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Report to the Ranking Minority Member, Special Committee on Aging, U.S. Senate

May 1994

SOCIAL SECURITY DISABILITY

Most of Gender Difference Explained

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Health, Education, and
Human Services Division

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May 27, 1994

The Honorable William S. Cohen
Ranking Minority Member
Special Committee on Aging
United States Senate

Dear Senator Cohen:

Under the Social Security Disability Insurance (DI) program,[1] older women are allowed benefits at a lower rate than older men. For example, in 1988,[2] 39 percent of the female applicants aged 55 to 64—compared with 50 percent of the male applicants of the same age—were allowed benefits. However, the results of our study of this difference do not necessarily point to bias in the system. Rather, we found that most of the difference could be explained by (1) gender difference in impairments and demographic characteristics and (2) the rules for determining disability.

This report contains the results of our study in response to your request to analyze the circumstances surrounding the lower allowance rate for older women. Specifically, our study addressed the following questions: (1) Within the general population, are women aged 55 to 64 receiving DI benefits at a lower rate than men? (2) How much of the gender difference in allowance rates among older applicants for benefits is explained by differences in type and severity of impairment or applicants' demographic characteristics? (3) Do the accuracy ratings of disability decisions or the rates at which women and men eventually receive DI benefits show evidence of possible bias against older women in initial decisions?

Background

The DI program was authorized in 1956 under title II of the Social Security Act. The program provides income replacement for the disabled who have enough work experience to be insured under Social Security.[3] People who are insured under Social Security and whose resources fall below specified amounts may qualify concurrently for DI benefits and for

[1]This study is limited to workers who applied for disability benefits based on their work experience (see app. II).

[2]We chose 1988 as our study year primarily because the year was recent and we had developed a database for 1988 applicants in an earlier study of racial difference in allowance rates (see Racial Difference in Disability Decisions Warrants Further Investigation (GAO/HRD-92-56, Apr. 21, 1992)).

[3]In general, people over the age of 30 are insured if they have worked in Social Security-covered jobs for 20 calendar quarters (or 5 years) in the past 10 years. Lesser work requirements apply to applicants aged 30 or younger.

disability benefits under the Supplemental Security Income (SSI) program.[4] To be considered disabled under either program, a person must be unable to work at any substantial, gainful level[5] because of a physical or mental impairment expected to result in death or to last for at least 12 months.

Each year, more than 700,000 workers apply for benefits and, in recent years, about 45 percent of the applicants have been awarded benefits. According to December 1992 benefit data, the DI program paid out $28.8 billion in disability benefits to 4.9 million disabled people and their dependents.

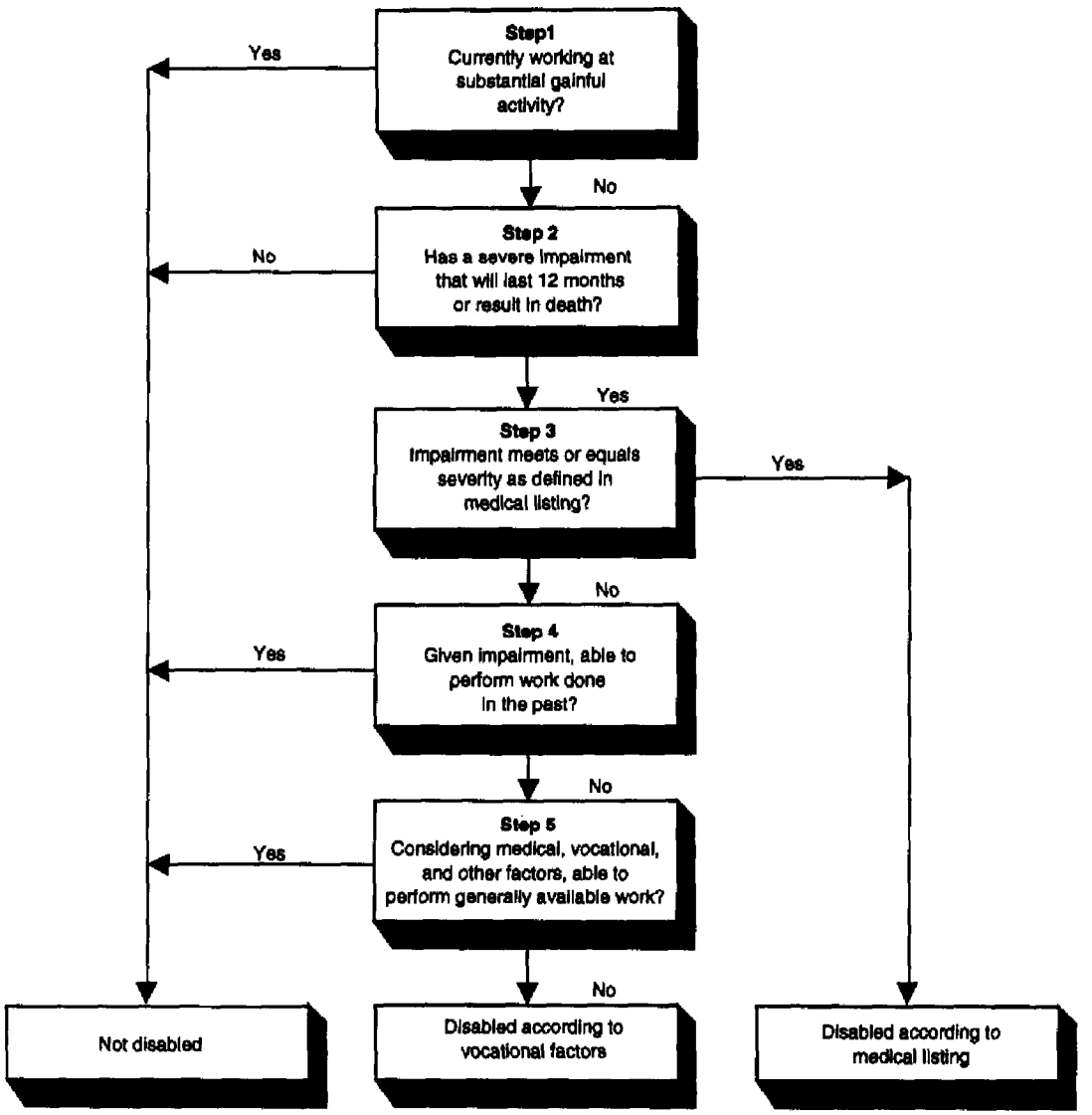
The Social Security Administration (SSA) administers the DI program with the help of state disability determination services (DDS). DDSs make the initial decisions on whether applicants should receive benefits. Applicants initially denied benefits may appeal the decisions through several levels of administrative review, including review by SSA's administrative law judges (ALJ). Decisions of administrative reviews may ultimately be appealed to federal court.

To determine whether an applicant qualifies for disability benefits, SSA has developed a five-step sequential evaluation process (see fig. 1). In step one, SSA determines if applicants meet the program's nonmedical eligibility requirements, including whether the applicant is insured or has recently worked. In steps two through five, state DDS officials determine whether applicants are sufficiently disabled to qualify for benefits. DDSs process applications through these four steps until they make a determination of disability or no disability. See appendix I for further details.

[4]The SSI program provides federal and state assistance to the aged, blind, and disabled whose income and resources fall below certain levels.

[5]Work activity is generally considered substantial and gainful if someone's earnings exceed a particular level (currently $500 monthly) established in regulations.

Figure 1: Five-Step Sequential Evaluation Process



Using SSA databases for 1988, we compared the number of female and male beneficiaries receiving DI benefits as a result of decisions made in 1988 or previous years to the total population of working age insured workers in each gender group. We examined DI allowance rates for 1988 applicants by

multivariate analyses to determine the extent to which the gender difference in allowance rates among older applicants occurred because women and men differed on those factors. We also analyzed whether women with less severe impairments applied for benefits more frequently than men. To examine other indicators of possible bias in initial decisions, we analyzed the rates at which, for 1988 initial decisions, (1) SSA's Quality Assurance (QA) reviewers detected errors, (2) ALJs reversed 1988 decisions on appeal, and (3) applicants initially denied in 1988 were receiving benefits in 1992 either as a result of an appeal or reapplication. See appendix II for further details on our scope and methodology.

Results in Brief

Relative to their numbers in the population of workers insured for Social Security benefits, older as well as younger women received DI benefits at lower rates than men. This is understandable because women apply for benefits at a lower rate than men. However, in older age groups, women who apply for benefits are also allowed benefits at a lower rate.

Type and severity of impairment and the demographic characteristics we analyzed explained about two-thirds of the gender difference in allowance rates for older applicants of DI benefits. In large part, the gender difference appeared to be attributable to differences in impairment severity and occupation. A somewhat higher proportion of older women than men applied with less severe impairments. Among applicants with more severe impairments, the majority of the gender difference in allowance rates was explained by differences in impairment type and demographic characteristics. Most notably, women had occupations that, among older applicants, had lower allowance rates regardless of gender. SSA rules that recognize the effects of age on the ability to adjust to new types of work appeared to account for this occupational difference in allowance rates.

