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A Fragile Pillar: Statutory Pensions and the Risk of Old-age Poverty in Germany

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Old-age Poverty in Germany

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Abstract

The statutory pension system is still the most important income source among senior citizens in Germany. Due to increasing disruptions in employment biographies since the 1970s and due to the mass unemployment in Eastern Germany since the 1990s, there is a growing fear of post-retirement poverty in Germany. We develop a micro-simulation model to compare the distribution of statutory pension incomes for new retirees in 2020 with those in 2004. The pension income distribution is calculated for Eastern and Western Germany separately, for men and women, and for different skill levels. Throughout Germany, we find a growing post-retirement poverty, especially for low-skilled workers. Eastern Germany will lose its current advantage in terms of high pensions and low inequality.

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1 Introduction

Many developed countries are facing a significant demographic change with a growing old-age dependency ratio. The ongoing ageing process of many European societies raises the question of whether old-age incomes are secure. The OECD recently compared the situation of today's pensioners in its member states and found that "old-age income poverty is common to most OECD countries" [OECD (2009, p.74)]. The social reality of a shrinking labor force that will have to support a growing number of pensioners is likely to result in an increasing risk of old-age poverty. In Germany, the old-age dependency ratio will rise from 33.89% in 2009 to 54.46% in 2040.[1] Given the German Pay-As-You-Go (PAYG) pension system, this situation will lead to lower pension levels and higher social security contributions. A significant body of research has examined old-age poverty risk. Most of the literature concentrates on average values and standard pensioners, but little is known about the current and future distribution of pension incomes.

In addition to the challenges posed by demographic change, high unemployment is a problem [especially in East Germany, see Berlemann & Thum (2005)] that also contributes to old-age poverty. Through disruptions in employment biographies, unemployment causes people to accumulate less entitlement in the statutory pension insurance. Unemployment also creates difficulties in saving for old age. Finally, the pension reforms that have been instituted since the early 90s may have increased the risk of old-age poverty as well.

These facts are well known, but little is known about the magnitude of the growth of old-age poverty risk. Focusing on the German statutory pension insurance, we calculate the distributions of benefits for people retiring in the years from 2020 to 2022 compared with those retiring in the years from 2004 to 2006.

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[1] The old-age dependency ratio is the ratio of people older than 65 in 2009 and older than 67 in 2040 to the working population (20 - 65 in 2009 and 20 - 67 in 2040).

Distinct from the related literature, we disaggregate benefit distributions with respect to gender, vocational education level and place of residence (East or West Germany). In contrast to Deutsche Rentenversicherung (2007) or OECD (2009), we focus on the distribution of pension points and illustrate the pension outlook across three skill levels. We also use a much larger dataset, and we generate more detailed statistical information about the distribution of pension claims with respect to gender, region and skill level.[2]

Why do we focus on the statutory pension insurance when the old-age income also consists of benefits from occupational pension schemes and private retirement arrangements? Unfortunately, there are no reliable data for occupational and private pensions. However, the statutory pension insurance should be a good approximation for total old-age income for two reasons. First, for the vast majority of people, the benefit from statutory pension insurance is the most important component of old-age income. Deutsche Rentenversicherung Bund (2007) estimates that statutory pensions account for over 90% of old-age income in East Germany and about 80% in West Germany. Deutsche Rentenversicherung Bund (2007) also shows that the lower an individual's income, the higher the ratio of statutory pension to his entire old-age income.[3]

Our analysis starts with a brief introduction to German statutory pension insurance in section 2. In section 3, we describe our approach and our dataset. The simulation results are presented in section 4. Section 5 concludes the paper.

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[2] Deutsche Rentenversicherung (2007) is based on individual interviews and official data. The sample contains about 13,000 individuals from four age groups composed of 20 birth cohorts (1942 - 1961). Our dataset contains information from more than 100,000 individuals from two age groups composed of six birth cohorts (1939 - 1941 & 1955 - 1957).

[3] Bundesregierung (2008) provides evidence that statutory pensions are the dominant source of old-age income for low-income earners.

2 The German Statutory Pension Insurance

The German statutory pension insurance is a Bismarckian PAYG system.[4] The monthly pension (MP) is determined by four factors, as described in the following equation:

$$MP = TF \cdot PF \cdot PPV \cdot PP.$$

The first factor on the right hand side is the Time Factor (TF), which is equal to one when a person retires at the legally determined age. Currently, the retirement age is 65 years and will increase to 67 by 2029. In the case of early retirement, the TF is diminished by 0.003 per month. Early retirement is feasible for up to 60 months before the seniority set by law, so the maximum discount is 18%. If a person decides to work beyond his 65th birthday, the TF is increased by 0.005 per month. In the following analysis, we assume a TF equal to one.

The Pension Factor (PF) determines the monthly pension according to pension type. For the standard old-age pension, the pension factor is equal to one. It deviates from one for other pension types, such as a surviving dependent's pension or a disability pension. As we focus on old-age pensions, we assume PF to be equal to one.

Individual pension points (PPs) in one period are calculated as a ratio of the annual gross salary of individual j ($IAGS_{ij}$) and the mean annual gross salary ($MAGS_i$) in region i.[5] To obtain an individual's PP after his working life, the PPs for every period are summed up.

$$PP = \sum_{t=1}^{n} \frac{IAGS_{ijt}}{MAGS_{it}}, i = West, East.$$

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[4] A good introduction to the determinants and calculation methods in the German statutory pension system is provided by Breyer & Buchholz (2009).

[5] Technically, the individual incomes in East Germany are also compared with the mean annual gross salary in West Germany but are multiplied by a factor to compensate for the lower wage level in East Germany.

