observation period. Section 3.2 then sets the stage for the discussion of institutional factors by documenting marked and well-known German-American differences in the employment rates of people in their 50s and 60s: Previous research suggests that these divergent patterns cannot simply be attributed to overall labor market conditions. It convincingly argues that they are at least partly due to mutually reinforcing institutional differences that affect both the demand for and labor supply of older workers. Sections 3.3 and 3.4 take a closer look at these differences, Section 3.3 concentrates on differences that should primarily affect the demand for older workers such as differences in skill/production regimes and the strength of labor market boundaries, in continuing training participation, and in the prevalence of (statistical) age discrimination. The predominant supply-side factor stressed in the literature is the availability of early retirement benefits and other welfare state transfers that make early exit from work financially viable or even attractive. I discuss these arrangements and their employer-based functional equivalents in Section 3.4. As my primary goal in this study is to better understand the implications of changing welfare state arrangements for ordinary citizens, I will examine these regulations in particular detail. Section 3.5 explores differences in earnings arrangements which influence the extent to which the impact of adverse events is buffered by spousal income. Section 3.6 summarizes and concludes.
3.1 Macroeconomic context

As I will discuss below, Germany and the US are characterized by marked institutional differences that likely affect the (re)employment prospects of older workers in systematic ways. However, these prospects can also depend on overall labor market conditions. Macroeconomic conditions may influence the consequences of retirement or job loss also through other channels, for example, by affecting the growth rate of private retirement savings (Burtless 2003; Wolff 2011). It will not be possible to unambiguously disentangle the role of macroeconomic context from that of other (institutional) variables in the empirical analysis. Some background information on macroeconomic conditions is nevertheless indispensable for an informed interpretation of the results presented in later chapters.

Figure 3.1 depicts annual GDP growth (upper graph) and harmonized unemployment rates (middle graph) for the US and Germany (West Germany/Federal Republic until 1990; all of Germany thereafter). The bottom graph shows official unemployment rates for East and West Germany, that is, the former German Democratic Republic and the former Federal Republic of Germany.

German-American differences are especially clear for the unemployment rate, which exhibits greater year-to-year stability (I will not discuss GDP growth explicitly, as this indicator leads to very similar conclusions). The (West) German unemployment rate was lower than the American through most of the 1980s. Toward the end of that decade, both countries had very similar unemployment rates in the neighborhood of 5%. In both countries, unemployment rose during the early 1990s. In the US the increase was the result of a ‘normal’ recession, and the unemployment declined steadily after 1992, remaining relatively low (and certainly far lower than in Germany) until the ‘Great Recession’ of the late 2000s. The German case looks very different. Here, 1990 marked the beginning of a more persistent increase in the unemployment rate that brought the latter up to a value of approximately 10% in 1997. After a noticeable decline around the year 2000, the unemployment rate climbed again, reaching a new high in 2005. Since then it has declined substantially and did not increase much during the economic crisis of the late 2000s, a fact that has received much attention recently (see, e.g., Burda and Hunt 2011). In fact, the years 2009 and 2010 were the first years since 1992 when the German unemployment rate was lower than the American.

The bottom graph shows that the increase in the German unemployment rate during the 1990s is closely related to German reunification.
Unemployment in East Germany rose massively in the course of the transition and has remained far above West German levels ever since.

Over the observation period of this study, macroeconomic conditions were thus more favorable in the US, especially since the most recent recession is not covered by the American data which are only available until 2004/05. Perhaps more importantly, trends over time differed between the two countries. In the US, the institutional changes discussed below occurred in a context of improving labor market conditions: The average American unemployment rate was 7.1% during the years 1981-1990 and only 5.6% during the years 1991-2000. By contrast, the average German unemployment rate during the 1980s was 5.2%, compared to an average rate of 8.1% in the 1990s. These differences in overall macroeconomic context are important to keep in mind when interpreting the results presented in later chapters.
3.2 Differences and trends in the employment levels of older people

Figure 3.2 depicts overall and full-time employment rates of German and American men and women in their late 50s and 60s from 1970 to 2010. It illustrates three important ‘stylized facts’. First, employment rates of older American and German men fell substantially during the 1970s and 1980s, as in most other industrialized countries (e.g., Blöndal and Scarpetta 1999; Ebbinghaus 2006). This trend was more dramatic in Germany than in the US. Due to secular increases in labor market attachment, the picture is more ambiguous for women. However, once cohort differences in overall labor force participation are taken into account, women too can be shown to have left employment at ever younger ages during the 1970s and 1980s (Ebbinghaus 2006: 7-8).

Second, and relatedly, older Germans were much less likely to work than their American counterparts throughout the 1980s and 1990s. Among men, differences were noticeable at ages 55-59, yet even more pronounced at ages 60 and above. During the 1990s, barely more than a fourth of German men aged 60-64 worked for pay, compared to over 50% of their American counterparts. Despite slight increases in recent years (data are available only from the late 1990s onward), work after age 65 remains a marginal phenomenon among German men. The employment rate of American men ages 65-69 was considerably higher throughout the period from 1970 to 2010, exceeding 20% in all years. It is worth noting that in 1970, before the trend toward earlier retirement took off, employment rates of German and American men had been quite similar. In that respect, the picture is different for women. As with older men, German women were less likely than American women to work during the 1980s and 1990s. A noticeable difference, however, existed already in 1970, attesting to long-standing German-American differences in female labor supply. It is beyond the scope of this study to explain these differences in female labor force participation (for further discussion, see Lewis [1992]; Jaumotte [2003]; Pettit and Hook [2005], among many others), but I will revisit them when discussing country differences in earnings arrangements in Section 3.5.

A third and last result apparent from Figure 3.2 is that the trend toward earlier retirement has recently been reversed in both countries and for women as well as for men. Among men, the reversal started in the mid-to late 1990s. The increase in employment rates has been much more pronounced in Germany, where prior declines had also been stronger. However, American men’s employment rates have also increased noticeably, especially at ages 60
and above. Given broader trends toward increased labor market attachment, older women’s employment rates have risen more strongly, and for American women ages 55-59 employment rates began to trend upward already in the 1980s. Finally, for German women, full-time employment rates (depicted by the lighter lines) have increased much less than overall employment rates.

How can these country and period differences in the labor supply of older people be explained? There is widespread agreement that they cannot simply be attributed to differences in overall labor market conditions. One tremendously influential perspective, articulated most forcefully in the
economic literature on early retirement, emphasizes financial incentives. According to this view, differences in the financial incentives provided by public pension programs go a long way toward explaining patterns in Figure 3.2 (Blöndal and Scarpetta 1999; Gruber and Wise 1999, 2004b; Duval 2003). This literature argues that public pension systems often impose an ‘implicit tax’ on the earnings of older workers: Most public pension programs grant workers some discretion concerning the age when they claim retirement benefits. Claiming benefits earlier will usually result in lower monthly benefits to account for the fact that benefits will be collected for a longer period of time. Often, however, benefit adjustments are quite small so that delaying benefit take-up reduces expected lifetime benefits or, more precisely, so-called ‘Social Security Wealth’ (ssw), that is, ‘the expected present discounted value of promised future social security benefits’ (Gruber and Wise 2004a: 6). It is this reduction in expected lifetime benefits due to delayed benefit take-up that can be considered an implicit tax. Benefit adjustments that are just large enough to preserve the value of expected benefits are referred to as ‘actuarially neutral’ or ‘actuarially fair’.

This literature has amassed considerable evidence that financial incentives for early retirement in public pension programs and other public transfer programs are an important source of country and period differences in older workers’ labor supply (Gruber and Wise 1999, 2004b). Indeed, there can be little doubt that Germany sustained more generous early retirement provisions than the United States throughout the observation period, as I will explore in greater detail in Section 3.4.

Sociological and gerontological research on early retirement generally appears to have accepted that financial incentives are important in shaping retirement timing. Yet, research in these disciplines has also been crucial in developing richer accounts of retirement behavior, both on the micro level of decision-making and on the macro level of institutional context. On the micro level, one of the most crucial contributions has been to direct attention to the role of ‘push factors’ such as health problems or job loss in the process of retirement (see, e.g., Guillemard and Rein 1993; Shultz et al. 1998; Szinovacz and Davey 2005; Radl 2007, 2012a), as already noted in the discussion voluntary vs. involuntary retirement at the end of Chapter 2.

As for the macro level of pension policy, a key insight is that early retirement policies can be seen as distinct, path-dependent responses to common challenges (to macro-level push factors in a sense): the economic (oil) crises of the 1970s, accelerated sectoral and technological change, and economic globalization (Ebbinghaus 2001, 2006; Buchholz et al. 2006; Hofäcker 2010; Buchholz et al. 2011). An important motive for implementing
early retirement policies was to reduce overall labor supply during times of mass unemployment, in the hope that this would open up job opportunities for younger workers without endangering social peace (e.g., Ebbinghaus 2001, 2006). The prevailing view now is that early retirement policies did not actually have this desired effect (Kalwij et al. 2009; Börsch-Supan and Schnabel 2010; Gruber and Wise 2010).

To a considerable extent, the economic and technological pressures noted above were and still are common to all industrialized countries. Why then did some countries (such as Germany) put much greater emphasis on early retirement in their responses to these challenges than others (such as the United States)? I will not attempt to provide a comprehensive answer to that question because my primary aim is not to explain country differences and changes in pension policy (see Ebbinghaus [2001, 2006] for a seminal effort that elucidates how complex interactions among public authorities, employers, and workers shape retirement policy). Given my overarching interest in the economic well-being of older workers, I will primarily focus on one general reason why there may be a greater need (and electoral demand) for early retirement policies in the German context: the relatively low demand for older workers.

3.3 Institutional context and the (re)employment prospects of older workers

This section discusses crucial institutional differences between the United States and Germany that are often argued to affect the demand for older workers. These differences are most obviously relevant to the present study because they affect the reemployment prospects of displaced older workers, that is, the prospects for compensatory countermobility after late-career job loss. This is not to say, however, that these factors are unrelated to the retirement and income trajectories of workers who enjoy smooth late careers. For example, low rates of continuing training participation (see below) may exacerbate the problem that the skills of older workers are (perceived as) obsolescent. This in turn may induce employers to promote (voluntary) early retirement of their employees by offering ‘golden handshakes’ in the form of severance pay (Eichhorst 2008) and to advocate public early retirement policies in an effort to externalize the costs of workforce restructuring (Ebbinghaus 2006).

Buchholz et al. (2006, 2011) argue that economic globalization and accelerated technological change have negatively affected the labor market
situation of older workers. Technological and sectoral change requires firms to update the skill profiles of their work forces and lead to overall increases in labor market turnover. This may substantially lower the attractiveness of older workers as their skills and qualifications are more likely to be outdated and because retraining efforts may be too costly given their imminent retirement (Ebbinghaus 2006: 30f.). This problem may be exacerbated by the fact that older workers often receive comparatively high wages due to deferred-compensation policies that tie wages to seniority (Lazear 1979). Finally, older workers tend to be over-represented in the shrinking sectors and occupations and where the need to ‘shed’ labor is most pressing (Blöndal and Scarpetta 1999).

These challenges are more or less common to all industrialized countries, but their precise impact on older workers is likely conditioned by ‘institutional filters’ (Buchholz et al. 2006; Hofäcker 2010; Buchholz et al. 2011). In other words, the precise implications of these macro level trends for the employment prospects of older workers depend on their interaction with a country’s institutional makeup. In the following, I focus on four crucial aspects: Skill regimes and labor market boundaries, continuing training participation and lifelong learning, employment protection legislation, and age discrimination.

‘Varieties of Capitalism’, skill regimes, and labor market boundaries

The literature on ‘Varieties of Capitalism’ (voc; Hall and Soskice 2001b) famously contrasts two ideal typical systems of production – coordinated market economies (CMES) and liberal market economies (LMES) – with Germany representing the former and the United States representing the latter type. This dichotomy seeks to capture the purported fact that industrialized countries exhibit distinctive institutional configurations across such diverse spheres as education and training systems, industrial relations, corporate governance, and social protection. In other words, institutions tend to cluster, presumably because of ‘institutional complementarities’ which arise when ‘the presence [...] of one [institution] increases the returns from [...] the other’ (Hall and Soskice 2001a: 7). Such complementarities in turn influence the preferences and optimal strategies of relevant actors such as firms or workers, inducing them to behave in ways that are consistent with, and reinforce, existing arrangements.

For my purposes, one of the most important insights of the voc approach is that coordinated and liberal market economies tend to rely on different skill mixes or ‘skill regimes’, which in turn are supplied by distinctive
systems of skill formation. A prime example is Germany’s characteristic system of vocational education and training (Mayer and Solga 2008; Ebner 2013).

The German skill regime emphasizes specific skills, whereas the American relies primarily on general skills. The distinction between general and (various kinds of) specific skills originates from human capital theory (Becker 1964). By definition, general skills are portable across – and will thus be rewarded in – all kinds of jobs, whereas portability of specific skills is limited. It is common to further differentiate specific skills into skills that are specific to certain industries, occupations, or firms: As the labels suggest, industry-specific skills can be put to use in different jobs as long as they are in the same industry, while the use of firm-specific (occupation-specific) skills is restricted to jobs in one and the same firm (occupation).

From the worker’s standpoint, investing in specific skills is risky because the investment will only pay off if she finds the ‘right’ kind of job (Iversen 2005). Estevez-Abe et al. (2001) argue that an important function of status-maintaining social protection therefore is to promote workers’ readiness to invest in occupation, industry, and firm-specific skills. Generous earnings-related benefits lessen workers’ reluctance to invest in specific skills: They ensure that their investment will continue to be rewarded during periods of joblessness (because benefits are related to wages on the previous job) and that unemployed workers can afford longer job searches, which increases their chances of finding a job that matches their skill profile (Gangl 2004b, 2006). To the extent that employers rely on workers with specific skills, they should therefore be supportive of social protection (Mares 2001). According to this perspective, one reason why Germany sustains relatively generous, status-maintaining social policies is that the product market strategies of German firms require higher levels of specific skills (Sorge and Streeck 1988).¹

¹ The literature is somewhat ambiguous as to what types of specific skills (industry, occupation, or firm-specific) are most salient in the German system. Some authors (e.g., Estevez-Abe et al. 2001) seem to suggest that all three kinds of specific skills are important in Germany. Others characterize Germany as an ‘occupational’ (and the United States as an ‘internal’) labor market, which suggests that Germany is distinguished by its reliance on occupation-specific skills (Marsden 1999; Gangl 2001). The general assumption that skills with limited portability play a larger role in the German than in the American context seems to be relatively uncontested, however.

A potential drawback of the German emphasis on non-portable specific skills is that it impedes worker mobility: Workers are faced with marked ‘labor market boundaries’ that limit their opportunities for inter-occupational
or inter-industry mobility and, more important in the present context, their opportunities for reemployment after late-career job loss (DiPrete et al. 1997; Mayer 2005; Blossfeld et al. 2011). In the German case, labor market boundaries are further reinforced by a strong credentialism that ties access to skilled occupations to formal qualifications (DiPrete et al. 1997; Shavit and Müller 1998; Kerckhoff 2004). In the US, by contrast, general education is less standardized and occupational skills tend to be acquired via informal on-the-job training. Formal credentials are less important for gaining access to occupations or individual jobs (Allmendinger 1989). Mobility prospects for German workers may be better when it comes to transitions that do not involve occupational mobility. In this case, standardized credentials may facilitate moves across firms by reducing uncertainty about the skills a given worker has to offer (Gangl 2001). However, this may be of little help to older workers who are often displaced from declining industries and occupations (Blöndal and Scarpetta 1999) and whose certified skills may be perceived as obsolescent (Buchholz et al. 2011).