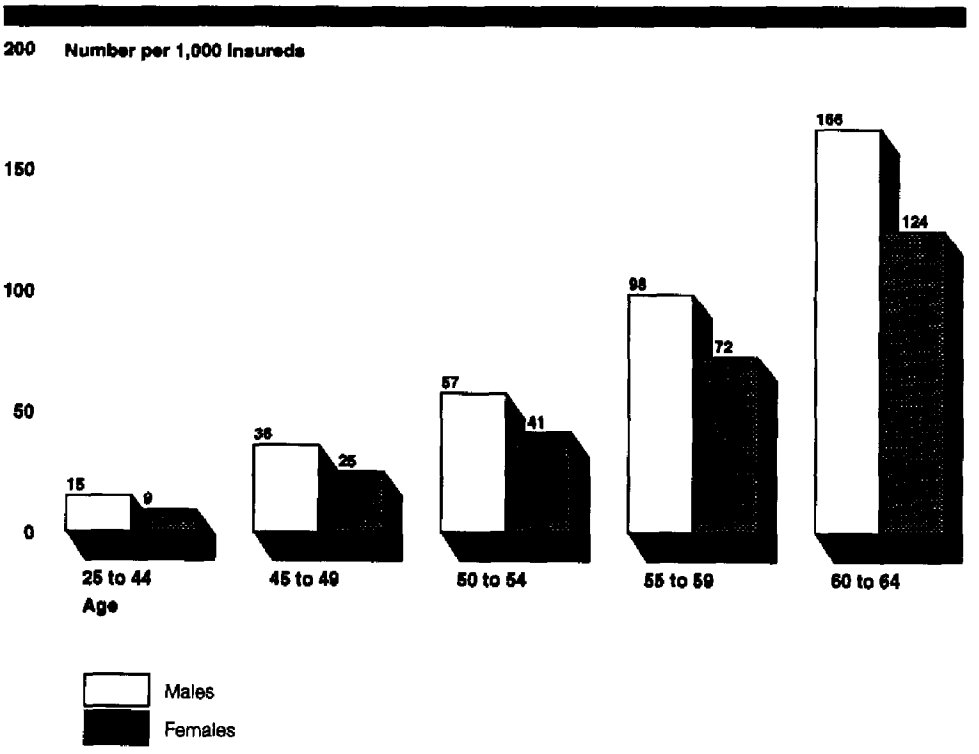
Our inability to explain about one-third of the gender difference in initial decisions did not necessarily point to bias in the system. Rather, our inability to explain the difference could be attributable to a lack of precision in the data for our analysis or to an inability to include all relevant factors in our analysis. In addition, other indicators we examined for evidence of possible bias—SSA's QA error rates, ALJ reversal rates, and benefit status 4 years after the initial denial—showed no evidence of bias in initial decisions.

Principal Findings

Women Receiving Benefits in 1988 at Lower Rate Compared to Population of Insured Workers

In 1988, compared to the population of workers insured under Social Security, women received DI benefits at a lower rate than men. Overall, relative to their numbers in the insured population, women were about one-third less likely than men to receive benefits: about 25 women per 1,000 insured women received benefits compared with 37 men per 1,000 insured men. The lower rate of benefits for women occurred in all age groups (see fig. 2).

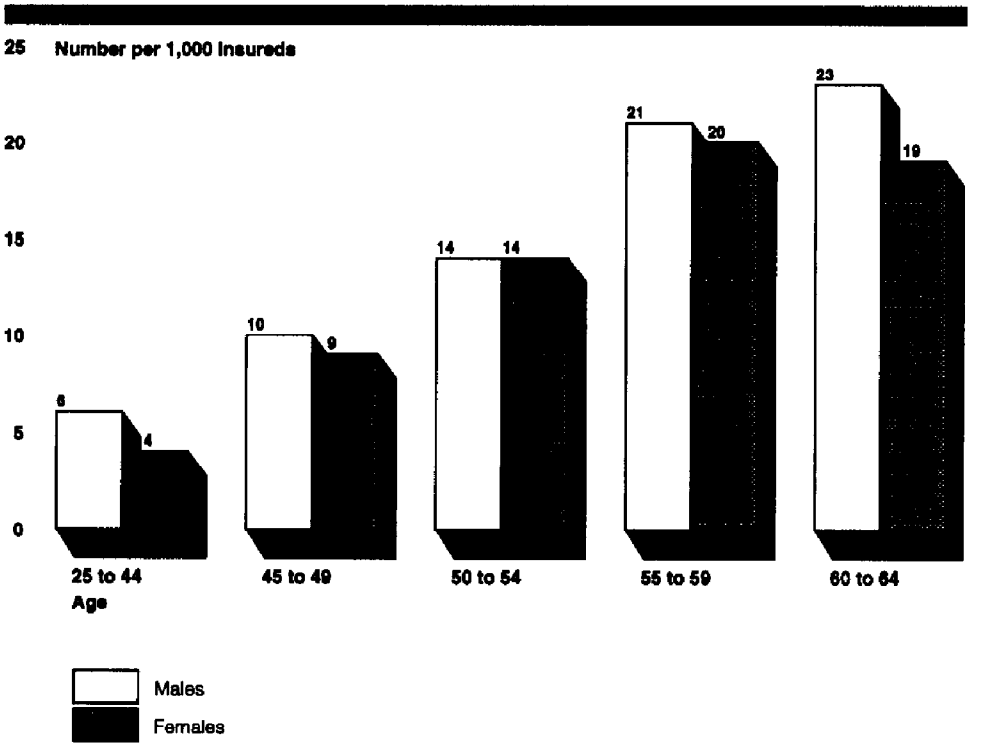
Figure 2: Number per 1,000 Insureds Who Received DI Benefits in 1988 by Gender and Age



Two factors accounted for the lower rate of benefits for women in the insured population. First, in certain age groups, women were less likely to apply for benefits (see fig. 3). More specifically, in 1988, compared to the insured population under 50 and the population 55 and over, women applied for benefits at a somewhat lower rate than men. Second, among

applicants aged 50 and over, women who applied for benefits were less likely to be granted benefits than men.

Figure 3: Number per 1,000 Insureds Who Applied for DI Benefits in 1988 by Gender and Age



Gender Difference in Allowance Rates Largest Among Older Applicants

In 1988, for both DI-only applicants and those applying concurrently for DI and SSI benefits, a relatively large gender difference in allowance rates favoring men occurred for applicants aged 55 and over (see table 1). Among applicants under age 50, women and men had the same allowance rate. At about age 50, the allowance rate began to increase but less so for women than men. As a result, a gender difference in allowance rates emerged at about age 50 and approximately doubled in size by age 60. Further, as table 1 shows, the gender difference in allowance rates was somewhat larger among applicants for DI benefits only compared to those applying concurrently for DI and SSI benefits.

Table 1: Allowance Rate by Age and Gender

	DI Only			Concurrent		
Age	**Males**	**Females**	**Difference**	**Males**	**Females**	**Difference**
25-44	.29	.29	.00	.25	.25	.00
45-49	.32	.32	.00	.24	.24	.00
50-54	.40	.35	.05	.31	.27	.04
55-59	.52	.41	.11	.41	.35	.06
60-64	.55	.44	.11	.44	.35	.09
Total	**.43**	**.36**	**.07**	**.29**	**.28**	**.01**

Among older applicants, the size of the gender difference varied by demographic characteristics and impairment type (see app. III, table III.1). The gender difference was largest among applicants with (1) less than a high school education; (2) occupations in agricultural, fishing, and forestry and benchwork; and (3) cardiovascular, endocrine, musculoskeletal, and other disorders.[6]

Because the gender difference in DI allowance rates was largest for applicants 55 and over, we focused on that age group in our analyses. Also, because patterns of results for DI-only and concurrent applicants were similar, the remainder of this letter focuses on data for DI-only applicants. Appendix III contains data for concurrent applicants along with some data for DI-only applicants.

Majority of the Gender Difference Explained by Factors Analyzed

Among both DI-only applicants and those applying concurrently for DI and SSI, about two-thirds of the gender difference in allowance rates among applicants aged 55 to 64 could be explained by impairment type and severity and the demographic characteristics we analyzed. Especially among applicants who applied only for DI benefits, older women with less severe impairments were more likely to apply. Among DI-only and concurrent applicants with more severe impairments, the other factors we analyzed—impairment type, education, geographic location, occupation, race, and years in occupation—explained a majority of the gender difference in allowance rates. Based upon our analytical model,[7] we estimate that the factors we analyzed could account for 53 to 80 percent of the 11-point gender difference in allowance rates among older DI-only applicants and 67 percent of the 12-point gender difference among older concurrent applicants. Overall, our analytical model explained about

[6]Other disorders include impairments not separated into categories in our analyses (see app. III, table III.1).