Figure 1 shows the evolution of the mean incomes in both parts of Germany. The upper limit for IAGSi is 2.14 PP in every period t. This limit is reached at 64.800 Euro in West Germany and 54.600 Euro in East Germany in 2008. Individuals also receive PPs while unemployed. For short-term unemployment, PPs are calculated on the basis of 80% of the most recent gross income. For long-term unemployment, the basis for assessment is currently 205 Euros. This assessment leads to approximately 0.1 PP for one year of long-term unemployment.
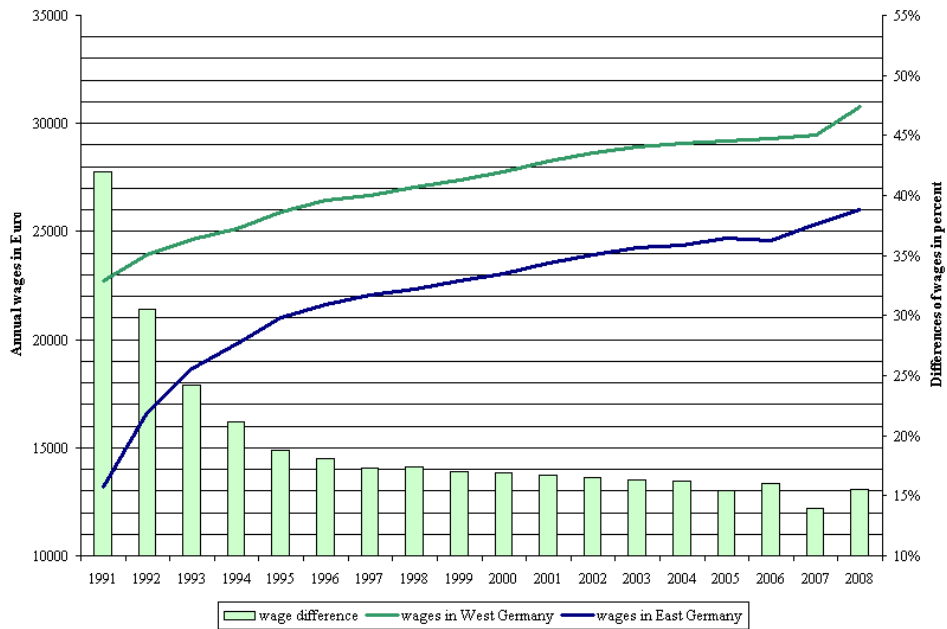

Figure 1: Evolution of the annual average gross salary

The Pension Point Value (PPV) translates the PPs into monetary values. The PPV is calculated every year for West and East Germany separately, as long as there are differences in income between West and East Germany. The PPV is determined through a demographic factor, the growth rate of wages and the contribution rate of the statutory pension insurance.[6] The evolution of the PPV_W and PPV_E are presented in Figure 2. In 2008, the PPVs were 26.56 Euros and 23.34 Euros in West Germany (PPV_W) and East Germany (PPV_E), respectively. In the following analysis, we keep the PPVs constant to facilitate the comparison of pensions across cohorts. Note that variations in the PPV would have level effects, but would not affect the distribution.
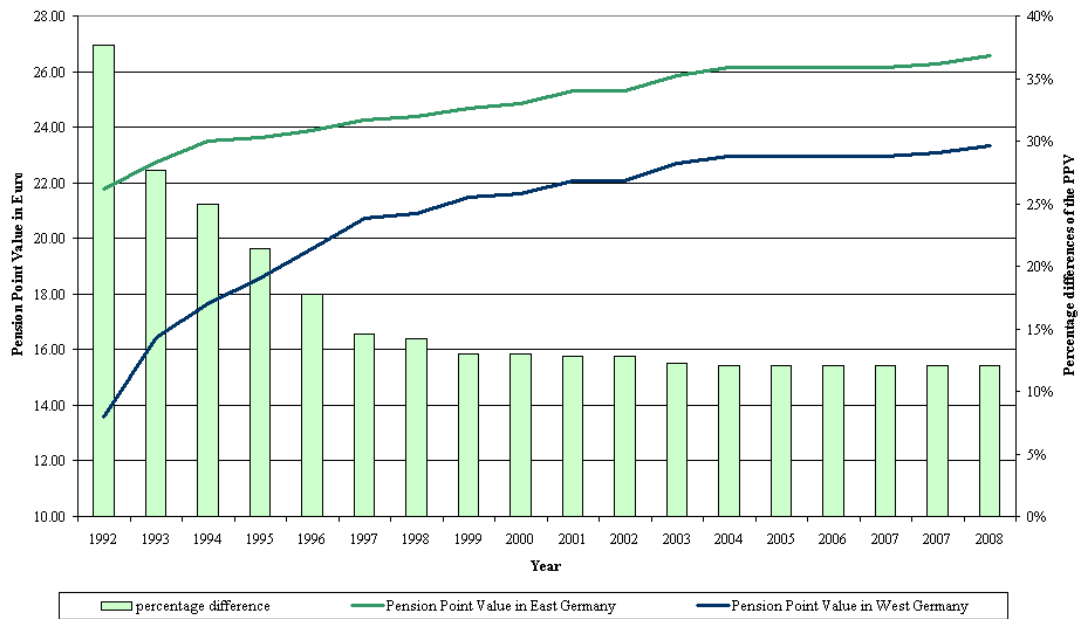
Figure 2: Evolution of PPV_W and PPV_E

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[6] The growth rate of the PPV in East Germany (PPV_E) must be at least as large as the growth rate of the PPV in West Germany (PPV_W). This restriction is due to the intended adjustment from the PPV_E to PPV_W. Besides this adjustment restriction, a positive growth restriction is also set by law. The growth rate of the PPVs must be at least zero, but strictly non-negative.