Continuing training and lifelong learning

Participation in continuing training or ‘lifelong learning’ is often argued to be indispensable for keeping the skills of workers in tune with changing job requirements, especially in an environment characterized by rapid technological progress and sectoral restructuring (Buchholz et al. 2011; Eichhorst 2011). Hence, the (re)employment prospects of older workers can be expected to depend also on the prevalence of continuing education.

The predominant view is that participation in continuing training is relatively low in Germany (Eichhorst 2011) which likely further limits the (re)employment prospects of older workers. The relative neglect of lifelong learning may also be an important reason for why until recently German employers were rather supportive of early retirement policies: In the words of Buchholz et al. (2011: 16) it leads to a situation where ‘adaptation to structural and technological change is mainly achieved via generational replacement in the labor market’. Yet, causality likely runs both ways in that prospective early retirement also undercuts incentives for investing in the continuing training. Initially, training requires investments in the form of time and money from the worker, employer, or both. Older workers planning to retire soon, and employers expecting their employees to do so, have little incentive to undertake these investments, as the expected pay-off period of their investments will be relatively short. I return to this issue in my discussion of statistical age discrimination below.
In the United States, rates of continuing training participation are higher. Especially for younger workers, on-the-job training is crucial for the acquisition of specific skills which play a relatively marginal role in formal educational institutions (Allmendinger 1989). With respect to older workers, Buchholz et al. (2011: 16) suggest that participation is higher in liberal than in conservative welfare states because low levels of social protection lead to a situation where ‘[o]lder workers have to undergo constant retraining in order to remain competitive on changing labor markets’. According to their reasoning, older workers in liberal welfare states can be expected to develop and maintain their skills simply because this is necessary to avoid downward job mobility, unemployment, or involuntary early retirement – scenarios that are rather unattractive due to limited levels of public income support. They contrast this pattern of ‘market-induced employment maintenance’ with the ‘public-induced employment maintenance strategy’ of Scandinavian countries where the state pursues a more active role in maintaining and adapting the skills of the workforce (Buchholz et al. 2011: 16-17).

The extent of participation in continuing education is difficult to measure because it is often short-term and less formalized than education in school, vocational training, or institutions of higher education. That said, Organisation for Economic Co-operation and Development (OECD) data on adult participation in continuing training confirm that Americans were more likely to participate in continuing training than their German counterparts in the early 2000s (OECD 2005: 310ff.). While not being available for the United States, Eurostat data on levels of training participation in European countries underline this finding by showing that participation levels of Germans aged 25-64 are below the EU-27 average (Eichhorst 2011: Figure 3 on p.5).

Employment protection legislation

Another important difference between Germany and the United States is the extent of labor market regulation. In particular, Germany has considerably stricter employment protection legislation (EPL) than the United States (OECD 1999: Ch. 2; Estevez-Abe et al. 2001). From the perspective of the VOC approach, EPL is yet another means of raising workers’ readiness to invest in non-transferable skills, because it reduces the likelihood of being dismissed from a well-matched job where those skills are remunerated (Estevez-Abe et al. 2001). It is worth noting, however, that Germany extended the possibilities for fixed-term employment and other forms of ‘non-standard’ or ‘atypical’ employment such as temporary agency work over the course of the observation
period, whereas protection for workers with permanent contracts did not change much (DiPrete et al. 2006; Giesecke 2006; Gebel and Giesecke 2011).

The prevailing view is that stricter EPL has no clear effect on overall levels of employment or unemployment, but that it reduces labor market turnover and affects the composition of the unemployed (OECD 1999; Boeri et al. 2000; Esping-Andersen and Regini 2000; Gebel and Giesecke 2011). Under stricter EPL, employers may be more likely to hold on to workers during episodes of low demand, yet they may also be more reluctant to hire workers on a permanent basis when demand increases. By the same token, employers will be more likely to respond to demand changes via internal flexibility (e.g., changes in work hours) and by hiring workers on a fixed-term basis, if the latter is permissible (Bertola et al. 2000; Boeri et al. 2000). Previous studies indeed show that stricter EPL is associated with lower rates of outflow from unemployment and thus with longer unemployment spells (e.g., OECD 1999; 2004). As for the composition of employment and unemployment, past research provides evidence that stricter EPL promotes labor market segmentation or insider-outsider divides, with prime-age men enjoying greater job stability and marginal labor market groups such as young workers, low-skilled workers, or women facing greater risks of unemployment and atypical, unstable employment (Esping-Andersen and Regini 2000; OECD 2004; Gebel and Giesecke 2011).

As for older workers, Germany’s stricter EPL likely reduces the risk of involuntary job loss for those who are employed on permanent contracts. In fact, German regulation of dismissal procedures explicitly requires that a worker’s age be considered in dismissal decisions when jobs are terminated for business reasons (betriebsbedingte Kündigung) (Eichhorst 2006). While older workers with permanent contracts may thus benefit from Germany’s stricter EPL, those who have lost their job may encounter greater difficulties in finding reemployment, as employers may be reluctant to hire older workers (who enjoy special protection) on a permanent basis. For similar reasons, Dorn and Sousa-Poza (2010) expect stricter EPL to increase the proportion of retirements that are involuntary, a prediction that is supported by their empirical analysis of 19 industrialized countries. To mitigate this potential problem, legislation restricting the use of temporary contracts ‘without substantive cause’ (sachgründlose Befristung) has long included exemptions for workers above a certain age threshold – 58 until 2002 and 52 from 2003 onward (Eichhorst 2006). Nevertheless, it does seem plausible that

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2 In 2005, the European Court of Justice ruled that these exemption clauses constitute a form of age discrimination. To counter this objection, the exemption clause now requires that
Germany's stricter EPL diminishes the reemployment prospects of older German workers compared to their American counterparts, or at least their chances of securing (more attractive) jobs with permanent contracts.

Age discrimination and feedback effects of retirement patterns

Age discrimination or ‘ageism’ (Bytheway 2005; OECD 2011) is another possible factor influencing the employment chances of older workers. The term ‘discrimination’ refers to the differential treatment of individuals on the basis of ascriptive characteristics such as race, gender, class background, or age, rather than on the basis of differences that are inherently relevant in a given setting. Discrimination can occur in various settings (e.g., on labor, housing, or marriage markets) and the meaning of ‘inherently relevant differences’ will differ accordingly. In the context of labor markets, it is common to think of ‘worker productivity’ as the inherently relevant characteristic (see, for example, Aigner and Cain 1977).

Discrimination can take two basic forms: taste-based and statistical. Taste-based discrimination against older workers would occur if an employer favored younger workers simply because of their being younger and not because of characteristics that are related to the worker’s productivity. In addition to employers’ preferences, tastes of co-workers and customers are further potential sources of discrimination (Becker 1957). For example, if customers have a preference for being served by younger workers, a profit-maximizing employer would be inclined to prefer younger workers even if she entertained no age-related tastes herself.

Statistical discrimination (Phelps 1972; Arrow 1973; Aigner and Cain 1977) is a form of discrimination that may occur even in the absence of discriminatory tastes. It arises because employers cannot directly observe the productivity of prospective employees and therefore have to form beliefs about their expected productivity on the basis of observable characteristics. For example, higher age may signal lower average computer skills. Other things being equal, employers screening applicants for a job requiring computer use can then be expected to treat older workers less favorably and thus fail to reward the competencies of computer-proficient older workers. If employers’ beliefs about average productivity levels – or, more generally, conditional productivity distributions – of different groups are correct and if more cost-efficient ways of assessing worker productivity do not

workers are above age 52 and have been non-employed for at least four months, thus explicitly targeting older people with labor market difficulties.
exist, then statistical discrimination is efficient in the sense of being profit-maximizing. This does not hold, however, for statistical discrimination based on erroneous beliefs about group-specific productivity distributions (Blau et al. 2006).

Do older workers really face discrimination? Perhaps the most compelling empirical evidence on labor market discrimination comes from so-called audit studies which compare job search outcomes of fictitious applicants. The crucial advantage of audit designs over studies based on standard observational data is that they allow for controlled manipulation of worker characteristics, thus keeping omitted variable problems to a minimum (Lahey 2008). The audit approach is somewhat difficult to apply in the study of age discrimination, because resumes of workers of different ages cannot be rendered identical in terms of key productivity-related characteristics such as work experience or year of graduation (which may signal currentness of skills). Another potential limitation is that audit studies focus on entry-level jobs (where employers are unlikely to conduct extensive background checks on applicants): An older worker who is (still) applying for low-level jobs may be considered as having revealed low potential, whereas applications by younger workers may be regarded as typical of early career stages (Lahey 2008). Despite these complications, several studies have studied age discrimination using audit designs and practically all of them conclude that older workers face substantial discrimination in the hiring process (Bendick et al. 1997, 1999; Riach and Rich 2006, 2007a,b; Lahey 2008).

A potentially important source of statistical discrimination against older workers is their expected time until retirement. Employers may be reluctant to hire a worker whom they expect to leave sooner rather than later: Most jobs, and skilled ones in particular, require some ‘investment period’ during which workers acquire the job- and firm-specific skills needed for being maximally productive. Other things being equal, workers will therefore be more attractive when their expected tenure is longer, as this will leave more time for the initial ‘investment period’ pay off. A similar argument can of course be made with

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3 Becker’s (1957) famous argument that discrimination is inefficient and that discriminating employers could therefore not survive in competitive markets would thus not apply in this case where statistical discrimination is cost-efficient (Blau et al. 2006). In any case, this argument crucially rests on the assumption of perfectly competitive markets (Heckman 1998), an assumption whose empirical relevance is dubious (Ganßmann 2003).

4 Empirical evidence on age-productivity differentials suggests that overall the relationship between age and productivity is at most only slightly negative, at least up to age 65 (Börsch-Supan et al. 2005; Garibaldi et al. 2010). This literature also suggests that age-productivity profiles depend on job tasks and therefore vary across firms and industries (Garibaldi et al. 2010).
respect to further training of workers who are already with an employer. The direct costs of replacing a worker (search costs) are another reason why expected tenure may often be a crucial criterion in hiring decisions.\(^5\) The potentially important role of expected tenure for hiring and training decisions suggests that prevailing retirement patterns have far-reaching implications for older workers' labor market prospects via processes of statistical discrimination. If the majority of workers retire around age 60, workers in their late 50s will face great difficulties in finding jobs with ascending tenure-productivity profiles. By the same token, employers will be reluctant to invest in the skills of their older workers, suggesting that the prevalence of early retirement is a major reason for the rather steep negative age-training gradient in Germany (Eichhorst 2006). An 'early-exit culture' may thus be self-reinforcing, as those older workers who would prefer later retirement will have few job opportunities and will often be excluded from employer-supported training measures that would sustain and enhance their productivity.

I have elaborated four reasons why the employment prospects of older workers are likely to be less favorable in Germany than in the US: an emphasis on specific skills that results in marked labor market boundaries, lower levels of participation in continuing education, stricter employment protection legislation, and the possibility that an ‘early exit culture’ (Hult and Edlund 2008) exacerbates statistical discrimination on the basis of age. In the context of the present study, these factors are most immediately relevant because they affect the opportunities for compensatory countermobility after late-career job loss. Not only are displaced German workers prone to face greater difficulties in finding adequate reemployment than their American counterparts; it seems likely that differences in the demand for older workers also affect the scope for labor supply responses by potential spouses who will often be in their 50s or 60s as well.

From the perspective of displaced older workers, limited reemployment prospects create a greater need for ‘welfare-sustaining employment exit policies’ that limit the economic risks associated with late-career job loss (DiPrete et al. 1997: 328). Differences and recent trends in such policies are a central issue of the following section, where I provide an in-depth account of the main welfare state programs (and employer-based functional equivalents) that influence the financial consequences of late-career job loss and voluntary retirement.

\(^5\) Differences in expected tenure are also often cited as an important source of statistical discrimination against women (Bielby and Baron 1986).
3.4 Differences and changes in public and employment-based protection

This section provides a comprehensive account of German-American differences, and recent changes, in several key welfare state programs: (means-tested) basic assistance programs, unemployment insurance, public and complementary pensions, disability benefits, and progressive income taxation. As noted above, economic literature on early retirement has primarily studied the impact of welfare state programs on older workers’ labor supply and (early) retirement. The trigger events perspective developed in Chapter 2 offers a different take on these programs: They can be seen as societal institutions that cushion the economic consequences of mobility-triggering life events. This is the primary perspective adopted in this study where I am interested in the contribution of welfare state arrangements to German-American differences and alleged recent increases in economic insecurity.

Before beginning with the in-depth review of individual programs, it is useful to provide some basic orientation. An obvious starting point for the country comparison is Esping-Andersen’s (1990) threefold distinction of the social-democratic, conservative-corporatist, and liberal-residual welfare regimes. Germany is widely considered as a prime example of the conservative regime, while the United States epitomize the liberal cluster. The regimes identified by Esping-Andersen are ideal types and different welfare states may conform to these ideal types to varying extents. This has sparked considerable debate concerning the classification of particular countries and the overall usefulness of the typology (Arts and Gelissen 2002). For example, several authors (e.g., Ferrera 1996) have argued that it is useful to distinguish a fourth ‘southern’ cluster exemplified by Mediterranean countries such as Spain and Italy. Germany and the United States generally belong to the countries whose classification is less contested, but even in their cases some authors note considerable discrepancies between ideal typical descriptions and empirical reality (cf. Alber [2010] for the American case).

The stereotypical conservative welfare state features comparatively high contribution-based and earnings-related public benefits that serve the goal of status preservation for those who have earned claims via covered employment (Esping-Andersen 1990). Labor markets tend to be regulated with relatively strong employment protection, which reduces labor market turnover and stabilizes careers, possibly at the cost of ‘outsiders’ (women, labor market entrants, or low-skilled workers) who do not succeed in securing
a well-protected ‘insider’ position (Blossfeld et al. 2007b). Conservative welfare states are heavily transfer-oriented and public provision of services such as childcare is limited, which goes hand in hand with a reliance on male breadwinning and women’s unpaid care work (Lewis 1992; Esping-Andersen 1999).

The liberal welfare state, by contrast, relies on the market for the provision of welfare. The degree of ‘de-commodification’ which ‘occurs when a service is rendered as a matter of right, and when a person can maintain a livelihood without reliance on the market’ (Esping-Andersen 1990: 21-22) is lower than in the other welfare regimes. Earnings-related unemployment benefits are limited, both in terms of benefit duration and benefit levels. Long-term income support programs provide low benefit levels, are strictly means-tested and often restricted to certain ‘deserving’ population subgroups such as single mothers, the disabled, or the old. Employment is crucial for the financial well-being of non-disabled workers below retirement age. The flip side of limited public benefits is a greater salience of private and employer-provided benefits, especially in pensions and health care. The labor market is relatively unregulated and turnover is high. Public social services are even less developed than in the ideal typical conservative welfare state, but the private service sector is large due, among other things, to downwardly flexible wages.