[7]See appendix II, table II.3, for details on our analytical model.

two-thirds of the gender difference in allowance rates among older DI-only and concurrent applicants.

Older Women Apply With Less Severe Impairments

Especially among applicants for DI only, the allowance rate for older women was lower, in part, because they had less severe impairments. For both DI-only and concurrent applicants, older women were more often denied benefits at step two of the sequential evaluation process, the point at which applicants are screened for impairments of relatively low severity (see fig. 1). At that step, among applicants for DI only, 21 percent of women compared to 15 percent of men aged 55 to 64 were judged to have impairments that were nonsevere or not expected to last 12 months (see app. III, table III.2).[8] Assuming that this screening is not biased, this indicates that more older women with less severe impairments applied.

Our analytical model[9] indicated that, among applicants for DI only, this difference in severity could account for about 27 percent of the difference in allowance rates among older applicants. However, among concurrent applicants, even though women were more likely to be judged to have less severe impairments, the difference in severity did not appear to account for any of the difference in allowance rates.

Federal physicians, who evaluate severity as part of SSA's QA review, also rated a larger proportion of older women as having applied with impairments of relatively low severity. In samples of 1988 decisions, among DI-only applicants, these physicians rated 18 percent of women compared to 12 percent of men aged 55 to 64 as having (1) no disability, (2) a disability of low severity, or (3) an impairment that would last less than 12 months (see app. III, table III.3).

This difference in severity also reflects differences in the impairments of the older women and men who applied. Specifically, older women who had musculoskeletal impairments were more likely to apply (see app. III, table III.4). Among DI-only applicants, 33 percent of women compared to 24 percent of men aged 55 to 64 with musculoskeletal impairments applied. On the other hand, older men with cardiovascular impairments other than hypertension were more likely to apply. Sixteen percent of women compared to 29 percent of men aged 55 to 64 with these cardiovascular impairments applied. Applicants with musculoskeletal impairments were more likely to be denied benefits at the step two

[8]To qualify for benefits, an applicant's impairment must be expected to last at least 12 months or result in death.

[9]See appendix II, table II.3, for details on our analytical model.

severity screen than applicants with these cardiovascular impairments (see app. III, table III.2).

Factors Analyzed Explained Majority of Relatively Large Difference in Allowance Rates Based on Vocational Considerations

Among older applicants who passed the step two severity screen, for both DI-only and concurrent applicants, the gender difference was largest in the vocational determinations made at steps four and five of the disability determination process (see table 2 and app. III, table III.5). Steps four and five determine whether applicants whose impairments do not meet the medical criteria for disability at step three have vocational limitations that, when combined with the medical impairment(s), prevent applicants from working (see fig. 1).[10] About one-half of all applicants make it to step four for consideration. Among DI-only applicants aged 55 to 64, 27 percent of women compared to 40 percent of men considered at step four were allowed benefits (see table 2). In contrast, among applicants under 55, women and men were allowed benefits at about the same rate.

Table 2: Proportion of DI-Only Applicants Receiving a Favorable Decision at Various Steps of Sequential Evaluation Process by Age and Gender

	Age					
	25 to 54			55 to 64		
Stage	Males	Females	Difference	Males	Females	Difference
Severity screen (step two)[a]	.77	.75	.02	.85	.79	.06
Medical criteria (step three)[b]	.37	.36	.01	.41	.39	.02
Vocational determinations (steps four and five)[c]	.11	.11	.00	.40	.27	.13

Note: Base for each step is the number of applicants considered at that step.

[a]Proportion of applicants who passed the severity screen.

[b]Of the applicants considered at step three, proportion allowed benefits at step three.

[c]Of the applicants considered at step four, proportion allowed benefits at step five.

Impairment type and the demographic factors we analyzed—education, geographic location, occupation, race, and years in occupation—explained more than half of the difference in allowance rates in the proportion of older applicants allowed as a result of decisions at steps four and five.

Occupation alone explained more than one-third of the difference in the proportion of older applicants allowed as a result of decisions at steps

[10]Step four determines whether applicants retain the ability to do their past relevant work. Step five determines, by considering both medical and vocational factors, whether applicants who cannot do their past work can do other work.

four and five. Lower proportions of applicants were allowed benefits in occupations in which women prevailed. Among DI-only and concurrent applicants, older women were more likely than older men to have worked in clerical and sales occupations, which involve sedentary work, and service occupations, in which a majority of jobs require light physical exertion (see table 3). Male applicants, on the other hand, were more likely to have worked in occupations involving strenuous physical work, such as agricultural, fishing, and forestry; machine trades; structural; and miscellaneous occupations.

Table 3: Occupational Distribution at Step Four for Applicants Aged 55 to 64 by Gender

	Program					
	DI only			Concurrent		
Occupation	Males	Females	Difference	Males	Females	Difference
Professional, technical, and managerial	20	16	4	13	14	- 1
Clerical and sales	8	26	- 18	5	13	- 8
Service	14	29	- 15	21	41	- 20
Agriculture, fishing, forest and related	4	1	3	8	2	6
Processing[a]	6	4	2	6	4	2
Machine trades[b]	10	5	5	8	5	3
Benchwork[c]	5	8	- 3	4	7	- 3
Structural	15	1	14	17	1	16
Miscellaneous[d]	12	2	10	13	2	11
Unknown	5	7	- 2	4	11	- 7

[a]According to the Dictionary of Occupational Titles (DOT), this category includes occupations concerned with refining, mixing, compounding, chemically treating, heat treating, or similarly working material and products.

[b]According to the DOT, this category includes occupations concerned with the operation of machines that cut, bore, mill, abrade, print, and similarly work such materials as metal, paper, wood, plastics, and stone.

[c]According to the DOT, this category includes occupations concerned with the production and repair of relatively small objects and materials.

[d]According to the DOT, this category includes occupations concerned with transportation services; packaging and warehousing; utilities; amusement, recreation, and motion picture services; mining; graphic arts; and various miscellaneous activities.

Clerical and sales occupations, in particular, had a relatively low proportion of older applicants allowed benefits, regardless of gender (see table 4). But occupations in which men prevailed, especially agriculture,

fishing, and forestry, had a relatively high proportion of applicants allowed benefits.[11]

Table 4: Proportion of DI-Only Applicants Allowed Benefits as a Result of Step Four and Five Decisions by Occupation, Age, and Gender

	Age					
	25 to 54			55 to 64		
Occupation[a]	Males	Females	Difference	Males	Females	Difference
Professional, technical, and managerial	.17	.17	.00	.37	.33	.04
Clerical and sales	.13	.10	.03	.24	.18	.06
Service	.11	.10	.01	.36	.31	.05
Agriculture, fishing, forestry and related	.10	.06	.04	.56	.30	.26
Processing	.07	.09	-.02	.42	.30	.12
Machine trades	.09	.09	.00	.43	.29	.14
Benchwork	.09	.09	.00	.38	.25	.13
Structural	.08	.06	.02	.46	.27	.19
Miscellaneous	.08	.09	-.01	.42	.29	.13
Unknown	.18	.15	.03	.45	.35	.10
Overall	.11	.11	.00	.40	.27	.13

[a]For definitions of occupations, see notes, table 3.

SSA rules that are more lenient for older workers regardless of gender who cannot do their past work account for this occupational difference in the proportion of older applicants allowed benefits as a result of step four and five decisions. Age may significantly affect a person's ability to adapt to new types of work. In accordance, SSA rules specify that people aged 55 and over who can no longer do their past work do not have to adjust to other work if (1) past work required moderate to heavy levels of physical exertion and (2) the applicant had no skills readily transferable to lighter work. In addition, people aged 60 to 64 do not have to adjust to other work if their skills are not highly marketable. The rules also specify that applicants with at least 35 years of arduous, unskilled physical labor and marginal education do not have to adjust to other work. Among older applicants, the net effects of these rules are (1) considerable variation in allowance rates across occupations and, (2) in general, a higher allowance

[11]The considerable gender difference in allowance rates among DI-only applicants that occurred in some occupational categories is, in part, attributable to differences in the other factors we analyzed. In addition, the within-category differences in allowance rates may also reflect occupational differences between women and men that we were not able to control for in our analysis.

rate among men in occupations that entail medium and heavy levels of physical work.[12]

In contrast, SSA recognizes that, under age 55, age does not as severely affect someone's ability to adjust to new types of work. Without the leniency shown older applicants, various occupations did not differ much in the proportion of younger applicants allowed benefits as a result of decisions at steps four and five (see table 4).[13]

Further evidence that SSA rules play a role in producing the gender difference in allowance rates comes from the correlation between the size of the gender difference across age groups and changes in SSA rules. Specifically, the gender difference in allowance rates increases as SSA rules for doing other work become more lenient. As shown in table 1, the gender difference emerges at age 50, increases in size at about age 55, and, among concurrent applicants, increases even more by age 60. SSA rules specify that, from age 50 to 54, age may seriously affect one's ability to adjust to a significant number of jobs; but at 55, age significantly affects someone's ability to adjust to any new work. For people aged 60 to 64, the additional consideration of skill marketability comes into play.