Besides the basic calculation methods presented here, there are many specific rules that go into calculating pensions for certain groups.[7] We do not discuss them in detail here, but we take them into account in our simulation model.

3 Methodology

Our aim is to compare the distributions of accrued PPs in the German statutory pension insurance for two cohorts, new pensioners in the years 2004 to 2006 and new pensioners in 2020 to 2022. For simplicity, we assume that all people receive old-age pensions and retire at the age of 65. As mentioned above, we keep the PPV constant.

To obtain a more detailed picture, we classify people according to their education, distinguishing between three skill levels. Without vocational training, we classify a person as low skilled. A completed vocational training is regarded as a medium skill level, and an academic degree is essential for a classification of high skilled.

In addition, we carry out separate analyses for men and women as well as for East and West Germany. The dataset, which allows us to reconstruct individual working careers and to distinguish between age, gender, qualification and residence, is the *IAB-Beschäftigtenstichprobe: Scientific Use File Regional File 1975 - 2004 (IABS - R04)* from the German Institute for Labor Market and Job Research (IAB). This academic dataset is a two percent sample of all socially insured German workers.[8]

To our knowledge, we provide the first analysis using the IABS - R04 to calculate individual pension information. Table 1 and 2 show the summary statistics of our data set.

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[7] One of the most important groups is employees in the mining industry. For this group, there are three main differences. First the pensionable age for miners is 60, rising to 62 by 2024. Second, it is possible for miners to gain more than 2.14 PPs a year. Third, the PF is 1.33.

[8] Drews (2007) gives a detailed description of this dataset.

	1939 - 1941		1955 - 1957	
Qualification	Male	Female	Male	Female
Low	3.12%	7.05%	1.70%	2.52%
Medium	77.15%	79.29%	83.34%	80.73%
High	15.71%	10.05%	12.80%	14.27%
Not Known	4.02%	3.61%	2.15%	2.48%
Total Quantity	3335	4128	5163	5396

Source: authors calculation

Table 1: Skill East Germany

	1939 - 1941		1955 - 1957	
Qualification	Male	Female	Male	Female
Low	15.76%	26.32%	8.00%	11.90%
Medium	74.34%	67.24%	74.73%	75.80%
High	7.47%	3.29%	16.26%	10.62%
Not Known	2.43%	3.15%	1.02%	1.67%
Total Quantity	18639	13903	27525	25271

Source: authors calculation

Table 2: Skill West Germany

All information in the IABS-R04 is given as spell data. Every spell contains information about individual incomes on a daily basis. In addition to working biographies, spells of unemployment are also included. The IABS-R04 provides information from 1975 - 2004 for West Germany and from 1992 to 2004 for East Germany.

Because of the spell structure of the dataset, we have to review and edit the dataset to determine an individual's annual income. We therefore concentrate on specifics concerning individual income and education. Furthermore, we convert the spell structure of the dataset into a panel structure. As a first step, we introduce a standardized time frame for every individual. We do so by transforming the original spell information for every individual into annual information.[9] We then calculate individual annual income. Because of the missing income information in cases of unemployment, we calculate the individual unemployment benefit as well as the unemployment aid with respect to the applicable regulation. After completing the individual income information, we calculate the PPs for every person in the sample. Finally, we review the skill levels of each individual. In cases where an individual could be assigned to more than one skill level, the higher level was used.[10]

To achieve reliable results, we eliminate some entries from our dataset. First, a person must be registered for a minimum of five years in the IABS-R04. This five year period is necessary because we suppose that people with less than five years generate their pension rights mainly in other systems.[11] For example, civil servants in Germany are secured by a separate pension system. The second group of persons outside the statutory pension insurance system are the self-employed. Note that some civil servants and self-employed may be included in the sample if they were insured in the statutory pension insurance for more than 5 years. Finally, we assume that all people survive until 65 so that they reach the pension age.

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[9] The length of a spell is determined by the length of the individual status signal and not on a standardized time frame (e.g., annual base).

[10] Advanced training as well as non-professional work can influence the skill level status.

[11] Another reason for the 5 year restriction is that the German statutory pension insurance only pays out pensions after 5 years of contributions.

As the IABS - R04 dataset only contains information for the period of 1975 - 2004 and 1992 - 2004 for West Germany and East Germany, respectively, we have to make plausible assumptions about the employment history and the future employment career until the retirement age. The first gap to fill is the time until the IABS - R04. For example, a person from West Germany born in 1939 was 36 years old in 1975. If this person started working at the age of 20, 16 years of working time (1959 - 1975) are missing in the IABS-R04. We solve this problem by using a second dataset [*SUF FDZ-Biografiedatensatz - VSKT 2005 Quelle: FDZ-RV (VSKT 2005)*] with similar information to fill in the missing periods of time. This dataset is a 0.2% sample of all socially insured individuals between the age of 15 and 67.[12]

To combine both datasets we first divide the VSKT 2005 into 24 sub-groups according to education (high, medium, low), age (cohort 1939 - 1941 and 1955 - 1957), residence (East and West Germany) and gender (male and female). Second we sum the individual's PPs until 1975 (West Germany) and 1992 (East Germany). Finally, we examine the empirical distribution of all 24 sub-groups. Table 3 provides summary characteristics of the 24 distributions. To combine the IABS-R04 with the VSKT 2005, we have to enlarge the VSKT-2005 data using a bootstrap technique. In a last step, we combine the two datasets. Every person in the IABS-R04 receives a random PP according to his individual characteristics (skill, cohort, residence, gender).[13] The second gap to fill is the time until retirement in 2020 - 2022 for the young cohort (forecast period). Figure 3 illustrates the methodological approach for the oldest and youngest age groups in West Germany.