A few introductory remarks concerning the direction of recent welfare state change are also warranted. As noted in Chapter 1, concerns about financial sustainability have been an important motive for recent welfare state reforms in many Western countries. This is perhaps nowhere clearer than in the case of public pension programs whose long-term solvency is threatened by population aging. A second and partly related motivation has been a concern about the incentive effects of many welfare state programs. According to this view, transfer programs reduce incentives for economic self-sufficiency and encourage socially costly behaviors. Again, public pension programs are a case in point: As discussed above, Germany and many other countries long offered generous early retirement options that had rather dramatic negative effects on the labor supply of able-bodied older workers in their 50s and early 60s (Blöndal and Scarpetta 1999; Gruber and Wise 1999). However, arguments about incentive effects have also been marshalled to justify reforms of many other welfare state programs, including unemployment insurance and basic assistance programs (which allegedly reduce job search and work effort) or health care (which allegedly promotes unhealthy behaviors by socializing their costs).
While this two-item list of motivations for welfare state reform is certainly not exhaustive, it may be sufficient for understanding many of the most crucial elements of recent welfare state change in Germany and the United States. In terms of specific regulations, welfare state reforms have been multidimensional and staggeringly complex. An important common denominator of many changes, however, has been to strengthen work incentives for those who are considered capable. The diverse reforms undertaken toward this end are often referred to as ‘activation policies’ (e.g., Eichhorst and Konle-Seidel 2008).

In Germany and the US, as in many Western countries, one crucial element of the activation paradigm has been to reform tax and benefit systems in order to raise the net gain from working (compared to transfer receipt), especially for low-wage workers. In the United States an important instrument designed to ‘make work pay’ (Immervoll and Pearson 2009) has been the Earned Income Tax Credit (EITC), a tax credit awarded to households with positive labor earnings below a certain threshold, which has been expanded repeatedly over the course of the observation period. In Germany, possibilities for combining work and transfer income were expanded by the fourth so-called Hartz reform which became effective in 2005 (Eichhorst et al. 2010; Alber and Heisig 2011). Earlier reforms had already introduced (partial) exemptions from social security contributions for low-earning jobs (so-called Mini/Midi-Jobs), which grew rapidly afterwards, especially among women (BA 2007). Training and counseling measures as well as other types of active labor market policy have also been extended.

These ‘enabling’ policies were accompanied by ‘demanding’ measures that raised pressures on the unemployed to return to work (Eichhorst and Konle-Seidel 2008). These include reductions in benefit levels and duration, changes in suitability criteria, and the strengthening of workfare elements ‘which require people to work in exchange for, or instead of, social assistance benefits’ (Lodemel [2000], as quoted in Koch et al. [2005: 421]).

With these stylized summaries in mind, I now take a closer look at the most important programs affecting the consequences of late-career job loss and (voluntary) exit from work. I begin with a brief description of means-tested income support programs. I then describe earnings-related insurance

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6 For example, German debates in the 1990s and early 2000s also emphasized possible negative effects of non-wage labor costs (primarily social insurance contributions) on labor demand. In addition, concerns about persistently low fertility rates as well as ‘new social risks’ (Taylor-Gooby 2004) arising from growing family instability have sparked various expansionary reforms in Germany (Bleses and Seeleib-Kaiser 2004).
benefits for the unemployed. Next, I chart the complex landscape of public and complementary pensions. I continue with a description of disability benefits and conclude with a brief discussion of progressive income taxation as another means of smoothing household income over time. I should note at the outset that the sections on means-tested benefits, unemployment insurance and old-age pensions draw heavily on excellent overview articles by Britta Grell (2011a,b) and Markus Wörz (2011b,c).

3.4.1 Means-tested income support programs

United States. In the US there is no universal cash-transfer assistance program for the population as a whole. Individuals aged 65 or older and younger workers qualifying as disabled are eligible for benefits from the federal Supplemental Security Income (SSI) program. SSI was introduced in 1974 as a federal replacement for various uncoordinated state-level programs that provided basic income support to disabled workers and older people (Grell 2011a). SSI claimants are subject to a relatively strict means test. In 2009, monthly benefits were $674 for a single person and $1,011 for married couples, with many states offering some additional cash benefits (SSA 2009: 15). In most states, SSI recipients are automatically eligible for means-tested in-kind benefits such as Medicaid, Food Stamps, and housing benefits (Daly and Burkhauser 2003). Federal SSI benefits on their own are insufficient for lifting recipients above the (absolute) federal poverty line. Like the poverty line, SSI benefits are adjusted annually to compensate for inflation and have therefore remained constant in real terms, while declining relative to median or average family income. When the program started, elderly people (65 or older) accounted for 60% of SSI recipients. Since then the role of SSI as a last safety net for the elderly in the US has declined (Elder and Powers 2006). In 2009, only 27% of all SSI beneficiaries were elderly (SSA 2009: 21). SSI receipt is increasingly concentrated among disabled people below retirement age.7

Older Americans below retirement age who do not meet the disability criterion for SSI eligibility have very limited access to long-term cash transfers. The most important alternative sources of basic income support, Aid to Families with Dependent Children (AFDC) and, since July 1997, its successor program Temporary Assistance for Needy Families (TANF), are largely restricted to families with minor children. Only 3.3% of TANF recipients were

7 Unlike benefit levels, thresholds used in means-testing have not been adjusted for increases in the cost of living, so the means test has effectively become more stringent, which likely is one important reason why fewer elderly people are claiming SSI (Nicholas and Wiseman 2009).
older than 49 in 2006. Some states sustain ‘General Assistance’ (or ‘General Relief’) programs for childless adults, but these are a heterogeneous array of more or less voluntary state or county level programs that provide very meagre benefits. In addition, these programs have been further scaled back from the 1990s onward. According to Grell (2011b: 21), ‘as of 2007, only two states paid cash welfare benefits to childless adults deemed “able-bodied”’. Childless older workers below retirement age may be eligible for food stamps and other in-kind benefits such as Medicaid or housing assistance, yet some of these programs, too, are effectively restricted to adults with children.

Germany. In Germany, a universal basic income floor was long provided by the means-tested ‘social assistance’ program (Sozialhilfe, SH). Many older people with low incomes, however, did not claim SH, mainly for fears that their children would be required to support them. In 2003, this led to the creation of a separate benefit scheme for older people over 65 and permanently disabled adults over 18 years, the so-called Grundsicherung im Alter und bei Erwerbsminderung (GAE). Under the new scheme, no recourse is made to children or parents of claimants if their annual income is below €100,000. Until 2005, GAE benefit levels were slightly above social assistance rates. Since then, they have been equal to the standard rate of SH benefits and the new basic jobseeker’s allowance, ‘Unemployment Benefit II’ (Arbeitslosengeld II, ALGII) which was created by the fourth so-called Hartz Reform in 2005. In 2009, this rate was equal to €359 for a single person, plus allowances for housing and heating. Disabled people and individuals of retirement age are entitled to GAE if their monthly income is below this standard rate and if they meet an additional asset test. Non-disabled older people below retirement age are entitled to the new ALGII (or to SH which has been continued as a much smaller program for those not considered capable of work).³

3.4.2 Earnings-related unemployment benefits

I now summarize key country differences and trends in insurance-type, earnings-related unemployment benefits. This endeavor is complicated by the fragmentation of American unemployment insurance: State-level

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³ Technically, there is a third type of benefit, Sozialgeld, which is paid to persons not capable of work but living in a household with a recipient of ALGII. Persons not deemed capable of work may be entitled to SH rather than GAE because the concept of ‘restricted earnings capacity’ used in assessing eligibility for GAE requires health problems to be longer-term.
programs form the backbone of America’s system and despite a few federal guidelines interstate variability in funding mechanisms, eligibility rules, and benefit levels is enormous (Grell 2011b). Concise summaries of the American context are therefore utterly difficult. With this caveat in mind, I begin my review of earnings-related benefits with a discussion of maximum benefit duration, which is one of the few aspects that are relatively uniform across the 50 American states. I then turn to benefit levels and conclude with a discussion of eligibility criteria.

**Benefit duration.** In the US, practically all state-level programs provide unemployment benefits for a maximum of 26 weeks. However, during periods of high unemployment, two types of measures routinely provide extended benefits to workers who have exhausted their state-level benefits. The first measure is a permanent program that provides benefits for another 13 weeks (20 weeks in some states with voluntary additional programs). Benefits are funded half from state budgets and half from federal funds. This ‘Federal-State Extended Benefit Program’ is generally triggered when the (seasonally adjusted) state insured and/or total unemployment rates exceed certain threshold values (Lake 2002; Grell 2011b). In addition to this permanent and automated supplementary program, further ad hoc extensions are often enacted during severe recessions (Grell 2011b). Table 3.1 lists the four instances of such extensions during the observation period, along with the total maximum duration of unemployment benefits, that is, the combined duration of benefits from state-level programs, automated federal extension programs, and ad hoc extensions.

**Table 3.1  Ad-hoc extensions of maximum unemployment benefit duration, 1980–2008**

<table>
<thead>
<tr>
<th>Program name</th>
<th>Dates</th>
<th>Maximum benefit duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Unemployment Compensation of 2008</td>
<td>since 7/2008</td>
<td>99 weeks</td>
</tr>
</tbody>
</table>

Source: Kohler et al. (2012b)

In Germany, maximum duration of first-tier benefits was set at 52 weeks for younger workers throughout the observation period. Older workers have

been entitled to age-graded benefit extensions since 1985. The exact pattern of age-graded extensions changed several times during the observation period (Wörz 2011c). The initial reform in 1985 extended maximum duration to 18 months for workers ages 49 and over, but the next expansion followed already in 1986. The all-time high was a maximum duration of 32 months for workers aged 55 and older (57 and older from 1997 onwards) which was in effect from January 1987 to January 2006. A comparable system of age-graded benefit duration cannot be found in the US.

Second-tier benefits could in principle be claimed indefinitely, but they were abolished in 2005. Since then claimants who have exhausted their first-tier benefits (now labeled Arbeitslosengeld I) have to rely on ALGII, the flat-rate means-tested benefits described in Section 3.4.1. In addition, maximum duration of first-tier benefits was reduced considerably after a transitional period ending in January 2006. Initially, it was set to 12 months for workers below age 54 and to 18 months for workers ages 55 and above. For workers ages 57 and older maximum duration was thus cut by 14 months. However, maximum duration for workers ages 58 and older was reextended to 24 months in 2008. Additional detail on age-graded benefit durations is provided in Dietz et al. (2008) and Wörz (2011c).

Benefit levels. Subject to maximum benefit restrictions, German first-tier as well as former second-tier benefits replace a certain proportion of average net earnings in the year before unemployment. Workers with dependent children have been entitled to somewhat higher replacement rates since 1984. Unlike with benefit duration, age plays no role for benefit levels. As shown in Table 3.2, first-tier (and, until their abolition, also second-tier) replacement rates declined noticeably over the past 30 years, at least for workers without dependent children.

Table 3.2  Replacement rates of German unemployment benefits since 1980

<table>
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<tr>
<th></th>
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<tbody>
<tr>
<td><strong>First tier (Arbeitslosengeld/Arbeitslosengeld I)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With dependent children</td>
<td>68</td>
<td>68</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>W/o dependent children</td>
<td>68</td>
<td>63</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td><strong>Second tier (Arbeitslosenhilfe)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With dependent children</td>
<td>58</td>
<td>58</td>
<td>57</td>
<td>-</td>
</tr>
<tr>
<td>W/o dependent children</td>
<td>58</td>
<td>56</td>
<td>53</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Kohler et al. (2012b); Wörz (2011c)
In the US benefit levels differ enormously from state to state. For example, in January 2011, maximum weekly benefits excluding dependents’ allowances, which are available in some states, were $625 in Massachusetts, but only $247 in Louisiana (Isaacs and Whittaker 2011: 7–8, Table 1). Partly due to this state-level heterogeneity, different sources reach different conclusions both with respect to benefits levels at a given point in time and with respect to changes over recent decades. For example, van Vliet and Caminada (2012) estimate that the replacement rate for a single, 40-year-old worker with average production worker earnings declined from 69% to 57% between 1980 and 2008. The corresponding estimates for the same type of worker with a non-working spouse and two children are 61% and 52%.11 These figures are substantially higher and show a clearer downward trend than official US replacement rates published in the Green Book (USDOl 2008b), which declined from 38% to 35% between 1980 and 2008. However, these strikingly lower replacement rates likely understate actual replacement rates for workers entering unemployment: They are based on a (cross-sectional) comparison of the average benefits received by benefit claimants with the average wages of covered workers, thus ignoring the fact that (former) low-wage workers are overrepresented among the unemployed (Grell 2011b).

Eligibility criteria. Earnings-related insurance-type unemployment benefits are generally restricted to workers meeting certain eligibility criteria. A first set of work history or ‘entitlement’ (Venn 2012) criteria relates to a (newly unemployed) worker’s recent employment history. As in most other countries with similar programs, German and American workers are required to have been covered by unemployment insurance for a certain amount of time during a certain reference period before the beginning of unemployment. Among other things, coverage requires that workers and/or their employer made contributions to unemployment insurance. In both countries, coverage is mandatory for the vast majority of wage and salary workers, while the self-employed as well as certain other groups of workers (e.g., German civil servants) are not covered by unemployment insurance.12 In both countries, earnings during reference periods also have to exceed certain thresholds. For example, workers in ‘Mini-Jobs’ earning less than

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11 For comparison, the corresponding estimates for a single worker in Germany are 68% (1980) and 60% (2009) and thus identical to the ‘legislated’ replacement rates in Table 3.2. Their estimates for the couple case are 70% and 71% which is slightly above legislated rates, presumably because van Vliet and Caminada (2012) also factor in child benefits (Kindergeld).

12 Under certain circumstances, self-employed workers can opt for coverage. In particular, they need to have been covered as wage and salary workers before becoming self-employed.
€400 per month are not covered by unemployment insurance in Germany: They are not subject to contributions and workers do not earn entitlements to earnings-related unemployment benefits. Again, a summary of American work history criteria is difficult due to considerable heterogeneity across the 50 states.

A second set of eligibility criteria can be characterized as ‘behavioral’. Violations of these criteria are usually punished with benefit reductions or even a (temporary) complete loss of benefits. Some behavioral requirements refer to the time before the actual onset of unemployment: For example, German workers with a fixed-term contract are expected to notify the employment office up to three months before the actual termination of their job. In both countries, a common reason for benefit sanctions is that a job separation was initiated by the employee ‘without good cause’. A second important set of behavioral criteria relates to search behavior and readiness-to-work during unemployment. Behavioral criteria are not restricted to recipients of earnings-related benefits, but are also applied to recipients of second-tier or means-tested benefits. In fact, behavioral criteria are usually stricter for these latter groups who tend to have been unemployed for longer periods of time. For example, German ALGII recipients are subject to much broader definitions of suitable job offers than recipients of earnings-related first-tier benefits (Clasen 2011).