Imprecise Measures of Occupation Could Account for Unexplained Difference

Our inability to explain about one-third of the gender difference in allowance rates could be attributable to a lack of precision in the data for our analyses or to a lack of data on all relevant factors. Regarding the precision of our analyses, we are particularly concerned about the data on occupation. Within broad occupational categories, the jobs of women and men may differ considerably. Data on the typical jobs of women and men indicate, for example, that, within at least some broad categories, men have more physically strenuous jobs. Because physically strenuous jobs have higher allowance rates, we may have been able to better explain the gender difference in allowance rates had we been able to better account for differences in the physical exertion of jobs.

[12]In step four, DDS officials decide whether applicants can perform the type of work done in the past. Regardless of age, women are more likely than men to be denied benefits at step four (see app. III, table III.7). In step five, officials decide whether applicants who cannot do their past work can do other work given their age, education, and work experience. As a result of SSA rules, among applicants aged 55 to 64, most older applicants who are considered at step five, most of whom are men, are found unable to do other work and are allowed benefits (see app. III, table III.8).

[13]As with older applicants, at step four, among applicants under 55, women are more likely to be denied benefits (see app. III, table III.7). At step five, the majority of applicants under 55 are found able to do other work and denied benefits (see app. III, table III.8). The net effect of decisions at these two steps is relatively little difference in allowance rates across occupations.

The results of our analyses support that, with a more precise measure of occupation, we may have been able to better explain the gender difference in step four and five decisions. In an analysis of applicants in a subset of states for which we had more detailed occupational information,[14] we found that, across subcategories of occupations, the greater the proportion of physically strenuous jobs in a subcategory, the more the allowance rate for men exceeded that for women.

Analysis of SSA Review Results Showed No Indication of Bias in Decisions for Older Women

Other indicators[15] of possible bias in the initial decisions for older women—SSA's QA accuracy rates, ALJ reversal rates, and benefit status 4 years after the initial denial—showed little evidence of possible bias. SSA's QA accuracy rates[16] for both allowances and denials were comparable for women and men (see app. III, table III.9). Among DI-only applicants aged 55 to 64, the accuracy rate for allowance decisions was 95 percent for women and 96 percent for men. For denial decisions, the accuracy rate was 91 percent for women and 90 percent for men.

The rates at which ALJs reversed initial decisions were also comparable for older women and men (see app. III, table III.10 and table III.11). Among DI-only applicants aged 55 to 64, 30 percent of women compared to 33 percent of men appealed their initial denials. For women, ALJs reversed the initial denial in 76 percent of the cases compared to 79 percent for men.

As a result of an appeal or reapplication, older women received benefits at a lower rate than older men 4 years after the initial denial (see app. III, table III.12).[17] A higher rate of benefits among women 4 years after denial would have suggested more errors and possible bias in the initial decisions for women. Instead, among applicants aged 55 through 64 in 1988 and still

[14]State DDSs did not report uniform occupational data. Some states reported only broad occupational categories while others reported more specific occupational divisions in the broad categories (see app. II).

[15]"Indicators" refers to the results of SSA internal reviews or internally generated data. We were not able to secure external data with which to assess bias within these internal reporting systems.

[16]In assessing the accuracy of a determination, SSA defines an error as a deficiency in either medical or vocational information that results in insufficient support for the disability decision (documentation error) or the presence of documentation that supports an opposite decision from that rendered by the DDS (decision error).

[17]As might have been expected, men had a higher mortality rate than women in all age groups (see app. III, table III.13).

under 65[18] in 1992, 44 percent of women received benefits compared with 52 percent of men.

Agency Comments

In its March 25, 1994, comments on our draft report, SSA generally agreed with our conclusion that, while some gender difference exists in initial disability decisions, the indicators we examined showed no evidence of bias. However, SSA suggested minor revisions to the report, which we have incorporated as appropriate. SSA also made several technical comments, which we address in appendix IV.

Our work was performed between January 1993 and February 1994, in accordance with generally accepted government auditing standards, with the exception that we did not analyze SSA's data for reliability or accuracy.

We are providing copies of this report to the Secretary of Health and Human Services (HHS), the Commissioner of SSA, and other HHS officials. We will also make copies available to other interested parties upon request. If you have questions about this report, please call me on (202) 512-7215. Other major contributors to this report are included in appendix V.

Sincerely yours,

Jane L. Ross

Jane L. Ross
Associate Director,
Income Security Issues

[18]Only people under 65 are eligible to receive DI benefits.

Contents

Figures

Abbreviations

ALJ	administrative law judge
DDS	disability determination service
DI	Social Security Disability Insurance
DOT	Dictionary of Occupational Titles
HHS	Department of Health and Human Services
MBR	Master Beneficiary Record
OHA	Office of Hearings and Appeals
QA	quality assurance
RFC	residual functional capacity
SGA	substantial gainful activity
SSA	Social Security Administration
SSI	Supplemental Security Income

Five-Step Sequential Evaluation Process

All applications for Disability Insurance and Social Security Income benefits proceed through a five-step evaluation, referred to as the sequential evaluation process (see fig. 1). Applications continue through the five steps until a determination of disability or no disability is reached.

In the first step, Social Security Administration field office personnel determine if applicants are currently engaged in substantial gainful activity (SGA).[1] If the applicants' work meets the definition of SGA, they are not considered disabled, regardless of medical condition, and are denied benefits.

If an applicant is found not to be engaged in SGA, the SSA field office forwards the application to a state disability determination service for processing through the remaining four steps of the sequential evaluation process. In step two, a DDS examiner determines whether the applicant has an impairment or combination of impairments that is severe and could be expected to last at least 12 months, the duration requirement in the disability definition.

The DDS examiner works with a physician or psychologist to collect all necessary medical evidence, either from those who have treated the applicant or, if that information is insufficient, from an examination conducted by an independent source. Once all medical evidence has been collected, if the record shows that the applicant's impairment does not meet the standard for a severe impairment, the examiner denies benefits.

If the applicant is not denied at step two, the DDS examiner/medical consultant proceeds in step three to determine if the applicant's impairment meets the requirements on SSA's Listing of Impairments or if the severity of the applicant's impairment is medically equivalent to the SSA listing.[2] If an applicant's impairment corresponds to a condition on the listing, or if the impairment is similar enough to be medically equivalent, the examiner allows benefits. If the applicant's condition does not meet or equal the requirements in the listing, the evaluation proceeds to step four.

The final two steps of the sequential evaluation process are designed to determine whether an applicant has vocational limitations that, when combined with the medical impairment(s), prevent the applicant from working. In step four, the DDS examiner uses a physician's assessment of

[1]Regulations currently define SGA as monthly earnings of more than $500 or more.

[2]The listings contain strict medical criteria that identify impairments considered severe enough, in and of themselves, to prevent any gainful activity.

the applicant's residual functional capacity (RFC) to determine whether the applicant's former type of work could still be performed. For mental impairments, an RFC is generally expressed in psychological terms. For physical impairments, an RFC is expressed in terms of the applicant's ability to perform certain physical activities, such as walking, lifting, sitting, and standing. If the examiner finds that the applicant can perform work done in the past, the examiner denies benefits.

In the fifth and last step, based on the RFC assessment, the DDS examiner classifies the applicant's level of exertion (for example, whether the applicant can perform light, medium, or heavy work). The DDS examiner determines if applicants who cannot perform work done in the past can do other work that exists in sufficient amounts in the national economy.[3] Using SSA guidelines, the examiner/physician team considers the applicant's age, education, vocational skills, and RFC assessment to determine what other work, if any, the applicant can perform. If the DDS examiner concludes that the applicant can perform work that exists in the national economy, the examiner will deny benefits.

During the disability determination process, the DDS examiner can deny benefits for reasons relating to insufficient documentation or to lack of cooperation by the applicant. These reasons include an applicant's failure to (1) provide medical or vocational evidence deemed necessary for a determination by the examiner, (2) submit to a consultative examination that the examiner believes is necessary to provide evidence, or (3) follow a prescribed treatment for an impairment. Benefits will also be denied if the applicant asks the DDS examiner to discontinue processing the case.

[3]By definition, work in the national economy must be available in significant amounts in the region where the applicant lives or in several regions of the country. It is inconsequential whether (1) such work exists in the applicant's immediate area, (2) job vacancies exist, or (3) the applicant would actually be hired for the position.