We assume that every individual from the IABS-R04 follows his own observed employment pattern until he/she retires.

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[12] A detailed description of the VSKT 2005 can be found in Deutsche Rentenversicherung FDZ (2008).

[13] We also calculated this simulation period with average values. We calculated the average PP per year worked for all 24 groups according to gender, education, region and year of birth. Both methods lead to almost identical average results. Because the empirical distribution method shows more realistic variations, we focus on this method in the following analysis.

			West Germany		East Germany	
			Male	Female	Male	Female
1939 -1941	High	Mean	12.01	7.39	40.97	31.76
		std.	5.16	5.72	4.72	7.04
	Medium	Mean	15.48	8.01	38.29	24.27
		std.	5.00	4.58	6.36	7.26
	Low	Mean	13.88	6.63	34.47	11.66
		std.	6.93	4.70	7.94	4.05
1955 - 1957	High	Mean	0.23	0.10	14.57	12.73
		std.	0.53	0.33	5.24	3.09
	Medium	Mean	0.71	0.64	15.15	12.41
		std.	0.69	0.66	3.38	2.68
	Low	Mean	1.23	1.23	12.82	11.66
		std.	0.97	0.97	4.57	4.05

Source: authors calculation.

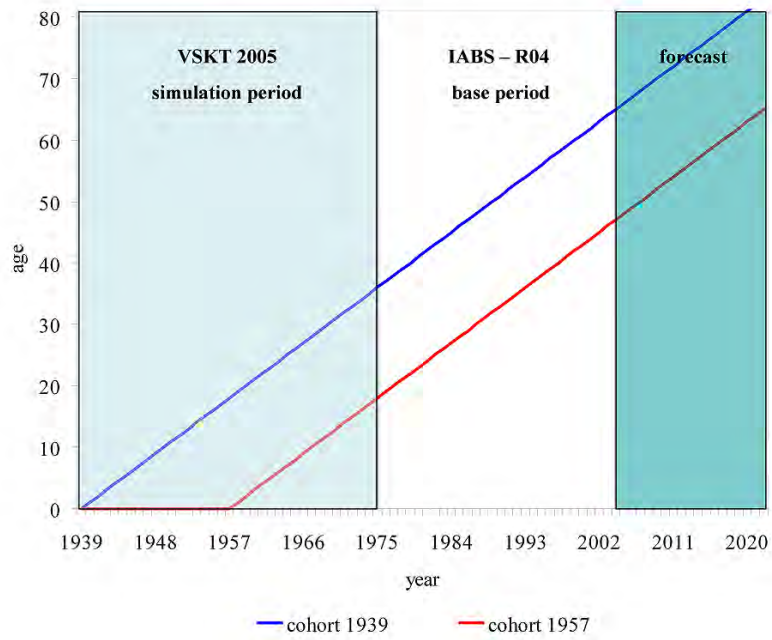Table 3: Descriptive statistics of the 24 VSKT 2005 sub-groups

Figure 3: Procedure using the example of West Germany

We calculate the fraction of employment, short-term unemployment and long-term unemployment relative to the total time in the IABS-R04 sample (base period) and project these fractions to the time until the individual reaches the age of 65.[14] To calculate the forecast period, we use the current labor market legislation with respect to unemployment spells. An alternative scenario is calculated with the assumption that the East German employment pattern converges with the West German pattern. The resulting differences are negligible.

Under these assumptions, we calculate the PP distributions for the two cohorts (1939-1941 & 1955-1957) at their retirement age with respect to individual characteristics. In the following analysis, we concentrate on the differences between the two cohorts of new pensioners.

4 Results

In this section, we provide a detailed analysis of the two cohorts regarding their financial situation in the statutory pension system. There is a widely held belief that Germany will face old-age poverty in the near future. Therefore, we ask whether there is a growing risk of old-age poverty and whether there are specific differences between the two parts of Germany. We also discuss the importance of the individual skill level and the differences between men and women.

We start with an analysis of old-age poverty risk. The related literature is mostly based on expected average pension incomes. So far, no systematic analysis based on the distribution of pension incomes exists. We fill this gap.

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[14] We classify a person as short-term unemployed when he/she receives unemployment benefits and as long-term unemployed when he/she receives unemployment aid.

4.1 Situation of the male pensioners

Figure 4 displays the PP distribution of men in West Germany on the left-hand side and men in East Germany on the right-hand side. The dark bars represent the accrued PPs of the 1939 to 1941 cohorts, and the bright bars show the outcome for the younger cohorts. To assess the risk of old-age poverty, we assume a threshold of 30 PPs. In 2008, 30 PPs are equivalent to 700 Euros in East Germany and 796 Euros in West Germany. We use this level as a critical threshold because it is nearly equivalent to the level of social assistance.