Eligibility criteria are often defined using rather complex and idiosyncratic institutional categories, so it is difficult to compare their overall strictness across countries. That said, conventional wisdom suggests that eligibility criteria and especially behavioral requirements are stricter in the US. Recent attempts to quantify the overall strictness of eligibility criteria in OECD countries at least partly confirm this intuition (Hasselpflug 2005; Venn 2012). Disaggregated results suggest that strictness of work history criteria is similar in the US and Germany. In terms of behavioral criteria, both Hasselpflug (2005) and Venn (2012) classify German regulation as noticeably more stringent with respect to job search and availability criteria, yet this counterintuitive difference is more than made up for by much harsher sanctions for noncompliance in the United States (Venn 2012: 21, Figure 6). For example, American workers considered to have quit their former job or refused a suitable job offer ‘without good cause’ will typically be denied benefits completely, while German regulation generally only allows for limited disqualification periods (Venn 2012).

Tracking changes in eligibility criteria over time is somewhat easier because these changes tend to occur within one consistent categorical framework. As for work history requirements, changes in Germany during
recent decades are probably best described as a limited and incremental trend towards tighter eligibility criteria. However, one of the most significant changes, which doubled the required number of months in covered employment during the so-called ‘reference period’ (Rahmenfrist) from six to twelve, already occurred in the early 1980s (Wörz 2011c). A description of American trends is again complicated by state-level variation. Overall, however, the literature reviewed by Grell (2011b) seems to suggest no clear trends.

Consistent with the increased focus on activation and workfare principles noted above, behavioral criteria were tightened in both countries during the last 20 to 30 years. This trend affected both claimants of first-tier benefits as well as recipients of second-tier or basic income support programs, with changes generally being more pronounced for the latter group. In Germany, definitions of suitable jobs were gradually liberalized and workfare elements such as the requirement to participate in training measures or community work were expanded. The most far-reaching changes were enacted by the ‘Hartz Reforms’ in 2003-2005 (Eichhorst et al. 2010; Alber and Heisig 2011; Clasen 2011), but initial changes in this direction occurred already in the 1980s and 1990s (Clasen et al. 2001). However, despite this increasing emphasis on activation, regulation that freed some older claimants of unemployment benefits from any job search requirements remained active until the end of 2007 (Eichhorst and Sproß 2005). More specifically, unemployed workers aged 58 and older were not required to be available for work if they committed to claiming a deduction-free old-age pension at the earliest possible date (so-called 58er-Regelung). For most workers, this was the ‘old-age pension after long-term unemployment and old-age part-time work’ which could long be claimed by workers who were at least 60 years old and had been unemployed for at least 52 weeks after age 58 and a half (for further details, see the discussion of early retirement options in Section 3.4.3 below). Introduced in 1986, this regulation played an important role in facilitating early retirement during the observation period (Jacobs et al. 1991; Knuth and Kalina 2002).

In the US, demands on claimants of means-tested benefits have risen considerably, in particular after the 1996/1997 welfare reform (Blank and Haskins 2001). Welfare reform increased pressures to take up work for recipients of TANF compared to former beneficiaries of the predecessor program AFDC (Blank 2009). For example, federal regulation requires that states limit the total lifetime duration of TANF receipt to 60 months13, but

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13 States can, however, exempt a limited proportion of the caseload from this lifetime maximum (Blank 2009). Thus ‘hardship cases’ are often eligible for benefit extensions beyond the 60 month limit.
as noted above this program plays a marginal role for older workers. AFDC and TANF have received far more attention in the literature, but behavioral requirements have also become stricter for claimants of other types of welfare benefits such as ‘General Assistance’ (Ifcher 2007). Unfortunately, there seems to be no systematic account of trends in behavioral eligibility requirements for unemployment insurance benefits. However, given the overall trend toward activation it does seem likely that this group, too, has been facing increasingly stringent demands.

3.4.3 Public and complementary pensions

I now provide an overview of public and complementary pensions in Germany and the US. For the vast majority of households, these programs are by far the most important sources of income after exit from work. In both the US and Germany, large public pay-as-you-go (PAYG) pension programs financed by payroll taxes form the backbone of the system of old-age income provision. I first discuss key general features of these programs and characterize the overall level of public retirement benefits in terms of the benefits received by a person retiring at the statutory or full retirement age. I then provide an overview of employer-provided and individual private pensions. Finally, I turn to the options for, and costs of, early pension take up, with the focus being on the public pension pillar.

It is important to note a crucial fact about pension policy: Many reforms take effect with considerable delay. Thus, the Social Security Amendments scheduling the gradual increase in full retirement age from 65 to 67 for Americans born 1938 and later were passed in 1983, yet it was only in the year 2000 that the first birth cohorts affected by these changes reached the minimum retirement age of 62. Similarly, while diffusion of defined-contribution plans among American employer-sponsored pensions accelerated from the 1980s onwards, participation in these plans has grown more rapidly for younger cohorts that are still of working age.14 Another example are recent German reforms that seek to promote second and third-pillar pensions, most importantly the so-called Riester-Reform15 of 2001 which introduced subsidies and tax advantages for accredited private pension

14 In 2001, according to Munnell and Sundén’s (2004: p.56, Table 3-1) estimates from the Survey of Consumer Finances, 44.2% of workers aged 40-49, but only 31.8% of workers aged 50-64 participated in a 401(k) pension plan, the dominant type of employer-sponsored DC pension plan.

15 The reform is named after Walter Riester, the German Minister of Labor and Social Affairs from 1998 to 2002, who was one of the main architects of the reform.
plans. As the primary aim of this chapter is to prepare and complement the empirical analysis of survey data in later chapters, I will largely concentrate on changes that affected recent retirement cohorts. Some of the changes that are currently most fervently debated (e.g., the increase of statutory retirement to 67 or the strengthening of private pensions in Germany) will play only a marginal role in my discussion, as they will primarily affect future retirement cohorts.

Public pension programs and overall benefit levels

For most of the observation period, the statutory retirement age was 65 in both countries. Americans born 1938 or later were affected by a gradual increase in the full retirement age, which is set to increase further, to 67 years, for Americans born after 1959. In Germany, the scheduled gradual increase of the standard retirement age from 65 to 67 does not affect Germans born before 1947 (with 67 being the full retirement age for birth cohorts 1964 and later).

Unlike unemployment compensation, ‘Social Security’ – as the American public pension scheme is often called – is a federal program with uniform rules determining coverage, eligibility, and benefit calculation. First introduced in 1935, Social Security has been repeatedly expanded to new groups of workers and today covers more than 90% of the workforce, including the majority of the self-employed. Germany’s public pension program dates back to the late 19th century. It is somewhat less encompassing than Social Security, mainly because the self-employed (with some exceptions, e.g., for self-employed teachers or artists) and public employees with ‘civil servant’ status (Beamte) are not covered by the program. 16 However, civil servants generally have lifetime employment contracts and receive retirement benefits that tend to be more generous than regular public benefits.

Benefit levels. In both countries, monthly retirement benefits are closely related to earnings histories. Under current regulations 17, German workers are awarded so-called ‘earnings points’ (Entgeltpunkte) on the basis of their earnings during a given calendar year. To calculate the number of earnings points, a worker’s earnings are divided by the average earnings of all

16 Self-employed workers not belonging to the groups that are automatically covered can make voluntary contributions, however.
covered workers. A worker who earned only 50% of the average in a given calendar year would thus receive 0.5 earnings points and a worker earning 150% of the average would receive 1.5. Monthly benefits are then calculated by multiplying all earnings points accumulated during the career with a constant, the so-called ‘current pension value’ (Aktueller Rentenwert)\(^{18}\) and two further factors that depend on age at pension take-up (Zugangs faktor, see discussion of actuarial reductions for early retirement below) and the type of pension (Rentenart faktor).\(^{19}\) The current pension value is adjusted annually according to a factor that depends on wage growth among the insured population and a few other variables. It is clear from this short summary of benefit calculation that pension benefits are roughly proportional to lifetime contributions, because the number of earnings points is more or less a linear function of covered earnings.

American Social Security benefits are calculated on the basis of a worker’s average indexed monthly earnings (AIME). A worker’s AIME value essentially is the average of past annual earnings divided by twelve and adjusted for average wage growth.\(^{20}\) Only the 35 years with the highest earnings are used in the calculation (years with zero earnings are included if a worker has fewer than 35 years with positive earnings). The worker’s AIME then serves as the basis for calculating the so-called primary insurance amount (PIA). For a worker claiming Social Security benefits at the full retirement age, monthly benefits are equal to the PIA. Importantly, the formula for calculating the PIA is quite progressive, that is, workers with low AIME have a substantially larger proportion of their AIME replaced by Social Security benefits: In 2013, the PIA was calculated by summing 90% of the first $791 of AIME, 32% of AIME over $791 and through $4,768, and 15% of AIME above $4,768, up to an upper limit given by maximum taxable earnings ($8,230 for a person retiring at age 65 in 2013).\(^{21}\) The threshold values or ‘bend points’ used in this formula are updated annually according to average wage growth.

Table 3.3 presents OECD (2007) estimates of net replacement rates – which are preferable to gross replacement rates because they account for

18 The 2012 values were €24.92 for East and €28.07 for West Germany (http://de.wikipedia.org/wiki/Aktueller_Rentenwert, accessed December 18, 2012).

19 The Rentenartfaktor (‘type of pension factor’) is 1 for old-age pensions and full disability benefits and smaller than 1 for partial disability benefits and survivors’ pensions.

20 However, earnings are indexed to the year when the retiring worker turned 60 and not to the year of retirement.

differences in benefit taxation – for a worker who enters the labor market at age 20 and works without interruption until standard retirement age. According to Table 3.3, the replacement rate for an American worker who earned 50% of average earnings throughout his career is 67.4%. Workers with higher earnings have lower replacement rates. Consistent with the progressivity of the benefit formula, a typical worker earning 150% of the average wage had a much lower estimated replacement rate of 47.9% and a worker earning twice the average wage had a replacement rate of only 43.2%.

Table 3.3  Net replacement rates for male workers at different earnings levels

<table>
<thead>
<tr>
<th>Earnings, in % of average</th>
<th>Germany</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>Approximate replacement rate for recent retirement cohorts (pre-reform scenario)</td>
<td>66.3</td>
<td>73.4</td>
</tr>
<tr>
<td>Impact of recent reforms on future replacement rates (1984 birth cohort)</td>
<td>53.4</td>
<td>56.6</td>
</tr>
</tbody>
</table>

Pre-/post-reform comparison missing for US because no major changes took place (OECD 2007: 64ff.). Source: OECD (2007)

For German workers, Table 3.3 presents two sets of estimates. Estimates in the upper row are based on the so-called pre-reform scenario that does not account for legislative changes during the 1990s and 2000s. These figures should provide reasonable approximations to the replacement rates received by recent retirement cohorts. According to these estimates, the net replacement rate for a German worker with 45 years at 50, 150, and 200% of average earnings were 66.3, 86.9, and 65.2%, respectively. Except at the lower end of the earnings distribution, public pension replacement rates were thus considerably higher in Germany.

I will discuss changes in pension generosity among recent retirement cohorts shortly. Before doing so, let me briefly highlight the dramatic impact

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22 Higher benefit levels are one major reason why the payroll tax levied to finance public pensions is considerably higher in Germany than in the US. In 2012, the German payroll tax was equal to 19.6% of covered gross earnings. The American tax was only 10.4%, a temporary reduction (in response to the World Financial Crisis) from 12.4%. In both countries, contributions are paid half by employers and half by employees.
of recent reforms on future retirement cohorts. The second set of figures for Germany show the OECD’s (2007) projected replacement rates for the 1984 birth cohort. For the US, no such projections are available, simply because no comparably far-reaching reforms have been passed (yet). The projections for Germany are striking, however. Depending on the earnings level, they imply declines from about 13 to over 20 percentage points compared to the replacement rates enjoyed by recent retirement cohorts. It is understandable that these changes have stirred considerable debate about the economic well-being of future retirement cohorts.

Even though the most dramatic changes are thus yet to come, there were also a number of small and incremental changes affecting overall (net) benefit levels for German workers who retired during the observation period of this study. For example, public pensions became subject to health insurance contributions in 1983 and the contribution rate was gradually increased to the full ‘employee contribution rate’ (Arbeitnehmeranteil) until 1987 (Borgmann and Heidler 2007). Net pension levels were thus also affected by subsequent increases in health insurance contributions. There were also repeated and rather technical changes in benefit indexation (for further details, see Borgmann and Heidler 2007; Bäcker et al. 2009; Wörz 2011b).

Borgmann and Heidler (2007) quantify the impact of changes in German pension legislation between 1970 and 2004 by calculating their impact on Social Security Wealth (see Section 3.2 above), a measure that is common in the economics literature and closely related to monthly benefit levels. Unfortunately, their results are only presented in graphical form so it is not possible to reproduce their exact estimates here. For their prototypical pensioner, a single childless man retiring at the full retirement age of 65, Borgmann and Heidler (2007) calculate modest declines in SSW from the

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23 Like contributions to the public pension schemes, contributions to statutory health insurance for wage and salary workers are paid partly by employees and partly by employers. For recipients of public old-age pensions, the public pension scheme pays the employer’s part of the contribution.

24 Between 1990 and 2010, the (average) employee contribution rate increased from 6.3% to 7.9% (see http://www.sozialpolitik-aktuell.de/tl_files/sozialpolitik-aktuell/_Politikfelder/Finanzierung/Datensammlung/PDF-Dateien/tabI16.pdf for full contribution rates, i.e., combined contributions of employee and employer; accessed March 17, 2014).

25 Social Security Wealth, introduced by Feldstein (1974), is equal to the discounted value of expected lifetime benefits, which means that, in addition to the level of monthly benefits, it also depends on remaining life expectancy at the time of pension take-up. SSW also depends on the chosen discount factor, but this is of minor importance if the goal is to compare levels of SSW across cohorts or point of time (rather than, for example, to other types of wealth).
mid-1980s to the mid-1990s and somewhat stronger declines over the following ten years. Consistent with legislative changes discussed below, they calculate much larger reductions in SSW for two other types of workers: an early retiree and an early retiree with seven years of education after age 16. The results of this simulation study – limited, but noticeable across-the-board decreases in benefit levels and stronger cuts for early retirees and for those with many years of education – are consistent with the results of more qualitative analyses (cf. Wörz 2011b).