Scope and Methodology

This appendix describes the (1) scope of our analyses, (2) databases used in our analyses and other sources of information, (3) sampling errors for data obtained from the Social Security Administration's Quality Assurance reviews, and (4) statistical analyses.

Scope

We analyzed data on initial and administrative law judge appeals decisions for women and men for whom disability determination services rendered initial decisions in calendar year 1988. We chose applications initially decided in 1988 because, according to SSA, the data for that year are complete, and most appeals would have been resolved by the time of our study. Also, we had developed a database for 1988 applicants in an earlier study of racial difference in allowance rates.[1]

We limited our study to workers aged 25 to 64 who applied for benefits on the basis of their own work records.[2] We included applicants applying just for DI benefits as well as those concurrently applying for Disability Insurance and Social Security Income benefits. About 270,000 women and 450,000 men met our criteria for inclusion in the study (see table II.1).

Table II.1: Women and Men Whose Applications Were Decided by DDSs, by Decision Level (1988)

	DI Only		Concurrent		Total	
Decision level	**Males**	**Females**	**Males**	**Females**	**Males**	**Females**
Initial DDS	232,657	135,265	220,525	137,680	453,182	272,945
ALJ appeals	49,435	29,321	47,039	28,616	96,474	57,937

Databases and Information Sources

We relied on SSA databases and publications to obtain information on 1988 applicants, their initial and appeal decisions, and their benefit status after denial (see table II.2). We also relied on SSA data to calculate the rate of DI benefits in the insured population. We did not analyze SSA data for reliability or accuracy.

[1] Racial Difference in Disability Decisions Warrants Further Investigation (GAO/HRD-92-56, Apr. 21, 1992).

[2] Spouses and dependent children of disabled workers can also apply for disability benefits, but they are considered auxiliary beneficiaries and are allowed or denied benefits on the basis of the primary worker's disability.

Table II.2: SSA Data Sources

Information	Database or publication
Initial disability decision and applicant characteristics	831 file
Applicants' race, sex, date of birth, and benefit status in 1992	Master Beneficiary Record (MBR)
Accuracy ratings and impairment severity	Quality Assurance Data Base (QA)
ALJ decisions	Office of Hearings and Appeals (OHA) case control system
Number in the insured population	SSA
Number of DI beneficiaries	1989 Annual Statistical Supplement

Our primary source of information on applicant characteristics and DDS initial decisions was SSA's 831 file, which consists of data entered from forms that record DDS decisions. Because of problems in the coding of occupations, we excluded nine states and the District of Columbia from our universe of applicants in our analysis of occupation.[3] About 80 percent of all applicants in our analysis of occupations lived in the states we used.

To obtain information on the accuracy of DDS decisions and impairment severity, we matched the 831 file with SSA's Quality Assurance file for fiscal year 1988, which contained ratings obtained on a nationally representative sample of cases in the first 9 months of 1988.[4] To obtain information on ALJ appeals, we matched records from the 831 file for applicants initially denied benefits with the OHA case control system, which contains information on filings and appeals at the ALJ level. To obtain information on the benefit status of denied applicants, we matched records from the 831 file with the October 1992 Master Beneficiary Record.

SSA provided data on the populations of women and men insured under Social Security in 1988. To determine the number of women and men receiving DI benefits in 1988, we used information from SSA's Annual Statistical Supplement.

Sampling Errors

Data obtained from the QA database were based on samples rather than the universe of cases. The reported estimates, therefore, have sampling errors associated with them. A sampling error is a variation that occurs by chance because a sample was surveyed rather than the entire population.

[3]Excluded states were Florida, Massachusetts, Missouri, New Jersey, North Dakota, Oregon, Pennsylvania, Rhode Island, and Wyoming.

[4]Because the QA file contains fiscal year data and the 831 file calendar year data, we obtained QA data from January through September 1988 when we matched the two files.

The size of the sampling error reflects the precision of the estimate—the smaller the sampling error, the more precise the estimate.

Sampling errors for the QA estimates were calculated at the 95-percent confidence level. This means that the chances are about 95 out of 100 that the actual percentage being estimated falls within the range defined by the estimate, plus or minus the sampling error. For example, the QA estimate that 96.2 percent of allowance decisions for DI-only males was accurate has a sampling error of .8. This means that a 95-percent chance exists that the actual percentage falls between 95.4 percent and 97.0 percent. Sampling errors appear next to the estimated percentages in appendix III, table III.3 and table III.9.

Statistical Analyses

We used logit regression, a multivariate analysis technique, to examine the extent to which the gender difference among older applicants could be statistically attributed to type of impairment and applicant's age, education, geographic location, occupation, race, and years in occupation.[5] It should be noted that there was no independent measure for controlling for severity of impairment in our analysis.[6] However, some effects of severity are indirectly accounted for in our models that include impairment type, a factor that is associated with severity. Furthermore, in addition to conducting analyses based on all applicants, we conducted analyses based on only those applicants classified as severely impaired by DDSs. This allowed us to examine whether the gender difference persisted after excluding cases that DDSs considered nonsevere. In addition, because the gender difference in allowance rates was largest for decisions made at steps four and five of the sequential evaluation process, we conducted analyses based just on applicants who were considered at those steps.

Using logit regression, we developed separate formulas for women and men to predict the probability of an allowance based on applicants' characteristics. The formula for each gender group reflects how applicants with certain characteristics were treated in DDS allowance decisions.

[5]It was necessary to control for these factors because, regardless of gender, applicants are less likely to be allowed benefits if they have certain impairments, moderate amounts of education, are from the South, or have certain occupations or have been in their occupations for a short time. To the extent that applicants who have characteristics associated with low allowance rates make up a larger proportion of female than male applicants, those factors can be said to explain the gender difference.

[6]Although we had QA physicians' ratings of severity, those data are obtained on samples, and we did not have enough cases to include those ratings in our analysis.

Our general approach was, first, to predict (1) the female probability of allowance using the female formula and females' average characteristics and (2) the male probability of allowance using the male formula and males' average characteristics.[7] These probabilities are similar to the allowance rates for women and men; but, because the probabilities are predicted using average characteristics, they may deviate somewhat from the observed allowance rates. We also predicted the female probability of allowance using the male formula and females' average characteristics. This probability reflects what the probability of allowance would have been for women had they been treated the same as men in the allowance decision.

We then compared the female probability predicted using the male formula with (1) the female probability predicted using the female formula and (2) the male probability predicted using the male formula. To the extent the female probability predicted using the male formula departs from the female probability predicted using the female formula, we can conclude that (1) the two formulas reflect different treatment of females and males and (2) the difference between females and males cannot be explained by differences in characteristics. To the extent the female probability predicted using the male formula departs from the male probability predicted using the male formula, we can conclude that the difference between females and males can be explained by differences in characteristics.

For example, for DI-only applicants aged 55 to 64, the probability of allowance for (1) males using the male formula was .56 (row 1 of table II.3) and (2) females using the female formula was .41. The total gender difference in probabilities, therefore, is .56 minus .41, or 15 points. The probability of allowance for females using the male formula was .48. The 7-point difference between .48 and .41, the probabilities predicted for females using the male and female formulas, respectively, cannot be explained by differences in characteristics. However, we can conclude that the difference of 8 points between .48 and .56, the probabilities predicted for females and males using the male formula is explained by differences in characteristics. Eight points of the 15-point difference, therefore, or about 53 percent of the gender difference in allowance rates among DI-only applicants can be explained by applicants' characteristics.

[7]For the general approach used in the analysis, see R.L. Oaxaca, "Male-Female Wage Differentials in Urban Labor Markets," International Economic Review, 14 (1973), pp. 693-709.

Table II.3: Results of Logit Regression Analysis for Applicants Aged 55 to 64

	Probability Allowance			Difference			
Base	Males	Females	Females[a]	Total	Explained	Not explained	Percent explained
DI only							
All applicants	.56	.48	.41	**.15**	.08	.07	53
Passed severity screen	.71	.65	.60	**.11**	.06	.05	55
Considered at step four	.39	.31	.25	**.14**	.08	.06	57
Concurrents							
All applicants	.41	.33	.29	**.12**	.08	.04	67
Passed severity screen	.63	.54	.50	**.13**	.09	.04	69
Considered at step four	.35	.27	.24	**.11**	.08	.03	73

[a]Probability of allowance for females computed using the formula for males.

We used the results of the logit analysis to arrive at our estimate that about two-thirds of the gender difference in allowance rates could be explained by the factors we analyzed. We estimated how much of the gender difference could be explained by impairment severity by comparing the size of the gender difference (1) when all applicants were considered and (2) after we had eliminated applicants denied for nonsevere impairments. For DI-only applicants, the predicted allowance rate difference was reduced from 15 points to 11 points when we eliminated applicants who had not passed the severity screen. To the extent that applicant characteristics are not correlated with severity of impairment, we can interpret the four-point difference to be the portion of gender difference that can be explained by severity. Since it seems reasonable to assume that some of the applicant characteristics included in our model would be correlated with severity of impairment, we believe that the 4-point difference (27 percent of the 15 points) observed here would represent the maximum portion of the total gender difference that could be explained by severity. We concluded, therefore, that the factors we analyzed explained between 8 and 12 points or from 53 to 80 percent of the 15-point gender difference in the predicted allowance rates among DI-only applicants.