West Germany   East Germany
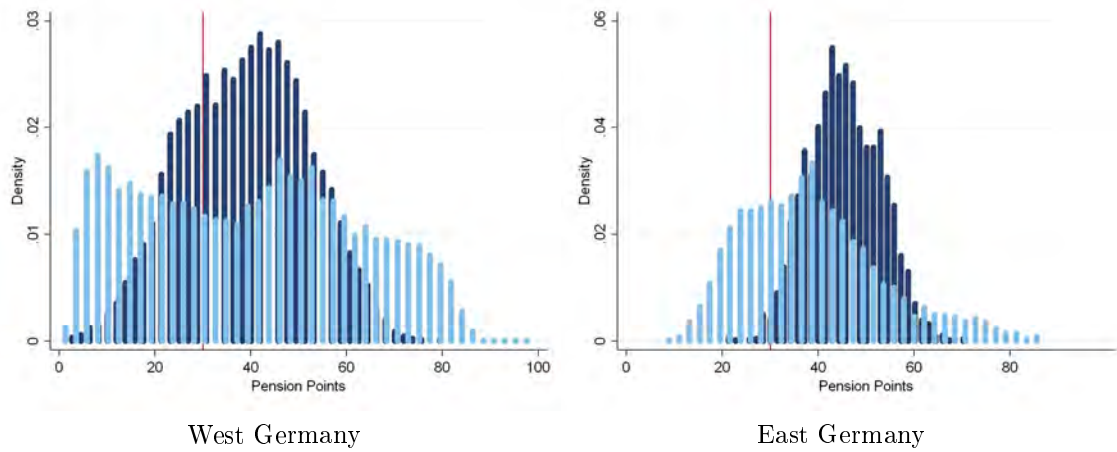
	West 39-41	West 55-57	East 39-41	East 55-57
Mean	38.81	39.47	45.42	38.48
Std. Dev.	12.97	22.48	7.41	14.25
25% percentile	29.05	19.47	40.10	27.71
50% percentile	39.27	39.97	45.20	37.11
75% percentile	48.33	56.85	51.02	46.59
<30 PP	27.16 %	38.47 %	1.44 %	30.48 %

Source: authors calculation.

Figure 4: Pension Point Distribution of male Pensioners

In the following discussion we interpret our results focusing on two main issues: first, the comparison over time and second, the comparison of the two regions. In East Germany, we observe a decreasing mean pension level over time. The distribution becomes more heterogeneous. Heterogeneity also increases in West Germany, but here, the mean increases slightly for the second cohort.

The older cohort in East Germany profits from the long, continuous employment in the former German Democratic Republic (GDR) and from the strong revaluation of the incomes of those times. Since the 1970s, workers in West Germany have faced a growing risk of unemployment, which has led to a lower mean PP level.

It is also important to keep in mind that, in addition to unemployment, there are also individuals in the sample who are now self-employed or civil servants, but who acquired PPs for more than five years.

For the age group born in 1955 to 1957 in East Germany, the period since unification is more important. A lower level of income for unskilled work in connection with increased unemployment leads to a significant increase of the share of people below the critical threshold. In West Germany, we also observe an increasing risk over time (27% to 38%), but this increase is not as dramatic as in East Germany (1% to 30%). The median and the mean do not change significantly in West Germany, but the distribution becomes broader.

In both parts of Germany, the standard deviation increases from the older to the younger cohort. The risk of old-age poverty rises in both East and West Germany. This increase is especially large in East Germany, but the level is still below the level in West Germany.

4.2 Situation of the female pensioners

In West Germany, the situation of women is quite different from that of men, while in East Germany it is quite similar. Apart from this finding, we detect two female specifics. First, women collect lower average PPs in all skill classes, and second, women in West Germany collect lower average PPs than in East Germany. Figure 5 displays the PP distribution for females in both parts of Germany.
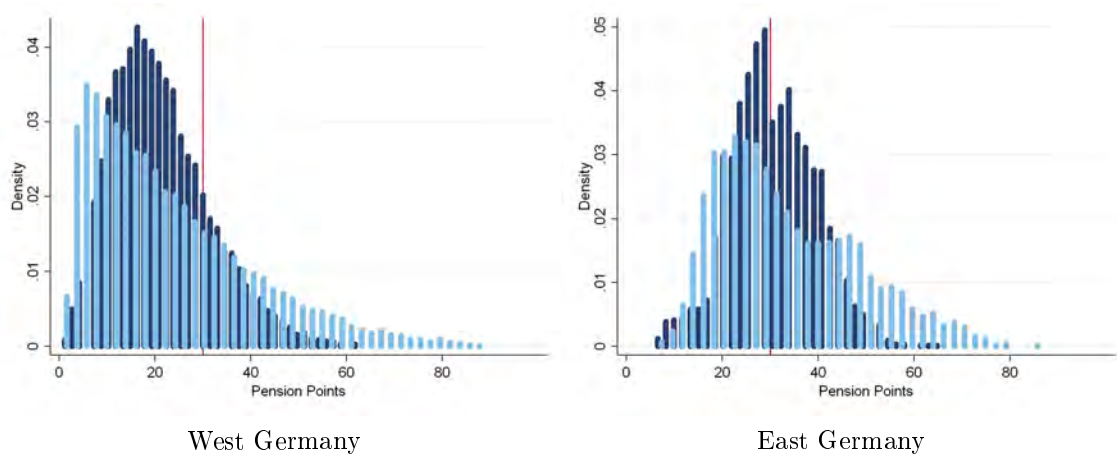
	West 39-41	West 55-57	East 39-41	East 55-57
Mean	20.99	22.94	30.62	33.36
Std. Dev.	10.17	16.30	8.89	14.39
25% percentile	13.46	9.98	24.46	22.03
50% percentile	19.57	18.99	29.90	30.09
75% percentile	27.02	32.25	36.86	43.50
< 30 PP	81.89 %	71.68 %	49.81 %	50.49 %

Source: authors calculation.

Figure 5: Pension Point Distribution of female pensioners

Comparing Figure 4 to Figure 5 shows the similarity of the PP distributions of East German men and women as well as the dissimilarity of the PP distributions of West German men and women. In East Germany, the PP distributions for women and men are described by similar statistics (skewness, kurtosis, standard deviation).[15] The reason for the different patterns of the PP distributions for women in East and West Germany and the relative lower PP level in West Germany is the lower full-time labor participation of women in West Germany. As a result, the PP level in West Germany is more then ten PPs below the East German level (20 PP vs. 30 PP). We observe an increase in full-time labor participation of medium- and high-skilled women over time. Nevertheless, the labor participation and therefore the overall PP level of West German women remains low. Women in East Germany often work full-time.