Table 3.4 Changes in US social security net replacement rates (rr) by level of earnings

<table>
<thead>
<tr>
<th>Level of earnings</th>
<th>Replacement rate in %</th>
<th>Change in rr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low earnings</td>
<td>66.0</td>
<td>58.4</td>
</tr>
<tr>
<td>Average earnings</td>
<td>48.9</td>
<td>43.5</td>
</tr>
<tr>
<td>High earnings</td>
<td>47.9</td>
<td>39.8</td>
</tr>
<tr>
<td>Maximum earnings</td>
<td>40.6</td>
<td>35.7</td>
</tr>
</tbody>
</table>

Replacement rates for hypothetical workers retiring at the full retirement age (65 for years 1980, 1990, 2000; 65 years and ten months for 2007)

Source: Ushor (2008a: Table 1-49)

Like their German counterparts, American cohorts retiring during the observation period of this study experienced a gradual decline of Social Security benefit levels. Table 3.4 reproduces net replacement rates for retirement at age 65, as calculated by official US sources (USDOL 2008a) and compiled by Grell (2011a: 12, Table 1). The decreases in replacement rates between 1980 and 2007 are noticeable, ranging from 6.9 percentage points for a worker with average earnings to 12.9 percentage points for a worker with high earnings. This is equivalent to declines of, respectively, 14.1 and 29.1% of baseline replacement rates in 1980. Reductions were larger for higher-earning retirees, whose replacement rates had already been lower in the 1980s. Neither Grell (2011a) nor USDOL (2008a) provide explanations for these trends in replacement rates. As there were no changes in the benefit formula (other than through wage indexation), changes in benefit taxation are a likely reason for the decline in replacement rates, especially for workers with high earnings (Social Security benefits first became taxable in 1984 and taxation of high-income beneficiaries was increased further in 1993; cf. Burman and Saleem 2004; Scott 2013). Trends might differ by earnings level because of the growth of earnings inequality over recent decades (Katz and Autor 1999): Since indexation of past earnings (for the purpose
of calculating AIME) is based on average earnings growth, low-earning workers would see their early-career earnings indexed at rates that exceed the rates of growth that they actually experienced over the course of their careers (in other words, indexed early career-earnings will be high relative to earnings just before retirement). Furthermore, because low-earning workers’ AIME have grown at below-average rates, a larger portion of their AIME will fall into the lower brackets where the replacement rate is higher (again, because the bend points of the benefit formula are tied to average wage growth; cf. Autor and Duggan 2003, who argue along these lines in the context of disability benefits).

Supplementary benefits. A major difference between American and German public pensions concerns the availability of supplemental benefits for spouses and dependent (i.e., minor or disabled) children of living beneficiaries.26 Whereas Germany provides no auxiliary benefits for dependents, spouses of Social Security recipients, who are disabled or aged 62 or older and who do not claim Social Security benefits on their own, are entitled to a supplement of 50% of the primary recipient’s benefits (Isaacs 2010). Supplements are also available for children below age 18 (19 if still in high school) and for older disabled children. However, total benefits are capped at 150 to 180% of the insured person’s benefits. Even divorced spouses are eligible for spousal benefits if they have not remarried, if the marriage lasted at least ten years, and if they meet the usual age/disability requirements. Availability of spousal benefits implies that Social Security replacement rates for single (male) breadwinner families are substantially higher than those shown in Table 3.3. Ignoring the impact of benefit taxation, these rates would have to be multiplied by a factor of about 1.5, lifting them near or even above German (pre-reform) replacement rates, especially for families with low preretirement earnings. Availability of spousal benefits thus subsidizes single breadwinner families—and it is therefore somewhat surprising to find them in the US, but not in Germany, the country usually considered to have a stronger male breadwinner orientation (Lewis 1992).

Pension credits for non-work periods. Differences between the US and Germany also exist with regard to the crediting of certain non-work periods. In contrast to the US, where there are essentially no pension credits for non-work periods, the German system long awarded generous pension

26 In both countries, there are survivor pensions for orphans and widow(er)s of deceased workers and beneficiaries.
Complementary pensions

Given Social Security’s modest replacement rates for workers with higher incomes, complementary pensions – that is, employer-provided (second-pillar) and individual private (third-pillar) pensions – have long played a greater role for older Americans than for older Germans: According to OECD estimates for the mid-2000s (OECD 2009: 60, Figure 2.3), the average German household headed by a person aged 65 or older received roughly 73% of their disposable income from public pensions and transfers and 15% from private pension and other capital income. The corresponding figures for the US are 36% and 30%, respectively. The remaining portion of disposable income, a mere 12% in Germany and a more significant 34% in the US, came from employment income, which was of course contributed by younger household members to some extent, but also reflects the greater propensity of Americans to work after statutory retirement age (see Figure 3.2 above).

I now give an overview of complementary pensions in the US and Germany. I begin with a discussion of the (changing) American situation, which

27. Up to a maximum of eight years in education are still credited towards ‘qualification periods’. While they no longer affect benefit levels directly, they may thus still be relevant with regard to eligibility for early retirement options that require a certain length of the contribution period (see discussion of early retirement options below).

28. The one-year credit was introduced in 1986 and, in contrast to the 1992 expansion, was applied retrospectively, that is, it was also granted to mothers whose children were born before 1986 (Fasang 2008).
also serves to introduce some general differences among different types of complementary pension plans. In a second step, I then review the role of complementary pensions in Germany.

Complementary pensions in the United States. Occupational and private pension plans come in various flavors and their heterogeneity is particularly large in the United States. Second-pillar employer-provided pension plans account for approximately two thirds of retirement savings. Another quarter is allocated to ‘Individual Retirement Accounts’ (IRAs), the most important form of third-pillar individual private pension plans (Grell 2011a: 20). To encourage saving, contributions to IRAs and employer-sponsored plans below certain contribution ceilings are usually exempt from taxation or subject to reduced tax rates. To receive such preferential treatment, both employer-provided plans and IRAs have to meet certain requirements. Benefits from employer-provided plans and withdrawals (or ‘distributions’) from IRAs are subject to income taxation. Early withdrawal (before age 59 and a half) of savings from IRAs or other types of retirement savings accounts is possible but subject to an additional tax penalty of 10%.29

A crucial distinction in regard to complementary pension plans is between defined-benefit (DB) and defined-contribution (DC) plans. These two broad classes of retirement plans are internally diverse and I cannot provide more than a stylized overview. DB plans resemble public PAYG schemes in that retirement benefits are some (complicated) function of a worker’s contribution or earnings history. DC plans, by contrast, are similar to private savings accounts: The worker’s contributions (and potential employer supplements) are invested in one way or another, with the worker usually having substantial discretion over portfolio decisions. From the worker’s perspective, an oft-cited advantage of DC plans is their portability: Savings in DC accounts are readily transferred into accounts with new employers, whereas many DB plans punish changes of employer, for example, by tying benefits to length of service or final salary.

In the United States, DC plans have replaced DB plans as the dominant type of employer-sponsored pension over the last decades. Wolff (2003: 486, Table 4) estimates that the proportion of households aged 47–64 with positive DC pension wealth rose from 11.9% to 59.7% between 1983 and 1998. Over the same period, the share of households with positive DB pension wealth (i.e., with DB pension entitlements from previous and/or current jobs) declined from 87.0% to 52.7%.

29 This penalty can be waived in cases of financial hardship such as high medical expenses.
Importantly, **DB** and **DC** plans have different consequences for risk sharing between worker and employer. Under a **DB** plan, employers carry the lion’s share of investment risk: for a given earnings or contribution record, the plan guarantees participants a certain level of benefits, and employers are the ones who have to ensure that they can meet their payment obligations.\(^3\) Under a **DC** plan, workers are the primary carriers of risk: If their investment choices turn out poor, they may end up with limited resources for retirement. This potential problem can be exacerbated by the fact that the ‘administrative fees’ charged by providers of **DC** plans (or the providers of the mutual funds that **DC** wealth is often invested in) tend to be considerably higher than (implicit) fees for **DB** plans or public pension schemes (Blackburn 2008).

It is because of this difference in the primary carrier of risks that Jacob Hacker (2006) considers the growing importance of **DC** plans as a core element of *The Great Risk Shift*. Of course, **DC** plans may also prove advantageous, at least for some workers. If workers make good choices and stock market trends are favorable **DC** plans can yield much higher returns on savings than would be enjoyed under a **DB** alternative. I will further explore these issues in Chapter 5. One thing that is worth noting at this point is that the overall economic climate and stock market trends in particular were rather favorable during the 1990s (Wolff 2011). The latest American retirement cohort included in my data are workers who left employment in 2002, long before the Financial Crisis of the late 2000s, which has caused much concern about retirement income security (see, for example, VanDerhei 2009; Maurer et al. 2011, Wolff 2011). In this study, the consequences of the shift toward **DC** pensions will thus be examined under ‘best-case’ conditions.

Another difference between **DB** and **DC** plans is that they tend to differ in terms of (default) payment options. As noted in Chapter 2, many commentators argue that a considerable fraction of American retirees is ‘underannuitized’ in the sense of consuming too little of their retirement savings in the form of annuities that guarantee monthly payments until the death of the primary recipient (or of the primary recipient’s survivors) (Brown et al. 2001; Diamond 2004; Diamond and Orszag 2005; Brown et al. 2008). Annuitization is crucial because it provides protection against the risk of outliving one’s assets. Under **DB** plans, the default payment option

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30 **DB** plans are not completely risk-free for workers because plans may be only partially insured against bankruptcy of the provider. In the US, employer-sponsored **DB** plans are insured by the *Pension Benefit Guaranty Corporation*. 
usually does involve some form of annuity payments\textsuperscript{31}, although so-called cash-balance plans that allow workers to choose a lump-sum payment instead of an annuity are increasingly common (Blostin 2003). This trend notwithstanding and even though many DC plans do offer alternative options\textsuperscript{32}, lump-sum payments are more common with DC plans. Even if a DC plan does not offer an annuity option, beneficiaries may of course use their lump-sum distribution to purchase an annuity on the general market, but many observers suggest that this is (too) rarely done and that annuity markets are not functioning well, perhaps due to adverse selection problems (Diamond 2004; Munnell and Sunden 2004). This suggests that the growing prevalence of DC plans may increase the number of retirees whose long-term financial well-being is precarious.

The difference in default payment options also suggests that the growing prevalence of DC plans has raised the importance of non-annuitized wealth – which is not captured by the income measures used in the empirical chapters of this study – for financing consumption in retirement. This issue must be kept in mind when interpreting changes over time in the US, but it should not be exaggerated. In a recent study based on the Health and Retirement Study (HRS), Poterba et al. (2011: 25) estimate that ‘[h]alf of all households headed by someone between the ages of 65 and 69 in 2008 had total financial assets, including assets in IRAs and 401(k)s, of less than $52,000’ (401(k)s, named after the relevant section in the US tax code, are the most common form of employer-sponsored DC account). Even though 401(k) balances may be somewhat underreported in the HRS (Venti 2011), this estimate suggests that the majority of US households headed by a just-retired or soon-to-retire person did not hold massive amounts of non-annuitized (non-housing) wealth even in the mid-2000s.

Coverage by, and actual participation in, employer-sponsored pension plans are highly stratified. In general, coverage is higher for male, white, full-time, higher-educated and higher-earning workers as well as for workers in the public sector and in large private sector firms (Copeland 2011). These differences are of course interrelated. For example, in 2010, women were

\textsuperscript{31} Often several annuity options are available which differ, for example, with respect to the provision of survivor benefits. An important variant that facilitates early retirement is the level income option, which pays higher benefits until recipients become eligible for Social Security benefits (Blostin 2003).

\textsuperscript{32} According to the figures reported in Blostin (2003: Table 2 on p.4), about one third of DC plans in private industry feature an annuity option and roughly half a so-called ‘installment option’ that provides monthly payments for a specified number of years – but not necessarily until the beneficiary’s death.
more likely to participate than men when annual earnings were controlled (Copeland 2011: 15, Figure 5). Participation rates tend to rise during macro-economic expansions. In part because of this relationship, participation rates rose during the late 1990s and declined somewhat thereafter.

Extant research also documents two important secular trends in group-specific coverage rates. The first is a convergence of coverage rates by gender. According to estimates by Copeland (2011: 30, Figure 22) the participation rate of female wage and salary workers ages 21-64 increased from 40.7% in 1987 to 44.4% in 2010, while the participation rate of their male counterparts fell from 51.0% to 45.3%. The second trend can be described as a trend towards increased inequalities in pension coverage, particularly among male workers. Wolff (2011: Ch.4) shows that, among current workers below age 65, differentials in coverage rates by race, income, and education grew considerably between 1980 and 2007. More importantly, he also shows that differentials in household complementary pension wealth by educational attainment grew considerably over the same period in practically all age groups (cf. Wolff 2011: Ch. 6). This trend also holds for households with heads aged 56-64 and 65+, which are the most relevant age groups in the context of the present study. He also finds that the shift from DC to DB pensions was a crucial factor behind these trends, as DC pensions are much more unequally distributed, both in terms of coverage and pension wealth.

Complementary pensions in Germany. According to Börsch-Supan et al. (2001: 173-174), ‘[a]lthough company pensions exist in Germany, their role is subsidiary’ and ‘the average [company] pension is [...] low’. In comparison to the US, the same can be said about private savings and individual retirement plans. Given this widespread perception, it is surprising to find that recent data on complementary pension coverage suggest that the proportion of the working-age population who are covered by an occupational and/or individual private pension plan is similar in the US and Germany (Antolin and Whitehouse 2009; OECD 2011: 173), although there may of course still be substantial differences with respect to expected benefits from these plans. As noted above, OECD (2009: 60-61) data for the mid-2000s do confirm the conventional wisdom that American retirees draw a considerably larger portion of their income from ‘capital’, which includes complementary pension (as well as asset) income. In addition, German reform measures in the early 2000s, most importantly the Riester-Reform of 2001, sought to expand complementary pension coverage and recent figures partly reflect
their impact. For the cohorts examined in this study, German-American differences in coverage rates have therefore likely been greater.

As in the US, complementary pension coverage in Germany is stratified by earnings (OECD 2012: Ch.4) and other (related) characteristics such as gender or occupation (TNST 2008). For example, according to recent OECD (2012: 111-113) estimates, the average coverage rate (in % of the total labor force) was 39% for the lower half and 66% for the upper half of the income distribution. The corresponding figures for the US are 37% and 81%, respectively, suggesting that inequalities in complementary pension coverage may be somewhat smaller in Germany. However, this may again reflect the impact of recent reforms, as participation in Riester-type plans (which are eligible for quite progressive public subsidies) is distributed more equally across the income distribution than participation in other complementary pension plans (OECD 2012: 119-121).

It is also important to note that, in comparison to the US, second- and third-pillar pensions in Germany are predominantly low-risk. Pure defined-contribution company pension plans where workers carry the full investment risk are not recognized as occupational pensions under German law and are therefore not eligible for exemptions from taxes and social security contributions: Employers or their contractors are required to guarantee a minimum pension to their employees (Beckstette and Zwiesler 2004; OECD 2012: Ch.5). Similarly, third-pillar pension plans also need to guarantee a minimum pension to be eligible for Riester-type subsidization. Typically, German complementary pension plans will thus be either pure DB plans or hybrid plans with a strong risk-hedging DB component.

Presumably due to their limited importance for retirement income, empirical research on complementary pensions in Germany is relatively scant, making it difficult to draw definitive conclusions about changes over time. To assess changes in the relative importance of different income sources for recent retirees, I therefore used data from the American Panel Study of Income Dynamics (PSID) and the German Socio-Economic Panel (SOEP) to estimate trends in the relative importance of public pension income, private (i.e., complementary) pension income, and asset income for people aged 66 to 70. More specifically, I computed the average proportion of total pre-tax post-transfer income (household pre-tax income from all public and private sources) coming from each of these income sources (pre-tax post-transfer

33 The original OECD publication presents decile-specific coverage rates. I obtained estimates for the lower (upper) half by averaging coverage rates across the bottom (top) five deciles. Data are available from http://dx.doi.org/10.1787/888932598550 (accessed December 13, 2012).
income additionally includes labor earnings, private transfers, and public non-pension transfers, see Chapter 4).