Among concurrent applicants, the gender difference of 12 points did not decrease when we eliminated applicants with nonsevere impairments. We

concluded, therefore, that severity did not account for any of the 12-point difference.

We then used the results of the logit analysis to estimate how much of the gender difference in allowance rates for DI-only applicants and concurrent applicants (see app. III, row 1 of table III.1) could be explained. We estimate that the logit analysis could account for 53 to 80 percent of the 11-point gender difference in the allowance rates for DI-only applicants and 67 percent of the 7-point gender difference in the allowance rates for concurrent applicants.

Supplementary Tables

Table III.1: DI-Only and Concurrent Allowance Rates in 1988 by Demographic Characteristics, Impairment Type, and Gender, Ages 55 to 64 (1988)

	DI Only			Concurrent		
Characteristic	**Males**	**Females**	**Difference**	**Males**	**Females**	**Difference**
All applicants	.54	.43	.11	.42	.35	.07
Education						
Less than 9th	.53	.37	.16	.42	.34	.08
9th to 11th	.53	.40	.13	.43	.35	.08
12th	.54	.45	.09	.43	.36	.07
More than 12th	.55	.49	.06	.42	.37	.05
Race						
White	.55	.43	.12	.43	.36	.07
Black	.50	.39	.11	.42	.34	.08
Other	.39	.40	-.01	.32	.31	.01
Region						
Northeast	.64	.52	.12	.48	.41	.07
South	.52	.40	.12	.44	.34	.10
Midwest	.53	.41	.12	.38	.34	.04
West	.52	.40	.12	.40	.33	.07
Occupation						
Professional, technical, and managerial	.60	.55	.05	.55	.47	.08
Clerical and sales	.47	.39	.08	.37	.29	.08
Service	.49	.37	.12	.36	.30	.06
Agriculture, fishery, forestry and related	.58	.34	.24	.40	.25	.15
Processing	.50	.35	.15	.37	.29	.08
Machine trades	.51	.35	.16	.40	.28	.12
Benchwork	.49	.34	.15	.38	.25	.13
Structural	.50	.35	.15	.40	.30	.10
Miscellaneous[a]	.48	.38	.10	.38	.29	.09
Unknown	.58	.47	.11	.49	.46	.03
Impairment type						
Cardiovascular disorders						
Hypertension	.07	.03	.04	.05	.06	-.01
Ischemic heart	.53	.47	.06	.55	.50	.05
Other	.61	.46	.15	.56	.44	.12
Endocrine disorders						
Obesity	.63	.63	.00	.45	.57	-.12
Other	.28	.18	.10	.19	.14	.05
Mental disorders	.63	.57	.06	.53	.54	-.01

(continued)

Characteristic	DI Only			Concurrent		
	Males	Females	Difference	Males	Females	Difference
Musculoskeletal disorders						
Fractures	.38	.26	.12	.23	.20	.03
Other	.37	.26	.11	.27	.24	.03
Neoplasms						
High allowance rate	.94	.93	.01	.91	.91	.00
Other	.75	.73	.02	.63	.58	.05
Neorological and sensory disorders	.58	.50	.08	.41	.39	.02
Respiratory disorders						
Chronic airway obstruction	.68	.72	-.04	.55	.64	-.09
Other	.29	.22	.07	.23	.20	.03
Other disorders	.49	.32	.11	.32	.23	.09
Years in occupation						
Less than 5	.43	.34	.09	.34	.26	.08
5 to 9	.49	.39	.10	.40	.32	.08
10 to 14	.52	.42	.10	.42	.34	.08
15 to 24	.56	.47	.09	.46	.40	.06
25 to 34	.55	.47	.08	.45	.39	.06
35 and over	.61	.55	.06	.51	.40	.11

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

[a]Within characteristic, percents may not add to 100 due to rounding.

[b]Miscellaneous occupations include occupations in (1) packaging and materials handling, (2) mineral extraction, (3) production and distribution of utilities, (4) graphic art, (5) entertainment, and (6) transportation.

Table III.2: Proportion Denied for Not Severe Impairments by Impairment Type and Gender for DI-Only and Concurrent Applicants, Ages 55 to 64 (1988)

	DI Only			Concurrent		
Impairment type	**Males**	**Females**	**Difference**	**Males**	**Females**	**Difference**
Cardiovascular disorders						
Hypertension	.45	.54	-.09	.47	.53	-.06
Ischemic heart	.06	.07	-.01	.08	.09	-.01
Other	.10	.17	-.07	.13	.19	-.06
Endocrine disorders						
Obesity	.08	.12	-.04	.17	.14	.03
Other	.29	.36	-.07	.37	.45	.08
Mental disorders	.13	.15	-.02	.14	.17	-.03
Musculoskeletal disorders						
Fractures	.37	.45	-.08	.54	.53	.01
Other	.20	.24	-.04	.27	.29	-.02
Neoplasms						
High allowance rate	.03	.04	-.01	.07	.05	.02
Other	.14	.15	-.01	.26	.30	-.04
Neurological and sensory disorders	.13	.18	-.05	.22	.24	-.02
Respiratory disorders						
Chronic airway obstruction	.09	.06	.03	.16	.11	.05
Other	.28	.26	.02	.31	.31	.00
Other disorders	.23	.35	-.12	.37	.43	-.06
All impairments	.15	.21	-.06	.24	.28	-.04

Notes: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Nonsevere impairments refers to applicants denied for (1) nonsevere impairments and (2) impairments expected to last less than 12 months.

Table III.3: Quality Assurance (QA) Severity Ratings and Sampling Errors by Age and Gender for DI-Only and Concurrent Applicants (1988) (In percent)

	Age					
	25-54			55-64		
Severity rating	Males	Females	Difference	Males	Females	Difference
DI-only applicants						
Nonsevere[a]	17 (2)[b]	21 (2)	- 4	12 (1)	18 (2)	- 6
Moderate	37 (2)	31 (2)	6	32 (2)	33 (3)	- 1
Moderately severe	13 (1)	12 (2)	1	15 (2)	11 (2)	4
Met listing	26 (2)	27 (2)	- 1	34 (2)	29 (3)	5
Insufficient evidence	6 (1)	7 (1)	- 1	6 (1)	6 (2)	0
Concurrent applicants						
Nonsevere	23 (2)	26 (2)	- 3	18 (3)	25 (4)	- 7
Moderate	33 (2)	33 (2)	0	33 (3)	35 (4)	- 2
Moderately severe	11 (1)	10 (2)	1	12 (2)	11 (3)	1
Metlisting	22 (2)	19 (2)	3	26 (3)	19 (3)	7
Insufficient evidence	8 (1)	8 (2)	0	9 (2)	9 (3)	0

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

[a]Includes applicants rated as having (1) no impairment, (2) a disability of low severity, or (3) an impairment that is expected to last less than 12 months.

[b]Sampling errors at the 95-percent confidence level are in parentheses (see app. II).

Table III.4: Distribution Across Demographic Characteristics and Impairment Type for DI-Only and Concurrent Applicants by Gender, Ages 55 to 64 (1988) (In percent)

	DI Only			Concurrent		
Characteristics	Males	Females	Difference	Males	Females	Difference
Education (in grade)[a]						
Less than 9th	27	18	9	50	38	12
9th to 11th	22	23	- 1	22	30	- 8
12th	36	45	- 9	21	27	- 6
More than 12th	15	13	2	7	6	1
Race						
White	85	79	6	67	62	5
Black	8	11	- 3	24	28	- 4
Other	7	10	- 3	8	10	- 2
Region						
Northeast	22	22	0	14	15	- 1
South	34	35	- 1	50	50	0

(continued)

Characteristics	DI Only			Concurrent		
	Males	Females	Difference	Males	Females	Difference
Midwest	27	26	1	19	19	0
West	17	17	0	17	17	0
Occupation						
Professional, technical, and managerial	23	17	6	13	14	- 1
Clerical and sales	9	26	- 17	5	12	- 7
Service	13	27	- 14	20	40	- 20
Agricultural, fishery, forestry and related	4	1	3	8	2	6
Processing	6	4	2	6	4	2
Machine trades	9	5	4	8	4	4
Benchwork	5	7	- 2	4	6	- 2
Structural	13	1	12	17	1	16
Miscellaneous[b]	11	2	9	13	2	11
Unknown	7	10	- 3	5	14	- 9
Impairments						
Cardiovascular disorders						
Hypertension	2	3	- 1	4	7	- 3
Ischemic heart	14	6	8	9	5	4
Other	15	10	5	14	11	3
Endocrine disorders						
Obesity	0	2	- 2	1	3	- 2
Other	4	5	- 1	6	8	- 2
Mental disorders	6	7	- 1	9	9	0
Musculoskeletal disorders						
Fractures	2	3	- 1	3	2	1
Other	22	30	- 8	21	27	- 6
Neoplasms						
High allowance rate	8	5	3	5	2	3
Other	7	10	- 3	4	5	- 1
Neurological and sensory disorders	6	7	- 1	6	6	0
Respiratory disorders						
Chronic airway obstruction	6	5	1	8	5	3
Other	2	2	0	2	2	0
Other disorders	7	7	0	9	7	2
Years in occupation						
Less than 5	8	12	- 4	15	21	- 6
5 to 9	12	21	- 9	17	25	- 8
10 to 14	14	22	- 8	17	21	- 4
15 to 24	35	33	2	31	24	7

(continued)

Characteristics	DI Only			Concurrent		
	Males	Females	Difference	Males	Females	Difference
25 to 34	21	9	12	13	6	7
35 and over	10	3	7	6	2	4

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

[a]Within characteristic, percents may not add to 100 due to rounding.