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[15] The skewness (0.687) and kurtosis (2.762) of East German women is very close to the skewness (0.683) and kurtosis (3.231) of East German men.

4.3 The relevance of skill level

This section explores the impact of education on the expected pension claims of men and women. Our results show that pension levels increase and poverty risk decreases with education. This finding holds true for men and women in East and West Germany. Table 4 reports the summary statistics for the different skill levels with respect to gender and cohort.

	Mean PP Male		Mean PP Female	
skill-level	1939 - 1941	1955 - 1957	1939 - 1941	1955 - 1957
West Germany				
High	42.29	47.48	24.20	27.99
Medium	39.84	38.70	21.98	23.06
Low	32.32	30.44	18.06	17.65
East Germany				
High	51.05	50.03	41.71	43.68
Medium	44.53	36.93	29.82	31.83
Low	39.11	27.86	23.85	23.86

Source: authors calculation.

Table 4: Comparison of mean PP level by skill

In Table 4, the higher PP levels of high-skilled men (51.05 PP and 50.03 PP) and women (41.71 PP and 43.68 PP) in East Germany for both cohorts are especially noticeable. For men, the higher share of high-skilled employees within the statutory pension system raises the mean PP level and thereby increases the gap between the medium- and high-skilled in comparison to West Germany. In East Germany, there are more high-skilled people in the statutory pension system because, as recently as the 1990s, it was possible for them to switch into alternative pension security systems because of their careers (civil servants or self-employment). Furthermore, the substantially higher mean PP levels of women in East Germany are explained by their higher labor participation.

As mentioned above, the old-age poverty risk decreases with education, which becomes very clear when comparing the situations of low- and high-skilled men. Figure 6 shows the PP distribution of high-skilled men in East and West Germany whereas Figure 7 shows the PP distribution of low-skilled men in East and West Germany.


West Germany   East Germany
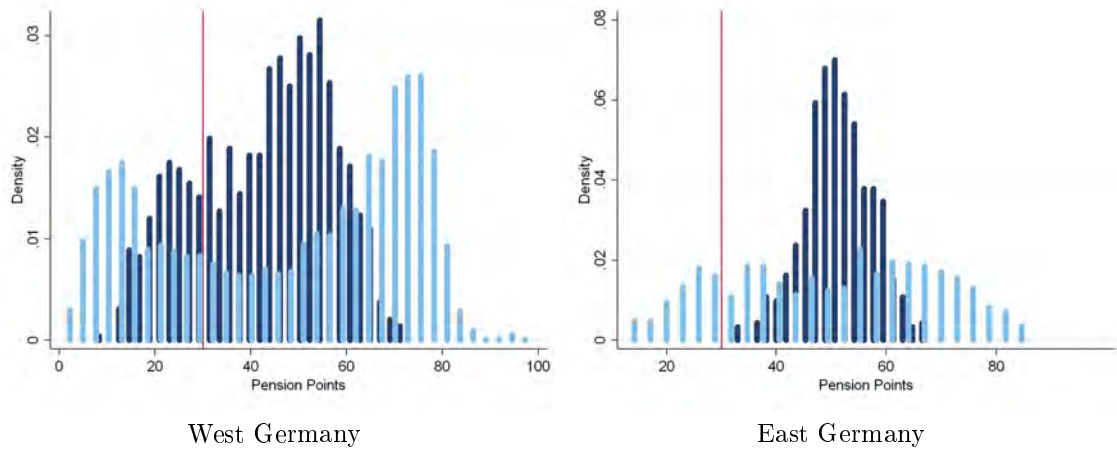
	West 39-41	West 55-57	East 39-41	East 55-57
Mean	42.29	47.48	51.05	50.03
Std. Dev.	14.13	25.39	6.36	18.36
25% percentile	31.02	21.84	47.18	34.52
50% percentile	44.71	54.51	51.00	51.59
75% percentile	53.79	70.58	55.24	65.29
< 30 PP	23.42 %	32.00 %	0 %	18.61 %

Source: authors calculation.

Figure 6: Pension Point Distribution of high-skilled men

The simulation for East Germany demonstrates dramatically that old-age poverty risk will increasingly depend on the skill level. Here, the percentage of high-skilled men with 30 or less PPs rises from zero to 18.61%, and the percentage of low-skilled men rises from 11.54% to 63.64%. In West Germany, the poverty risk for low-skilled workers is also significantly higher in both cohorts. In cases of high-skilled men, the old-age poverty risk of the young cohort in East Germany and both cohorts in West Germany is overestimated.