Figure 3.3 confirms that public retirement income is much more important for Germans than for Americans and vice versa for private income sources. During the observation period, Germans aged 66-70 derived between 70 and 80% of their income from the public pension system, while this proportion was between 40 and 50% for Americans in this age group. As for trends over time, American results show a modest decline in the importance of public pensions as well as a more substantial decline in the importance of asset income. At the same time, the proportion of income coming from private pensions has risen considerably, suggesting a crowding-out relationship between private pension and asset income: As DC plans and IRAs have become more widespread, workers may have shifted general savings (i.e., savings not earmarked as retirement savings) into these explicit retirement savings devices.34

As for German trends over time, results suggest at most a very slight increase in the importance of private retirement income towards the end of the observation period. Between the late 1990s and late 2000s, the average share of income coming from private pensions rose from approximately 4 to approximately 6%. Compared to the 1990s, the relative importance of private retirement income had already been somewhat greater in the 1980s, so the share has actually followed a rather flat U-shape over the course of the observation period. The dip is clearly attributable to East Germans joining the population in the early 1990s: For obvious reasons, this group had accumulated very limited occupational pension entitlements. In this context, it is somewhat surprising that I cannot find a similar pattern for the asset income share, which shows no clear trend over time (and in fact takes its highest values in the early 1990s, that is, immediately after reunification). Overall, the pattern of changes in Germany is thus rather complex, but it is clear that the relative importance of private sources for retirement income has risen very modestly at most and remained far below American levels throughout the observation period.

Early retirement options. I conclude my overview of public and complementary pensions with a discussion of early retirement options. I will concentrate on early retirement options in the public pension programs. Given the great

34 However, Wolff (2011: 57) concludes that ‘previous studies that consider whether accumulations in DC pension plans add to net household wealth or merely substitute for other forms of household savings have been inconclusive’. 
diversity of complementary pension plans, a review of early retirement arrangements in second- and third pillar pension plans is not feasible. As a general rule, however, it can be stated that employer-based DB plans often feature rather generous early retirement provisions once individuals have reached plan-specific early retirement ages (Stock and Wise 1990). Monthly benefits tend to be only mildly reduced as a consequence of early benefit take-up and the reduction is generally less than would be required by actuarial neutrality. As noted above, actuarial neutrality holds when the present value of expected retirement benefits is independent of retirement age, that is, when the (monthly) benefit reduction for early retirement is just large enough to offset the fact that benefits will be collected for a longer period of time (see Clemens [2004] for a thorough discussion). Because they are essentially savings accounts, DC plans are actuarially neutral by construction: Retiring earlier means that accumulated savings will have to sustain the retiree for a longer period of time. Similarly, an early-retiring worker seeking to annuitize her DC savings will have fewer resources available than a later-retiring worker.

Figure 3.3  Trends in the relative importance of different income components, ages 66-70

Graphs depict the average proportion of household pre-tax post-transfer (hh PTPT) income from the income source given in the title. Additional income components (not shown): labor earnings, private transfers, public (non-pension) transfers. See Chapter 4 for details.
Sources: Cnep, psid, Soep, own calculations
and will pay a higher price for a given level of (monthly) annuity income because of her longer remaining life expectancy. Early retirement thus tends to be more costly for DC than for DB participants and the growing prevalence of DC plans presumably is an important driver of recent increases of the recent trend towards later retirement in the US (Munnell et al. 2003). By the same token, DC (rather than DB) coverage can also be expected to raise the costs of (involuntary) early retirement after late-career job loss or declines in health, thereby creating incentives for returning to (or remaining in) employment after the occurrence of these events.

Turning to public retirement benefits, early take-up before the full retirement age can result in lower benefits for two main reasons (Clemens 2004; Hoffmann 2007; Himmelreicher and Stuchlik 2008). The first is that early retirees forego future earnings and pension contributions that would have resulted in higher benefits. This factor tends to weigh more heavily in Germany where each additional earnings point raises pension claims by the same amount, that is, regardless of the number of earnings points a worker has already accumulated. A worker with average earnings who retires at age 60 rather than 65 will thus forego five additional earnings points, the equivalent of approximately €140 in monthly benefits in West Germany in 2012. In the US, losses due to foregone earnings are limited by the fact that AIME are calculated on the basis of the 35 years with the highest earnings (see above). Actuarial reductions are the second major reason why early benefit take-up usually entails lower benefits. Actuarial reductions ensure that an early-retiring worker will receive lower benefits than a late-retiring worker with the same contribution history (or, more precisely, the same number of earnings points or AIME). Actuarial reductions thus (partly) compensate for the fact that early-retiring workers will on average collect their benefits for a longer period of time.

At what ages can (non-disabled) American and German workers start to collect public retirement benefits and what actuarial reductions do they incur? American regulations are simple to summarize and remained largely unchanged during the observation period: Early pension take-up is possible from 62 onwards, but it involves (relatively high) benefit reductions of 5/9% per month of early retirement. Assuming a statutory retirement age

35 To see this, consider a worker who ponders whether to claim pensions or work for another year: Because AIME are calculated on the basis of the 35 highest-earning years, earnings during the next year must be higher than for at least one of what currently are her 35 highest-earning years to affect her AIME. Even if this is the case, the net gain in Social Security benefits would be small unless earnings during the additional year are much higher than earnings during the lowest-earning of what previously were the 35 highest-earning years.
of 65 years, this adds up to a total reduction of 20\% for a person retiring at age 62. Non-disabled retirees under 65 are also ineligible for Medicare, the public health care program for the elderly, until reaching full retirement age. Despite these substantial disincentives, the proportion of American workers claiming Social Security benefits at age 62 has remained above 50\% since the mid-1980s (USDOL 2008a: 61, Table 1-27). The latest birth cohorts examined in this study were affected by the gradual increase of the full retirement age to 67. More specifically, the statutory retirement is set at 66 for birth cohorts 1943-1954 and was gradually increased in steps of two months per (birth) year for those born between 1938 and 1942. Retirement at age 62 remains possible for these cohorts, but triggers additional benefit reductions. For those retiring more than three years before their full retirement age, a smaller reduction factor of 5/12 (as opposed to 5/9) \% is applied for every month beyond the first 36 months. For example, pension take-up at age 62 entailed benefit reductions of 24.17\% for workers born in 1942 and of 25\% for birth cohorts 1943-1954.

German early retirement options are more difficult to summarize, as they have long been based on an intricate system of group-specific pensions. Throughout the observation period, workers who did not meet the eligibility requirements of any of these group-specific pensions could not claim public old-age pensions before the full retirement age. The vast majority of workers, however, were eligible for at least one of several early retirement options. Before the changes introduced by the 1992 pension reform36 (see below), these workers could generally claim benefits before the full retirement age without incurring benefit adjustments.

Four early retirement options were by far the most important37: The old-age pension (OAP) for women allowed women with 15 or more years of contributions, at least ten of which were acquired after age 40, to claim old-age pensions at age 60. The OAP for the long-term insured offered retirement at age 63 to workers with a contribution record of at least 35 years. Given the relatively favorable labor market conditions of the post-war decades and generous pension credits for times spent in military service and education, this requirement was met by most men38 from the cohorts studied here.

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36 The reform bill was actually passed in 1989, but is named after the year when its first regulations became effective.
37 There are a few more group-specific pensions of limited numerical importance which I do not cover here (e.g., the old-age pension for miners).
38 I deliberately refer to men here because this option has always played a marginal role for women. The simple reason is that women meeting the eligibility requirements for the OAP for the long-term insured were usually eligible for the OAP for women (Bäcker et al. 2009: 63).
The OAP for the severely disabled entitled people who were recognized as severely disabled to a regular old-age pension at age 60. Finally, the OAP after long-term unemployment and old-age part-time work (hereafter: OAP after long-term unemployment) provided early retirement benefits at age 60 if a worker was currently unemployed and had been unemployed for a total of at least 52 weeks after age 58 and a half (or had been in old-age part-time work for at least 24 months). In combination with the provision lifting job search requirements on older unemployed people who committed to claiming a deduction-free OAP at the earliest possible date (*58er-Regelung*, see Section 3.4.2 above), this early retirement option was crucial in making the ‘unemployment pathway’ one of the major routes for (very) early exit from the labor force in Germany (Jacobs et al. 1991; Knuth and Kalina 2002; Ebbinghaus 2006).

The 1992 pension reform introduced major changes to these early retirement options. In the original bill, increases in the retirement ages for group-specific pensions were scheduled to start in 2001, but due to financial considerations and growing concerns about the prevalence of early retirement the reform was later preponed (Bäcker et al. 2009: 60; see Table 3 for details). For all four group-specific pensions, ages for reduction-free pension take-up were gradually raised, usually in steps of one month per month of birth.39 Early retirement at the former age thresholds remained possible, but became subject to benefit reductions of 0.3% per month (which is still considerably lower than the American adjustment factor of 5/9% per month). Table 3.5 summarizes and provides further details on these changes. Straightforward calculation reveals that the first cohorts affected became eligible for early benefit take-up in the late 1990s and early 2000s. For completeness, Table 3.5 also shows that, ignoring certain protective clauses (*Vertrauensschutz*), old-age pensions for the long-term unemployed and for women have been abolished completely for birth cohorts 1952 and later, while the other two types of pensions have been continued in modified form. However, this is not relevant for the birth cohorts retiring during the observation period of this study.

Taken together, these changes have raised the costs of early retirement considerably (Borgmann and Heidler 2007; Himmelreicher and Stuchlik 2008; Bäcker et al. 2009), even though American provisions still seem to

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39 For example, the reduction-free retirement age for the OAP after long-term unemployment was gradually increased for birth cohorts 1937 and later, with the retirement being raised to 60 years and 1 month for workers born in January 1937, to 60 years and two months for workers born in February 1937, and so on.
<table>
<thead>
<tr>
<th>Type of old-age pension (OAP)</th>
<th>Main eligibility requirements</th>
<th>Birth cohorts</th>
<th>Age for deduction-free take-up</th>
<th>Minimum age for take-up</th>
<th>Benefit reduction for take-up at min. age</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OAP after long-term unemployment (and old-age part-time work)</strong></td>
<td>Currently unemployed &amp; total unemployment after age 58 ½ ≥ 52 weeks (or old-age part-time work for 24+ months)</td>
<td>Before 1937</td>
<td>60</td>
<td>60</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1937-1941</td>
<td>Gradual increase to 65</td>
<td>60</td>
<td>0.3%-18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1942-1951</td>
<td>65</td>
<td>60</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1952 and later</td>
<td>Abolished (subject to protective clauses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OAP for women</strong></td>
<td>Women with at least 15 years of contributions or equivalent periods (at least 10 of which at ages 40 and older)</td>
<td>Before 1940</td>
<td>60</td>
<td>60</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1940-1944</td>
<td>Gradual increase to 65</td>
<td>60</td>
<td>0.3%-18%</td>
</tr>
<tr>
<td></td>
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<td>1945-1951</td>
<td>60</td>
<td>60</td>
<td>18%</td>
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<td></td>
<td></td>
<td>1952 and later</td>
<td>Abolished (subject to protective clauses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OAP for the long-term insured</strong></td>
<td>35 years of contributions or equivalent periods</td>
<td>Before 1937</td>
<td>63</td>
<td>63</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1937-1938</td>
<td>Gradual increase to 65</td>
<td>63</td>
<td>0.3%-7.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1939-1947</td>
<td>65</td>
<td>63</td>
<td>7.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1948 and later</td>
<td>Further changes, see Bäcker et al. (2009)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OAP for severely disabled people</strong></td>
<td>Officially recognized as severely disabled (degree of disability ≥ 50%)</td>
<td>Before 1941</td>
<td>60</td>
<td>60</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1941-1943</td>
<td>Gradual increase to 63</td>
<td>60</td>
<td>0.3%-10.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1944-1951</td>
<td>63</td>
<td>60</td>
<td>10.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1952 and later</td>
<td>Further changes, see Bäcker et al. (2009)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

impose somewhat harsher penalties. Toward the very end of the observation period these changes in early retirement options proper became reinforced by reductions in the maximum duration of first-tier unemployment benefits and the abolition of the second earnings-related tier (see Section 3.4.2 above), which lowered the attractiveness of using unemployment benefits as a bridge transfer on the path to early retirement. However, as noted above, the possibility to claim unemployment benefits without being available for work was maintained until the end of 2007, although the declining generosity of unemployment benefits had arguably rendered this option less appealing by then. In any case, the process of scaling back early retirement options and their functional equivalents is still ongoing and in particular was not completed before the end of this study’s observation period, even though considerable changes had clearly occurred by then.

3.4.4 Disability benefits

I now turn to one last type of transfer program: earnings-related disability benefits. Disability benefits are most immediately relevant for workers who experience a decline in health. This is because eligibility for disability benefits generally requires that a worker suffers from physical and/or mental conditions that limit her earnings capacity. At the same time, there is convincing evidence that disability rolls are sensitive to changes in labor market conditions and that receipt of disability benefits may sometimes be a hidden form of long-term unemployment, especially in countries with few alternative options for long-term income support (Autor and Duggan 2003; Beatty et al. 2007; Koning and Van Vuuren 2007). In fact, regulations often explicitly require that award decisions take labor market conditions into account (Blöndal and Pearson 1995) – and Germany is a leading example where this is the case. Similarly, disability benefits may become more attractive when other options for early retirement are restricted (Ebbinghaus 2006: 213ff; Duggan et al. 2007). Older workers may thus use disability benefits as early retirement benefits or as a means of long-term income support after late-career job loss. Yet, while the stringency of screening criteria might of course vary considerably across space and time, it can be expected that demonstrable health problems are indispensable for, or at least greatly

40 Autor and Duggan (2003) argue convincingly that the relationship between local labor market conditions and disability rolls is driven by ‘conditional applicants’ who apply for disability benefits after (i.e., conditional on having experienced) job loss.
improve an applicant’s chances of gaining access to disability benefits (Bound and Waidmann 2000).

In both Germany and the US, the system of earnings-related disability benefits has a bipartite institutional structure: Disabilities that are related to injuries at work are covered by a different, employer-financed scheme (German *Unfallversicherung* and American *Workers’ Compensation*) than disabilities which are not—or at least not directly—work-related. Public coverage of this general (as opposed to work-related) disability risk is provided by special benefits within the two countries’ public pension programs. Here, I will mainly focus on the latter programs for workers whose conditions are not work-related. This can be justified by their considerably greater size: In the US, wage replacement benefits paid by workers’ compensation totaled $29.5 billion in 2008, whereas 2009 public disability benefit payments summed to $118.3 billion (SSA 2011a: pp. 1 and 6). In Germany, there were over 1.63 million recipients of public disability benefits in 2011 (DRV 2012: 3, Table 1.00 G), compared with approximately 750,000 recipients of work-related disability pensions (DGV 2011: 74; this figure includes pensions paid because of school-related injuries/disabilities which are administered by the same body). That said, benefits provided by the programs for work-related disabilities are broadly similar in Germany and the US and replace approximately two thirds of predisability earnings for fully disabled workers (Aarts et al. 1998). In both countries, partial benefits are available for workers with some remaining earnings capacity (which, as I discuss below, is not the case with public disability benefits in the US).

I now turn to the review of public disability benefits. I first discuss eligibility criteria and availability of partial pensions and then provide an overview of benefit levels. I conclude with a few remarks on complementary disability insurance.