[b]Miscellaneous occupations include occupations in (1) packaging and materials handling, (2) mineral extraction, (3) production and distribution of utilities, (4) graphic art, (5) entertainment, and (6) transportation.

Table III.5: Proportion of Concurrent Applicants Receiving a Favorable Decision at Various Steps of the Sequential Evaluation Process by Age and Gender (1988)

Step	Age					
	25-54			55-64		
	Males	Females	Difference	Males	Females	Difference
Severity screen (step two)[a]	.70	.70	.00	.76	.71	.05
Medical listing (step three)[b]	.33	.30	.03	.34	.30	.04
Vocational determination (steps four and five)[c]	.10	.12	-.02	.36	.30	.06

Notes: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Base for each step is the number of applicants considered at that step.

[a]Proportion of applicants who passed the severity screen.

[b]Of the applicants considered at step three, proportion allowed benefits at step three.

[c]Of the applicants considered at step four, proportion allowed benefits at step five.

Table III.6: Proportion of Concurrent Applicants Allowed Benefits as a Result of Step Four and Step Five Decisions by Occupation, Age, and Gender (1988)

	Age					
	25-54			55-64		
Occupation	Males	Females	Difference	Males	Females	Difference
Professional, technical, and managerial	.19	.20	-.01	.42	.41	.01
Clerical and sales	.11	.11	.00	.20	.15	.05
Service	.10	.10	.00	.28	.27	.01
Agricultural, fishery, forestry and related	.10	.08	.02	.46	.26	.20
Processing	.08	.07	.01	.36	.24	.12
Machine trades	.08	.08	.00	.35	.23	.12
Benchwork	.09	.09	.00	.33	.18	.15
Structural	.08	.11	-.03	.42	.27	.15
Miscellaneous[a]	.08	.08	.00	.35	.23	.12
Unknown	.18	.17	.01	.51	.66	-.15
All occupations	.10	.12	-.02	.36	.30	.06

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

[a]Miscellaneous occupations include occupations in (1) packaging and materials handling, (2) mineral extraction, (3) production and distribution of utilities, (4) graphic art, (5) entertainment, and (6) transportation.

Table III.7: Denial Rates at Step Four by Occupation, Age, and Gender for DI-Only and Concurrent Applicants (1988)

	Age					
	25-54			55-64		
Occupation	Males	Females	Difference	Males	Females	Difference
DI-only applicants						
Professional, technical, and managerial	.44	.54	-.10	.53	.57	-.04
Clerical and sales	.54	.69	-.15	.66	.74	-.08
Service	.43	.53	-.10	.49	.60	-.11
Agricultural, fishery, forestry and related	.28	.61	-.33	.20	.59	-.39
Processing	.31	.52	-.21	.37	.61	-.24
Machine trades	.29	.52	-.23	.34	.61	-.27
Benchwork	.39	.58	-.19	.42	.66	-.24
Structural	.23	.47	-.24	.26	.54	-.28
Miscellaneous[a]	.35	.53	-.18	.39	.62	-.23
Unknown	.25	.40	-.15	.35	.49	-.14
All occupations	.36	.57	-.21	.42	.63	-.21
Concurrent applicants						
Professional, technical, and managerial	.40	.45	-.05	.44	.43	.01
Clerical sales	.57	.65	-.08	.70	.76	-.06
Service	.54	.57	-.03	.59	.65	-.06
Agriculture, fishery, forest and related	.34	.58	-.24	.34	.64	-.30
Processing	.38	.62	-.24	.41	.68	-.27
Machine trades	.35	.59	-.24	.43	.67	-.24
Benchwork	.42	.63	-.21	.46	.73	-.27
Structural	.28	.49	-.21	.30	.62	-.32
Miscellaneous[a]	.41	.61	-.20	.47	.69	-.22
Unknown	.20	.26	-.06	.28	.19	.09
All occupations	.41	.55	-.14	.45	.59	-.14

Notes: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Base is the number of applicants considered at step four.

[a]Miscellaneous occupations include occupations in (1) packaging and materials handling, (2) mineral extraction, (3) production and distribution of utilities, (4) graphic art, (5) entertainment, and (6) transportation.

Table III.8: Allowance Rates at Step Five by Occupation, Age, and Gender for DI-Only and Concurrent Applicants (1988)

	Age					
	25-54			55-64		
Occupation	Males	Females	Difference	Males	Females	Difference
DI-only applicants						
Professional, technical, and managerial	.31	.38	-.07	.77	.76	.01
Clerical and sales	.28	.32	-.04	.70	.68	.02
Service	.19	.21	-.02	.71	.76	-.05
Agricultural, fishery, forestry and related	.14	.15	-.01	.71	.74	-.03
Processing	.11	.18	-.07	.65	.77	-.12
Machine trades	.13	.19	-.06	.65	.74	-.09
Benchwork	.15	.22	-.07	.66	.72	-.06
Structural	.11	.12	-.01	.62	.59	.03
Miscellaneous[a]	.12	.19	-.07	.68	.76	-.08
Unknown	.24	.26	-.02	.69	.68	.01
All occupations	.17	.26	-.09	.68	.73	-.05
Concurrent applicants						
Professional, technical, and managerial	.32	.36	-.04	.76	.71	.05
Clerical sales	.26	.31	-.05	.64	.61	.03
Service	.21	.23	-.02	.67	.75	-.08
Agriculture, fishery, forest and related	.15	.19	-.04	.68	.72	-.04
Processing	.13	.19	-.06	.62	.75	-.13
Machine trades	.12	.20	-.08	.62	.69	-.07
Benchwork	.16	.25	-.09	.61	.68	-.07
Structural	.11	.21	-.10	.60	.71	-.11
Miscellaneous[a]	.13	.22	-.09	.65	.73	-.08
Unknown	.23	.24	-.01	.71	.81	-.10
All occupations	.18	.26	-.08	.65	.74	-.09

Notes: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Base is the number of applicants considered at step five.

[a]Miscellaneous occupations include (1) packaging and materials handling, (2) mineral extraction, (3) production and distribution of utilities, (4) graphic art, (5) entertainment, and (6) transportation.

Table III.9: Accuracy of 1988 Allowance and Denial Decisions by Age and Gender for DI-Only and Concurrent Applicants (In percent)

	DI Only			Concurrent		
Ages	**Males**	**Females**	**Difference**	**Males**	**Females**	**Difference**
Allowances						
25-44	97.5[a](1.1)	94.0 (2.6)	3.5	95.4 (1.6)	94.7 (2.4)	0.7
45-49	94.5 (3.1)	97.7 (2.6)	- 3.2	96.1 (2.9)	88.7 (6.8)	7.6
50-54	95.9 (2.2)	98.8 (1.5)	- 2.9	94.4 (3.2)	99.3 (1.5)	- 4.9
55-59[a]	96.8 (1.3)	93.8 (2.8)	3.0	93.5 (2.8)	97.3 (2.8)	- 3.8
60-64[a]	95.4 (1.4)	95.1 (2.3)	0.3	98.0 (2.0)	94.0 (5.0)	4.0
All applicants	96.2 (.8)	95.4 (1.2)	- 0.7	95.2 (1.1)	95.2 (1.5)	0.0
Denials						
25-44	93.7 (1.7)	96.4 (1.8)	- 2.7	95.1 (1.2)	90.9 (2.3)	4.2
45-49	93.7 (3.0)	91.3 (4.6)	2.4	96.4 (2.2)	94.2 (3.5)	2.2
50-54	89.6 (3.6)	93.9 (3.3)	- 4.3	92.2 (3.6)	95.0 (3.1)	- 2.8
55-59[b]	91.8 (2.9)	90.1 (3.8)	1.7	89.7 (4.0)	92.5 (4.0)	- 2.8
60-64[b]	89.2 (3.2)	92.3 (3.5)	- 3.1	94.3 (4.0)	91.2 (5.1)	3.1
All applicants	91.9 (1.2)	93.4 (1.4)	- 1.5	94.4 (1.0)	92.3 (1.5)	2.1

Notes: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Sampling errors at the 95-percent confidence level are in parentheses (see app. II).