| West Germany | East Germany |
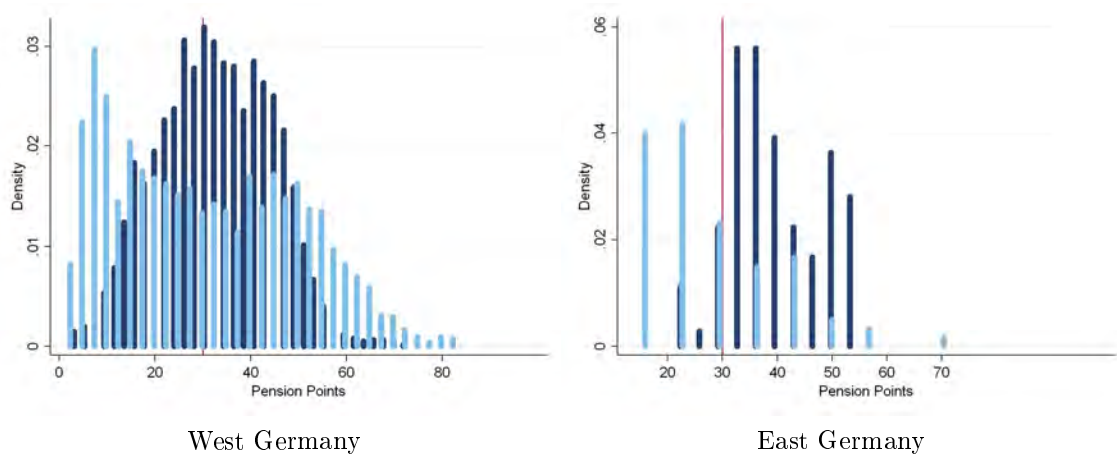
	West 39-41	West 55-57	East 39-41	East 55-57
Mean	32.32	30.44	39.11	27.86
Std. Dev.	11.88	18.85	8.44	12.41
25% percentile	23.78	13.59	32.75	19.02
50% percentile	32.25	28.39	37.37	24.36
75% percentile	41.42	45.86	46.25	36.63
< 30 PP	42.34 %	52.02 %	11.54 %	63.64 %

Source: authors calculation.

Figure 7: Pension Point Distribution of low-skilled men

This overestimation is due to the fact that there are individuals with less PPs within the sample who have left the statutory pension system because they became civil servants or self-employed and are therefore secured by alternate pension systems. As a result, we observe a concentration at a low PP level, but this phenomenon explains the bimodal distributions.

5 Conclusion

Is there a growing risk of old-age poverty in Germany? Is old-age poverty more relevant in East Germany? In both parts of Germany, we find a growing risk of old-age poverty and identify education as an important determinant. Low-skilled workers especially face a high risk of old-age poverty. In East Germany, the risk of old-age poverty is growing more rapidly than in West Germany in every skill group,

but for new retirees in the years 2020 - 2022, it is still smaller in magnitude than in West Germany. Men and women are facing more or less the same situation. In East Germany, medium- and high-qualified women seem to benefit from better income opportunities after unification, while women in West Germany generate more PPs due to higher labor market participation.

An analysis based on the statutory pension system clearly has its limits. First, old-age incomes provided by other sources (e.g., private and occupational pension schemes) are completely overlooked. Nevertheless, the statutory pension is and will be the most important pillar of old-age income in Germany, so it is a good approximation of old-age income.

Future research will have to focus on the second and third pillars of the German pension system. Family circumstances should also be considered. Some work towards modeling the old-age poverty for various family situations has already been performed by Krenz & Nagl (2009), but there are still many gaps to fill.

A Additional Figures
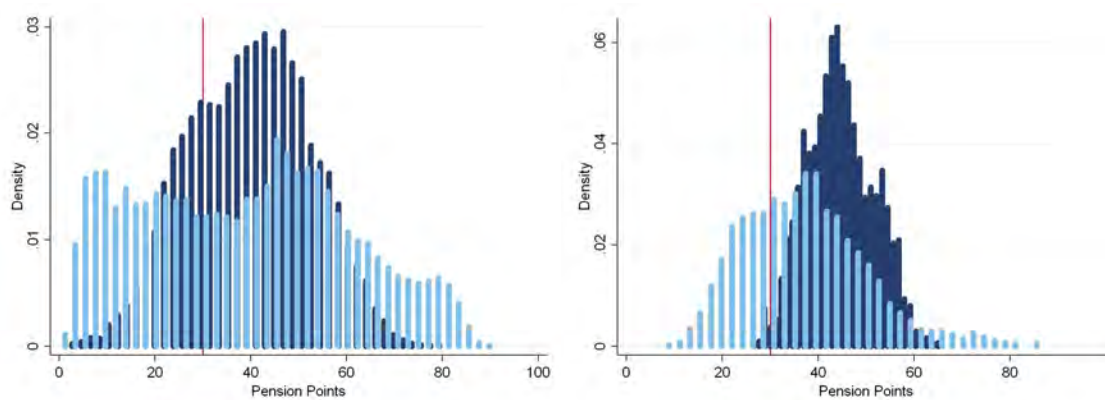
| West Germany | East Germany |

	West 39-41	West 55-57	East 39-41	East 55-57
Mean	39.84	38.70	44.53	36.93
Std. Dev.	12.63	21.63	6.95	12.58
25% percentile	30.28	20.02	39.59	27.43
50% percentile	40.27	39.38	44.12	36.28
75% percentile	49.07	54.65	49.42	44.63
< 30 PP	24.32 %	38.43 %	1.32 %	31.63 %

Source: authors calculation.