*Eligibility criteria and availability of partial benefits.* In both Germany and the US, disability benefits are insurance-type benefits intended as (partial) earnings replacements. In addition to medical criteria, workers therefore have to fulfill certain work history requirements to be eligible.41 As discussed in Section 3.4.1, disabled workers who do not qualify for earnings-related

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41 Currently, American workers must have at least one quarter of coverage for each year since age 21. They must also have at least 20 quarters of coverage in the ten-year period before the disability began (this reference period is shorter for very young workers) (SSA 2011b). German workers must have at least five years of coverage and at least 36 months of coverage in the last five years (SSA 2012).
benefits (or whose earnings-related benefits are very low) may be eligible for long-term means-tested income support.

The distinguishing feature of disability benefits is that eligibility requires a worker to be considered as ‘disabled’. In most countries, including the US and Germany, disability is ultimately not defined in terms of medical conditions, but in terms of a ‘performance criterion’ (Haveman and Wolfe 2000: 998), that is, in terms of the capacity to earn a certain amount of money or to perform (certain types of) paid work. It is also generally required that reductions in earnings capacity can be expected to persist for a certain period of time (for a comparative review of short-term earnings replacements, often referred to as sickness benefits, see Blöndal and Pearson 1995). Of course, the application of general performance criteria to concrete cases can be very difficult and occasional misclassification will be inevitable. However, a detailed discussion of the medical screening process is beyond the scope of this study.

In the US, disability is defined in monetary terms: A person is considered disabled if she is ‘unable to engage in substantial gainful activity (SGA)’, where ‘substantiveness’ is defined by a monthly earnings threshold. The 2013 threshold was $1,040. Benefits are awarded on an all-or-nothing basis, that is, applicants are either considered to meet the SGA requirement or not. Partial benefits are not available.

Apart from annual adjustments of earnings thresholds for average wage growth, this definition of SGA has not been modified during the observation period and there were few other important changes. However, ‘there have been significant changes in the interpretation of SSA [Social Security Administration, J.P.H.] medical and vocational eligibility criteria’ (Burkhauser and Daly 2002: 216). Even when the nominal definition of SGA does not change, there is considerable scope for discretion in how strictly to interpret this standard. In particular, eligibility procedures became more restrictive in the late 1970s and early 1980s, resulting in a strong decline in the number of pensions awarded and in many beneficiaries losing their claim after reevaluation (Burkhauser 2012). However, in response to court rulings and widespread dissatisfaction with the new practice, ‘eligibility was relaxed

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42 In practice, certain medical conditions may of course be codified as sufficient for assuming disability.
43 http://www.ssa.gov/oact/cola/sga.html, accessed December 20, 2012. There is a higher threshold of $1,740 for blind applicants. These thresholds may appear relatively high. This is underscored by the following calculations by Dean (2005): In 2004, the SGA threshold of $810 was only slightly below the earnings of a person working full-time at the federal minimum wage ($824).
again in 1984, and the rolls have been increasing ever since’ (Burkhauser and Daly 2002: 216). Most of this increase in the number of recipients occurred in the 1990s and went hand in hand with declining employment rates among working-age adults with self-reported work limitations (Burkhauser and Daly 2002; Burkhauser and Schröder 2004).44

Under current German legislation, performance standards are defined in terms of hours of work rather than earnings (Köhler-Rama 2003: 26–27): Workers are entitled to a ‘pension because of partially limited earnings capacity’ (Rente wegen teilweiser Erwerbsminderung), if they are deemed capable of working between three and six hours per day. Workers whose earnings capacity is judged to be below three hours per day are entitled to a ‘pension because of fully limited earnings capacity’ (Rente wegen voller Erwerbsminderung). Workers capable of working six or more hours per day are not eligible for disability benefits. Partial pensions amount to 50% of full pensions (details of benefit calculation are discussed below) and are intended to be supplemented with earnings from part-time work. In this regard, an important feature of German award practice is the principle of ‘concrete assessment’ (konkrete Betrachtungsweise; cf. Schubert et al. 2006). This principle requires that partial (rather than full) pensions can be paid only if a worker can realistically be expected to find a part-time job. If part-time jobs are unavailable, even partially disabled workers are entitled to a full pension.45 The practice of concrete assessment is widely regarded as the main reason why partial benefits accounted for less than a fifth of men’s and less than a tenth of women’s newly awarded pensions after the 1970s (Viebrok 2003: Figure 1 on p.205).

Current legislation was introduced by a major reform of disability pensions that was passed in December 2000 and became effective on January 1, 2001 (hence the year used for labeling the reform differs across sources). Before the reform, there were two types of pensions as well, but the key distinction was between ‘occupational disability’ (Berufsunfähigkeit) and

44 Autor and Duggan (2003) argue that this can largely be attributed to two factors: the growing implicit value of Medicare coverage due to rising medical costs and growing earnings inequality which resulted in rising effective replacement rates for low-skilled workers (due to the interaction of below-average wage growth for this group with indexing of benefits to average wages, see Section 3.4.3 above). As summarized in Burkhauser and Daly (2002), other proposed explanations include growing severity of impairments (Kaye 2003) and unintended effects of antidiscrimination legislation (in particular, the Americans with Disabilities Act of 1992) which may have deterred employers from hiring workers with disabilities (Acemoglu and Angrist 2001).

45 In practice, the unavailability criterion is routinely considered met if the federal employment agency cannot offer a suitable part-time job within one year (Bäcker et al. 2011).
‘incapacity to work’ (*Erwerbsunfähigkeit*). Full incapacity to work pensions were granted if a worker’s remaining earnings capacity was less than one seventh of the average insured person’s income (€325 in 2002; see Viebrok 2003: 201). Like the current pension because of partially limited earnings capacity, occupational disability benefits were intended as partial pensions to be topped up with earnings from own employment. They were, however, set at two thirds (rather than half) of full disability benefits. Importantly, only ‘suitable’ jobs were to be considered in assessing a worker’s eligibility for occupational disability benefits, with suitability being defined on the basis of qualifications and the previous main job.46 For younger cohorts, this element of status protection was abolished by the 2001 reform, that is, all types of jobs are now to be considered in assessing eligibility for disability benefits. For workers born before 1961, protective clauses ensure that they can still claim partial benefits on the basis of occupational disability (i.e., taking suitability of jobs into account). However, the rule that partial pensions are now equal to half rather than two thirds of full pensions does apply to these older cohorts as well.

Occupational disability benefits were granted if a worker’s ‘ability to work had decreased to less than *half* of that of a physically, intellectually and mentally healthy person with similar training and equivalent knowledge and abilities’ (Viebrok 2003: 203, emphasis in original). Assuming a 5-day work week with a total of 40 work hours, this definition implies a threshold of 4 hours per day, which is stricter than the 6-hour threshold introduced by the 2001 reform (see Köhler-Rama 2003: 36, note 85). Crucially, however, the principle of concrete assessment was also applied in the context of occupational disability benefits. In particular, workers whose ability to work was greater than half that of a comparable worker could become eligible for occupational disability and in fact even for full disability benefits if suitable, that is, qualification-adequate, part-time jobs were not available (Köhler-Rama 2003: 27ff.; Schnapp and Schmitt 1992: 102). This included workers with relatively minor health problems as the law did not specify a minimum level of impairment for this principle to apply. In this respect, the new regulations are considerably more restrictive: The principle of concrete assessment is only applied if a worker’s remaining earnings capacity is below six hours per day. Workers who do not meet the six-hours requirement do not have access to disability pensions and are therefore treated like unimpaired workers even if they cannot find an appropriate part-time job (Köhler-Rama 2003; Bäcker et al. 2011).

46 See Viebrok (2006: 256) for further information on suitability standards.
**Benefit levels.** In both Germany and the US, disability benefits are calculated on the basis of the formulas for old-age pensions described in Section 3.4.3. However, certain adjustments are made for the fact that disabled workers have shorter earnings histories than workers applying for old-age pensions. In the US, this means that AIME are not calculated on the basis of the 35 highest-earning years, but on the basis of all years after the year when the worker turned 21. As in the calculation of old-age pensions, a certain number of years (those with the lowest earnings) are excluded from the calculation of AIME. The number of these so-called ‘dropout years’ rises with age.47

Benefit calculation in Germany is slightly more complicated, because pension benefits are calculated on the basis of total (rather than average) covered earnings. For purposes of benefit calculation, workers are therefore treated as if they had continued to work (and accumulate ‘earnings points’) until a certain age. The number of earnings points awarded per month of this ‘virtual’ (Viebrok 2003: 217) period of insurance (Zurechnungszeit) is closely related to the average number of earnings points acquired per month of work before the onset of disability (further details are given below and in Viebrok [2006] and Köhler-Rama et al. [2010]).

How have disability benefit levels changed over time? In Section 3.4.3, I documented a trend toward lower replacement rates for regular old-age pensions. Because of the close linkages between old-age and disability pensions, most of the underlying changes apply to disability benefits as well (Bäcker et al. 2011).

In the US, there seem to have been no important legislative changes that have affected the level of disability pensions beyond this overall trend in pension levels (but recall the possible implications of growing earnings inequality for group-specific replacement rates emphasized by Autor and Duggan 2003, cf. Section 3.4.3).

In Germany, the 2000/2001 reform did introduce further changes that reduced the level of disability benefits in addition to trends in overall pension generosity: First, as noted above, new partial benefits were set at 50% of the full pension – rather than the two thirds provided by the old occupational disability pension. Second, disability pensions claimed before the new full (i.e., reduction-free) retirement age for the OAP for the severely disabled were now treated as cases of early pension take-up. More specifically, benefits became subject to actuarial adjustments of 0.3% for every month until

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47 One additional dropout year is granted for every five years since turning 21, up to a maximum of five years. Thus, persons claiming disability benefits before age 27 are not granted any dropout years, while persons ages 47 and over are granted the maximum of five.
the full retirement age (63 for birth cohorts 1944 and later, between 60 and 63 for birth cohorts 1941-1943; see Table 3.5 above). Workers claiming disability benefits before age 60 are treated as having retired at age 60 for the purposes of calculating actuarial adjustments which are therefore capped at 10.8% (given a full retirement age of 63). This considerable decrease in generosity for workers claiming disability benefits before age 60 was partly offset by changes in the calculation of virtual insurance periods. Before the 2001 reform, workers received additional pension credits for all months remaining until age 55 and for a third of the months between ages 55 and 60. Since the reform, months between ages 55 and 60 are fully counted (rather than only to a third). Köhler-Rama (2003: 37-38) cites estimates by Göhde (2000) according to which the combined effect of these changes was to reduce full disability benefits by 3-4%. Calculations by Viebrok (2003: 219, Figure 3) suggest that losses were greatest for those claiming disability benefits in their late 50s, because these workers feel the full force of the newly introduced actuarial adjustments, while not or only partly benefitting from the more generous calculation of virtual insurance periods. Because of the reduction from two thirds to only half of full benefits, losses are greater for recipients of partial pensions.

**Complementary disability insurance.** A final issue that deserves brief discussion is the role of complementary insurance against disability-related earnings losses. In both the US and Germany, a worker who starts to claim public disability benefits in his 50s can typically collect benefits that are not much lower than the regular old-age pension that she would have received a few years later (i.e., if she had not become disabled). Thus, if public benefits are largely sufficient for maintaining one's standard of living, there is little need for complementary disability insurance. However, if public pension replacement rates are rather low – as is the case in the US and increasingly also in Germany – disability benefits will have to be supplemented with additional income. One option for older (as opposed to younger) workers may be early take-up of complementary old-age pensions. In this regard, it is important to recall that early retirement tends to be more costly under DC than under DB plans (see 3.4.3), suggesting that, other things being equal, the diffusion of DC plans in the US has reduced

48 For example, a worker becoming disabled at age 50 would have received 80 months of additional credits (60 for the five years until age 55 and another twenty for the five years from ages 55 to 60). A person becoming disabled at age 58 would have received 8 months of additional credits (one third of the 24 months remaining until age 60).
older workers’ capabilities for coping with disability via early retirement. A second option is to rely on complementary disability benefits. As with complementary old-age pensions, such complementary coverage can be employer-provided or individualized and technically it can be ‘built into’ old-age pension plans via special disability provisions or provided by separate insurance plans.

Unfortunately, consistent time series on the prevalence of employer-based and individual disability insurance do not seem to exist for either Germany or us. However, in the American case, experts suggest that the decline of DB pensions has gone hand in hand with a decline of employer-provided disability benefits, which were often provided via disability provisions in DB retirement plans or as separate elements of traditional ‘benefit packages’ (Rappaport 2011; Shea 2012). As for Germany, the ongoing trend toward lower public replacement rates creates a need for complementary disability coverage that according to most observers has so far been only insufficiently met by employer-provided and/or individual disability insurance (Gunkel 2008; Köhler-Rama et al. 2010; Bäcker et al. 2011).

The growing need for complementary disability insurance likely poses particular problems for low-income households: A first reason is that, like access to other fringe benefits, access to employer-provided disability insurance is highly stratified (for recent American figures, see usdol 2012: Table 16). Second, low-skilled and low-paid workers tend to face higher risks of becoming disabled, for example, because they work in more physically demanding or psychologically stressful jobs (Köhler-Rama et al. 2010; Bäcker et al. 2011). This drives up the price of individualized disability insurance for these workers, because premia are closely tied to individual disability risks (often ascertained through extensive background checks). The result is a situation where those most in need of complementary insurance are often unable to afford it. Köhler-Rama et al. (2010: 67; translation J.P.H.) therefore conclude that ‘the “three-pillar paradigm” is not a realistic model for the risk of invalidity.’

3.4.5 Income taxation

In addition to transfer programs, progressive income taxation is another important means of cushioning the economic impact of trigger events.

49 ‘[D]as “Drei-Säulen-Paradigma” [stellt] in Bezug auf das Invaliditätsrisiko kein realistisches Modell dar.’
The more progressive a tax system, the more income changes in pre-government (or taxable) income will be attenuated through taxation (Fabig 1999; McManus and DiPrete 2000; Chen 2009). Overall, the German system of income taxation appears to be more progressive than the American (Mendoza et al. 1993) – while noting that the precise degree of progressivity, defined as the change in the average tax rate associated with a change in taxable income, may be very different at different levels of income.

As for changes in progressivity over recent decades, there appear to be no strong trends in Germany, but the American tax system has become dramatically less progressive at the very top of the income distribution (i.e., for the 0.5% and especially the 0.1% of households with the highest incomes, see Piketty and Saez 2007). Changes were much less pronounced, however, for the middle of the income distribution (Piketty and Saez 2007), which is more relevant to this study. In the lower part, the US tax system appears to have become more progressive due to repeated extensions of the Earned Income Tax Credit (EITC, see Blank [2009]). The EITC is a key element of American ‘activation’ or ‘make work pay’ policies. It is a tax credit awarded to low-income families on the basis of their earned income. The award initially rises with earned income (‘phase-in range’) and thus is effectively a negative income tax. It then reaches a plateau where the credit is at its maximum and does not change with further increases in earned income as long as it remains below a threshold value that marks the beginning of the ‘phase-out range’. In the phase out-range, the credit is gradually reduced, that is, the marginal tax rate is positive, until the credit finally reaches zero. The thresholds for the various stages, the maximum credit, and the (negative) marginal tax rates in the phase-in and phase-out ranges all depend on family composition.

In general, the credit is much more generous for households with children. In 2010 the maximum credit for a childless single person was

50 This can be illustrated by a simple example. Consider a worker whose earnings fall from $4,000 to $2,000 after late-career job loss and who does not receive any other income. In a country with a flat (proportional) income tax of 25%, that worker’s post-government income would fall from $3,000 to $1,500. Relative to predisplacement income, the worker would have experienced a decline of 50% before as well as after taxes (so there is no cushioning of losses through the tax system). By contrast, in a country with a strongly progressive tax system where a monthly income of $4,000 is taxed at 25% and an income of $2,000 is taxed at only 10%, the in post-government would fall from $3,000 to $1,800, a loss of only 40%.

51 However, consumption taxes, which tend to be regressive because lower-income households consume a larger portion of their income are higher in Germany (Mendoza et al. 1993).
only $457, compared to a maximum credit of $5,036 for a single person with two children.\textsuperscript{52} Households must not have investment income (e.g., dividends, interest, or rental income) above a threshold value to be eligible.\textsuperscript{53} The \textit{EITC} is intended to reward paid work and therefore only earned income is counted in determining its size. However, disability benefits are considered earned income before the minimum retirement age and may be supplemented by the tax credit. Non-disability pensions are not considered earned income, but neither are they treated as investment income, so it is possible to supplement early retirement pensions with limited earned income and an \textit{EITC}. However, as the credit to childless household is restricted to persons between ages 25 to 64 (or couples where at least one spouse falls into this age range), it is generally not possible to draw on the credit for income support after reaching the full retirement age. For older workers below age 65 it must also be kept in mind that the credit awarded to childless household has always been very modest.

### 3.5 Female labor force participation and earnings arrangements

A central tenet of life course sociology is that individual life courses are shaped by their multiple interdependencies with other individuals’ lives. This very general idea of ‘linked lives’ – that ‘[l]ives are lived interdependently and social-historical influences are expressed through this network of shared relations[h]ips’ (Elder 1999: 10) – has been applied to a broad range of questions. Several studies have analyzed the extent of retirement coordination among spouses, with most studies finding that a retired spouse – or the spouse’s financial incentives for retirement\textsuperscript{54} – indeed raises the likelihood of retirement (e.g., Allmendinger 1990; Gustman and Steinmeier 2002; Coile 2003; Radl 2010). More recently, studies have begun to explore the impact of family biographies (widowhood, divorce, fertility) for retirement timing (Fasang 2008) and retirement income (Fasang et al. 2013).

\textsuperscript{52} http://en.wikipedia.org/wiki/Earned_income_tax_credit (access date: November 22, 2012).
\textsuperscript{54} The economic literature prefers this measure because of the potential endogeneity of spousal retirement status (Gustman and Steinmeier 2002; Coile 2003).
In this study, my main focus is on the role of spousal income as a potential buffer against the financial impact of adverse late-career events. As discussed in Chapter 2, labor income of an employed spouse (or pension income of a formerly working, retired spouse) reduces the relative decline in disposable household income after an adverse trigger event (‘insurance effect’). In addition, the presence of a partner opens up the possibility of an added worker effect where the earnings losses of the affected individual are (partly) offset by an increase in spousal labor supply. The actual scope for labor supply responses, however, may depend on the initial employment status of the spouse. A spouse working long hours already may have limited leeway for further increases in labor supply, but among older workers another important option may be to delay retirement (Coile 2004). For long-time non-employed spouses such as homemakers, on the other hand, a substantial added worker effect may be possible in theory, but their actual labor market opportunities may be very limited due to a (perceived) lack of skills (Allmendinger 2010).

These considerations suggest that country differences in prevailing earnings arrangements may lead to differences in the economic consequences of late-career events. Table 3.6 reports employment to population ratios and the share of full-time workers (as a percentage of all workers) for men and women aged 50 to 54, that is, largely before the occurrence of retirement. I report estimates for 1985, 1995, and 2005 to highlight changes over time. Men’s employment rates are similar across the two countries, ranging between 81 and 88%, and very few men work part-time. Period differences are also rather small, although there are hints of a downward trend in men’s employment rates, especially in Germany. Clear country differences, however, emerge for women. In 1985, 58% of American women ages 50–54 worked for pay, compared to only 46% of their German counterparts. Over time, women’s employment rates have grown in both countries, but more rapidly in Germany. Thus, while there was still a substantial difference of roughly nine percentage points in the mid-1990s, the difference had declined to a mere two percentage points in 2005. However, this convergence in women’s overall employment rates conceals very different trends in the prevalence of part-time employment: 40% of working German women worked less than 30 hours per week in 2005, up from 33% in 1985. In the US, this share fell from 17% to 11% over the same period. In terms of the number of hours worked, German-American differences in women’s labor supply thus remained substantial even in the mid-2000s.
Table 3.6 Employment to population ratio (EPR) and prevalence of part-time work at ages 50-54

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th></th>
<th>United States</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPR</td>
<td>88</td>
<td>85</td>
<td>81</td>
<td>85</td>
</tr>
<tr>
<td>% working &lt; 30 hrs/week</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPR</td>
<td>46</td>
<td>60</td>
<td>70</td>
<td>58</td>
</tr>
<tr>
<td>% working &lt; 30 hrs/week</td>
<td>33</td>
<td>35</td>
<td>40</td>
<td>17</td>
</tr>
</tbody>
</table>

Part-time share is the proportion of working men/women with less than 30 hours per week rather than the population share.
Source: OECD Labour Force Statistics (http://stats.oecd.org/)

Table 3.7 more directly looks at earnings arrangements of individuals aged 50-54. It confirms that, among the cohorts studied here, earnings arrangements were more traditional in Germany than in the US. In 2004, 25% of Germans aged 50-54 lived in couples with two full-time earners, compared with almost 40% in the US. Traditional male breadwinner households were more common in Germany, where 46% lived in households with a man working full-time and a woman working between 10 and 30 hours (25%) or less than 10 hours (21%). In the United States, only 28% lived in households where the man worked substantially longer hours (in 13% of cases the woman worked part-time and in 15% she worked fewer than 10 hours). Less than 10% lived in female breadwinner households where the woman was the main earner (in terms of work hours). Over time, there has been a clear trend toward less traditional earnings arrangements and more dual-earner couples in both countries, suggesting that the buffering capacity of families has grown. In both countries, most of the change occurred between the mid-1980s and mid-1990s with ‘detraditionalization’ slowing down afterwards.

The German trends partly reflect the impact of reunification. As is well known, earnings arrangements had been much less traditional in the German Democratic Republic and to some extent this difference persisted after reunification. The German changes between 1985 and 1995 are therefore partly attributable to the inclusion of less traditional East German households into the population. The changes between 1995 and 2005 conceal different trends in West and East Germany. In the West, there was a continuing trend towards more dual-earner and modified male
breadwinner couples where the woman works part-time rather than not at all or only very short hours. In East Germany, the share of dual-earner couples declined substantially, presumably because of persistently difficult labor market conditions.

Table 3.7  Earnings arrangements at ages 50-54 (column percentages)

<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th></th>
<th>United States</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual FT earner</td>
<td>16</td>
<td>28</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>Man FT, Woman PT</td>
<td>19</td>
<td>22</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Man FT, Woman NM</td>
<td>42</td>
<td>29</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>Woman FT, Men PT</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Woman FT, Men NM</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Single, FT</td>
<td>12</td>
<td>9</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Single, PT</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Single, NM</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

*FT = Full-Time (30+ hours per week), PT = Part-Time (10-30 hours), NM = Not/Marginally employed (< 10 hours). Source: PSID, SOEP, CNEF, own calculations*

These pronounced differences in female labor force participation, particularly during the 1980s, are consistent with greater institutional support for traditional earnings arrangements in Germany (Lewis 1992; Sainsbury 1999). With respect to the questions of this study, these country and period differences in earnings arrangements in Table 3.7 suggest that there will be systematic variation in the extent of family buffering through the presence of additional earners and strength of added worker processes. Given the greater share of non-employed older women in Germany, particularly in the 1980s, married men suffering late-career job loss or health shocks will more often have been their household’s sole earner. Over time, the buffering potential of the family seems to have increased in both countries. Whether this also holds for the average worker experiencing late-career displacement or some other adverse event, however, depends on how the profile of these workers compares to that of older workers as a whole. For example, late-career job loss might be increasingly concentrated among low-skilled men who are more likely to be single.
3.6 Summary

This chapter has mapped the changing institutional context of late-career job loss and exit from work in Germany and the US. In keeping with the overarching research questions of this study, my main focus has been on welfare state programs that play a crucial role in maintaining income after these events. However, I have also sought to broaden the picture beyond the welfare state narrowly construed. In particular, I have discussed how various contextual factors might affect the (re)employment prospects of older workers and how differences in family earnings arrangements might influence the potential for private income buffering.

What are the main insights to take away from the above discussion? In terms of older workers’ (re)employment prospects, there are several plausible explanations why Germany long used to be ‘No Country for Old Workers’ (Dietz and Walwei 2011). In particular, Section 3.3 emphasized the following factors: the existence of marked labor market boundaries; low levels of participation in continuing training and lifelong learning; high levels of employment protection that may shelter workers with permanent contracts, yet diminish the reemployment prospects of displaced older workers; and the possibility that the predominance of early retirement exacerbates statistical age discrimination. Some of these factors may be amenable to short-term change: Presumably, levels of continuing training participation could be boosted in the short or medium run, perhaps by emulating the model of ‘public-induced employment maintenance’ (Buchholz et al. 2011: 16) found in the Scandinavian countries. In addition, the very idea that an ‘early exit culture’ undermines incentives for skill development and reinforces (statistical) age discrimination suggests that the situation of older workers may improve as the recent trend toward later retirement (see Section 3.2) continues and stabilizes. Other factors depressing the demand for older workers, and the reemployment prospects of displaced older workers in particular, seem to be more deeply entrenched in Germany’s institutional structure. The most obvious one is an emphasis on specific skills that, in combination with a strong ‘credentialism’, results in marked labor market boundaries.

Compared to Germany, the (re)employment prospects of older workers appear to be much better in the US. The trend toward early retirement during the 1970s and 1980s was not nearly as strong as it was in Germany and impediments to worker mobility are widely considered to be lower in the American context where portable ‘general’ skills play a greater role. Participation in continuing training is also higher than in Germany, particularly
among older workers. At least in part, these differences are probably due to the stick of less generous (early) retirement benefits and lower overall levels of ‘decommodification’ rather than to the carrot of more attractive job opportunities. They may nevertheless greatly improve the reemployment prospects of displaced workers, compared with their German counterparts.

Against this background, I then examined the main welfare state programs and employment-based functional equivalents that provide insurance against the economic consequences of job loss and contribute to income maintenance after exit from work. Here, the main differences between Germany and the US can be summarized as follows:

– Public pensions replace a greater portion of former earnings for German workers, except at the very bottom of the earnings distribution.

– Complementary pensions, that is, employer-sponsored and individual private pensions, play a much larger role for retirement income in the US. In addition, the typical complementary plan in the US is more risky in the sense that returns on savings are more uncertain. This difference appears to have grown in recent years as DC plans have diffused in the US.

– Access to and actual participation in complementary pensions are stratified in both countries: Higher-earning, more educated, male, and non-minority workers are more likely to have complementary pension wealth (which includes claims to annuity-type benefits).

– Early retirement options in the public pension program were much more generous in Germany than in the US, especially until the mid to late 1990s.

– Other public transfer programs that cushion the impact of late-career job loss and that may be used as bridge benefits on the way to early retirement were also more generous in Germany. For example, maximum duration of earnings-related unemployment benefits was considerably longer in Germany throughout the observation period, even though differences have somewhat narrowed over time. Public disability benefits also tend to be higher in Germany, especially for workers with higher earnings, as their level is closely related to that of public old-age pensions. In addition, labor market considerations explicitly enter into award decisions for disability benefits in Germany. It is difficult to tell whether and to what extent complementary disability insurance in the US made up for this gap.

In qualitative terms, these differences seem to have persisted throughout the observation period. At the same time, many of these programs have undergone major changes. The following trends are the most noteworthy ones:
In both countries, net replacement rates provided by the public pension pillar have declined over recent decades. At least in Germany, this trend is set to continue over the next decades.

From the late 1990s onwards, the costs of early retirement – in terms of benefit adjustments for early take-up of public pensions – have risen markedly in Germany. By contrast, adjustments for early take-up of public benefits changed very little in the US.

In Germany, reforms of early retirement options in the public pension pillar were accompanied by declines in the generosity of unemployment and disability benefits. The most far-reaching changes of unemployment benefits (cuts in maximum benefit durations for older workers and abolition of the earnings-related second tier) did not occur until the mid-2000s. However, a limited and incremental trend toward lower replacement rates and tightening of eligibility criteria occurred already during the late 1980s and 1990s. Disability benefits were reduced modestly by the 2000/01 reform.

In the US, changes in the sphere of employer-provided pensions have arguably been far more consequential than changes in the public pension pillar. In particular, low-risk defined-benefit pension plans have increasingly been replaced by higher-risk defined-contribution plans. DC plans not only also tend to raise the costs of early retirement compared to DB plans. There is also considerable evidence that this ‘Transformation of the American Pension System’ has gone hand in hand with increased social inequalities in complementary retirement wealth, especially by level of educational attainment (Wolff 2011).

Overall, German-American differences in welfare state arrangements thus accord with conventional wisdom, even though the American public pension pillar is perhaps larger and more redistributive than suggested by the stereotypical characterization of the American welfare state as ‘residual’ (cf. Alber 2010). In addition, the detailed analysis of recent trends in key welfare state programs also seems to confirm widespread views that collective insurance mechanisms have diminished over recent decades. In Germany, more of the dynamic has occurred in welfare state programs proper, that is, in the public pension scheme and in other public programs that cover the majority of the workforce. In the US, at least with respect to late-career risks, the most striking and consequential changes have arguably occurred in the realm of employer-provided pensions.

But do these German-American differences add up to distinctive social models that result in distinctive life course trajectories? And do recent
trends really justify the pessimistic conclusions of authors such as Hacker (2006) and Butterwegge (2006)? Even though the answers to these questions may always contain some element of arbitrariness, taking a closer look at ‘how real lives are really lived’ (Goodin et al. 1999: 1) seems indispensable for providing well-grounded answers to these questions. Section 3.2 showed that the employment rates of older workers have risen noticeably in recent years. Perhaps then older workers have been able to compensate for lower public replacement rates by delaying their retirement? Perhaps the investment choices of American workers have been good enough so that they are faring as well under the new DC regime as they did in the old DB world, perhaps they are even faring better? Perhaps the impact of declining public transfers for displaced older workers in Germany has been limited by improved opportunities for reemployment, or by increased ‘family buffering’?

In order to address these and related questions, the following chapters provide an analysis of income trajectories around exit from work and late-career job loss. More concretely, the next chapter discusses the general empirical strategy and essential technical aspects of the analysis. It is followed by the two main empirical parts that deal with the consequences of exit from work and job loss, respectively. For each of these events, I will first provide a shorter chapter that combines the institutional information in this chapter with microsociological considerations to formulate a set of concrete hypotheses and research questions for the empirical analysis. A longer empirical chapter then confronts these hypotheses and questions with empirical data.