Figure A1: Pension Point Distribution of medium skilled Male Pensioners

West Germany   East Germany
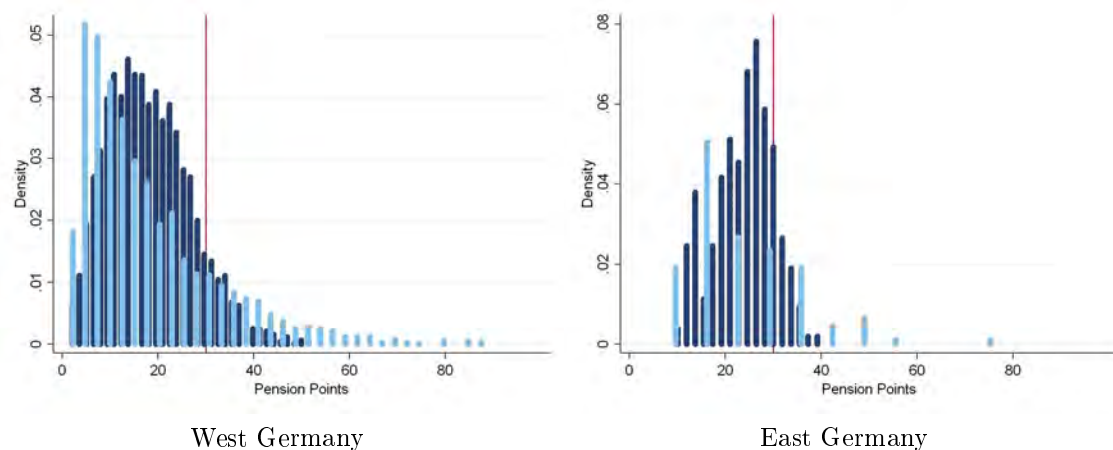
	West 39-41	West 55-57	East 39-41	East 55-57
Mean	18.06	17.65	23.85	23.86
Std. Dev.	8.62	13.69	6.09	11.47
25% percentile	11.41	7.48	19.80	15.35
50% percentile	17.14	13.51	24.59	20.68
75% percentile	23.56	23.54	28.06	28.81
< 30 PP	90.71 %	83.31 %	84.19 %	77.21 %

Source: authors calculation.

Figure A2: Pension Point Distribution of low skilled Female Pensioners

West Germany   East Germany
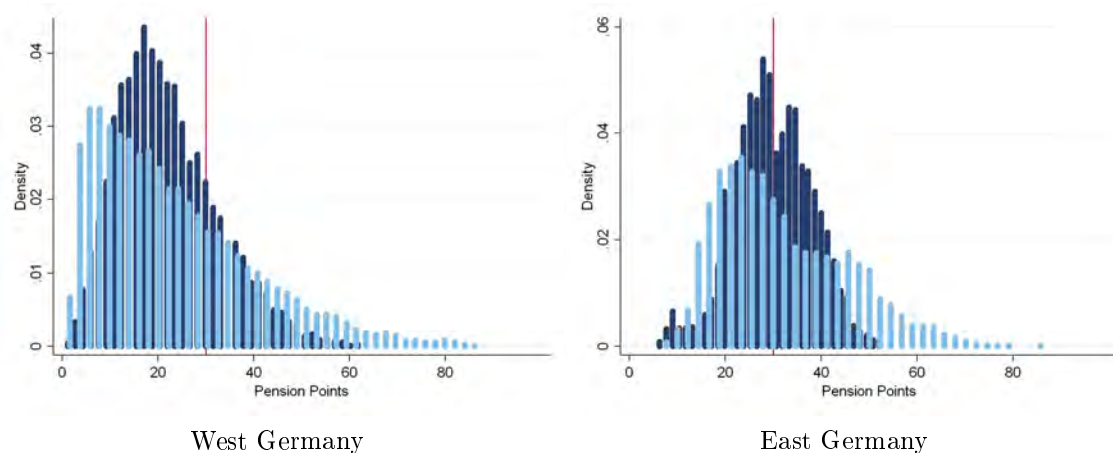
	West 39-41	West 55-57	East 39-41	East 55-57
Mean	21.98	23.06	29.82	31.83
Std. Dev.	10.34	15.91	7.99	13.08
25% percentile	14.35	10.38	24.33	21.60
50% percentile	20.47	19.53	29.45	29.05
75% percentile	28.40	32.29	35.46	41.16
< 30 PP	79.08 %	71.51 %	52.80 %	52.89 %

Source: authors calculation.

Figure A3: Pension Point Distribution of medium skilled Female Pensioners
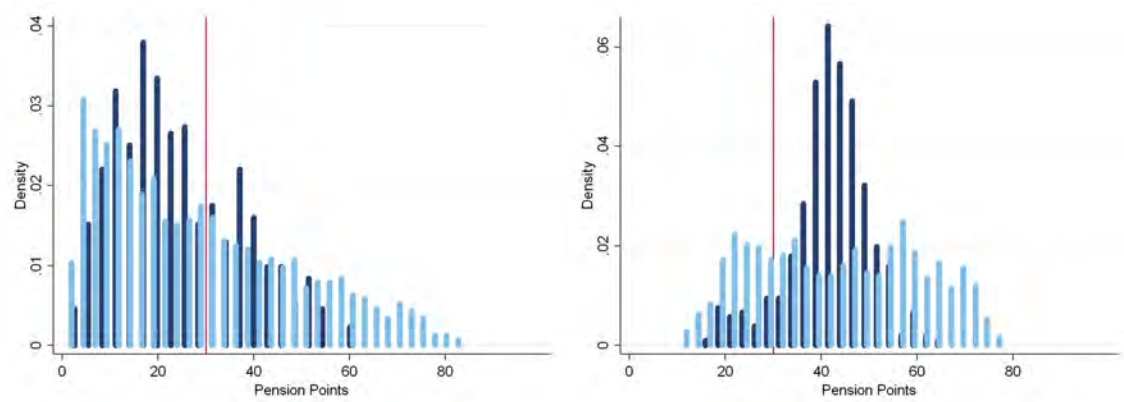
West Germany   East Germany

	West 39-41	West 55-57	East 39-41	East 55-57
Mean	24.20	27.99	41.71	43.68
Std. Dev.	12.95	19.65	8.29	16.95
25% percentile	13.62	11.31	38.11	28.49
50% percentile	21.77	23.76	42.32	43.64
75% percentile	33.72	41.52	46.62	57.72
< 30 PP	68.99 %	59.87 %	8.67 %	27.66 %

Source: authors calculation.

Figure A4: Pension Point Distribution of high skilled Female Pensioners

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