[a]For ages 55 to 64, percent accuracy for allowances among DI-only applicants was 94.5 (1.8) for females and 96.0 (1.0) for males. Among concurrent applicants, percent accuracy for this age group was 96.1 (2.6) for females and 95.0 (2.0) for males.

[b]For ages 55 to 64, percent accuracy for denials among DI-only applicants was 91.2 (2.6) for females and 90.4 (2.2) for males. Among concurrent applicants, the percent accuracy in this age group was 92.0 (3.2) for females and 91.6 (2.9) for males.

Table III.10: ALJ Appeal Rates by Age and Gender for DI-Only and Concurrent Applicants (1988)

	DI Only			Concurrent		
Ages	**Males**	**Females**	**Difference**	**Males**	**Females**	**Difference**
25-44	.34	.31	.03	.27	.25	.02
45-49	.46	.42	.04	.38	.36	.02
50-54	.46	.43	.03	.39	.35	.04
55-59	.43	.38	.05	.35	.34	.01
60-64	.25	.20	.05	.22	.19	.03
All applicants	.37	.34	.03	.30	.29	.01

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Table III.11: ALJ Reversal Rates by Age and Gender for DI-Only and Concurrent Applicants (1988)

	DI Only			Concurrent		
Ages	Males	Females	Difference	Males	Females	Difference
25-44	.64	.66	-.02	.54	.60	-.06
45-49	.65	.67	-.02	.58	.60	-.02
50-54	.73	.71	.02	.68	.68	.00
55-59	.79	.76	.03	.74	.68	.06
60-64	.80	.77	.03	.73	.76	-.03
All applicants	.71	.71	.00	.60	.64	-.04

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

Table III.12: Proportion of 1988 Denied Applicants Receiving DI and/or SSI Benefits in 1992 by Age and Gender for DI-Only and Concurrent Applicants

	DI Only			Concurrent		
Ages in 1988	Males	Females	Difference	Males	Females	Difference
25-44	.29	.31	-.02	.24	.27	-.03
45-49	.40	.41	-.01	.32	.35	-.03
50-54						
Younger than 55 in 1992	.48	.46	.02	.39	.38	.01
55 and over in 1992	.54	.48	.06	.43	.37	.06
55-64[a]	.52	.44	.08	.42	.34	.08
All applicants	.36	.35	.01	.31	.30	.01

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

[a]Applicants in this age group were 55 to 64 in 1988 and younger than 65 in 1992.

Table III.13: Mortality Rates of 1988 Denied Applicants as of 1992 by Age and Gender for DI-Only and Concurrent Applicants

	DI Only			Concurrent		
Ages in 1988	**Males**	**Females**	**Difference**	**Males**	**Females**	**Difference**
25-44	.03	.02	.01	.04	.02	.02
45-49	.05	.03	.02	.06	.03	.03
50-54						
Younger than 55 in 1992	.06	.03	.03	.07	.04	.03
55 and over in 1992	.08	.04	.04	.08	.04	.04
55-64[a]	.10	.06	.04	.11	.04	.07
All applicants	.08	.04	.04	.07	.04	.03

Note: Concurrent includes only applicants who applied concurrently for DI and SSI benefits.

[a]Applicants in this age group were 55 to 64 in 1988 and younger than 65 in 1992.

Comments From the Social Security Administration

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

THE COMMISSIONER OF SOCIAL SECURITY
BALTIMORE, MARYLAND 21235

MAR 25 1994

Joseph F. Delfico
Director
Income Security Issues
U.S. General Accounting Office
1 Massachusetts Avenue
Room 400 National Guard Building
Washington, D.C. 20548

Dear Mr. Delfico:

Attached is our response to the General Accounting Office draft report, Social Security Disability: Gender Difference in Disability Awards Generally Explained. If we can be of further assistance, please let us know.

Sincerely,

Shirley S. Chater
Commissioner
of Social Security

Enclosure

SOCIAL SECURITY ADMINISTRATION COMMENTS ON THE GENERAL ACCOUNTING OFFICE DRAFT REPORT, "SOCIAL SECURITY DISABILITY: GENDER DIFFERENCE IN DISABILITY AWARDS GENERALLY EXPLAINED", GAO/HEHS-94-94, DATED APRIL 1994

We appreciate the opportunity to comment on the General Accounting Office (GAO) draft report. We are pleased that GAO finds no evidence of bias in entitlement determinations in the disability insurance program among men and women. On pages 6 and 7 of the draft report, GAO notes that while some difference exists in initial disability decisions, the indicators examined by GAO did not show evidence of bias.

Consequently, the letter to Senator Cohen, because it conveys the erroneous impression of bias, should be revised. We suggest that GAO use language similar to, "Under the Social Security Disability Insurance Program, there are differences in allowance rates at which older men and women are allowed benefits. However, the results of our review do not necessarily point to bias in the system".

In addition, during our review of the report, we noted several technical observations that we would like to point out.

See comment 1.

See comment 2.

Although statistical analyses cannot prove or disprove the existence of bias in a decisionmaking process, it can offer some explanation and diminish the overall negative impact of a strictly statistical comparison in allowance rates. The report's statistical analysis does not include variables to measure differences in critical decisions, case to case, many of which may be sex specific. For example, the only measure for severity is the step in the decisionmaking process at which the decision is made--step 4 or 5 of the sequential evaluation. Also, the report groups steps 4 and 5 into one step, even though they are distinctly separate with different emanating ramifications. Step 4 is strictly a denial step. Either a claimant is denied because he or she retains the residual functional capacity (RFC) to perform past relevant work or adjudication proceeds to step 5 because he or she cannot perform past relevant work. Step 5 is the consideration of whether there is other work in the economy that a claimant can perform within his or her RFC and vocational profile. If no jobs exist in significant numbers that the claimant can perform, an allowance ensues. Thus, step 5 can lead to either an allowance or denial.

See comment 3.

Also, both steps 4 and 5 are decided on the basis of RFC. RFC is an individualized assessment of what a claimant can still do despite his or her limitations. It is used to determine the particular type of work a claimant may be able to do despite his or her limitations. Although the report considers exertional RFC levels, i.e., sedentary, light, etc., it does not include specific exertional and nonexertional limitations such as the ability to walk, finger, feel, etc.. The report also does not

address mental functions such as intelligence, ability to socialize, maintain attention and environmental restrictions. The lack of a true and objective RFC measure, in our judgement, precludes a realistic assessment of whether or not the case should have been allowed and raises, in our view, the question whether it is reasonable to assume remaining differentials represent bias. The remaining differential between the sexes may be due to the influence of any of the variables not included in the analysis.

See comment 3.

Also, it appears that the draft report's analysis of step 2 of the sequential evaluation equates durational denials with not severe denials. See figure 1, page 4, and pages 11 and 12. If this is so, GAO may have incorrectly counted--as Table III.2, Appendix III suggests--as not severe denials, cases that were denied based on lack of duration.

See comment 4.

The report's statistical model (Logit regression) indicates that the average characteristics of women were used in the equation for males to generate an estimate of the female allowance rate, conditional on women receiving the same decisionmaking process as men. While the use of the models was appropriate, it is important to note that Logit models are non-linear and employing average characteristics does not provide the correct estimate of the overall female allowance rate. We believe that the proper methodology would involve using the male Logit regression to make an estimate of the probability of allowance for each individual female observation, then averaging the estimated individual probability over all women.

See comment 5.

In addition, the page 21 heading states, "Other Indicators Showed Little Evidence of Bias in Decisions for Older Women." The indicators evaluated actually showed *no* evidence of bias, thus, the heading is misleading.

Now on p. 13.

The following is GAO's comment on the Social Security Administration's letter dated March 25, 1994.

GAO Comment

1.We have revised the text to recognize that we may have been able to explain more of the gender difference in allowance rates had we been able to include additional relevant factors in our analysis (see pp. 12 and 13). However, we believe that the factors we analyzed were adequate for a study of gender differences in allowance rates. In this regard, our analysis included many factors—impairment type, age, education, and work experience—that are central to each disability decision. In addition, in our July 1993 study of racial difference, we found a subset of the factors used in this study to be highly predictive of the racial differences in allowance rates.

Although we agree that an independent or more sensitive measure of severity, obtained through case file review, for example, could have enhanced our analysis, we believe that our use of DDSs' assessments of severity adequately controlled for severity. That assessment is made on a case-by-case basis and after a thorough review of medical evidence.

2.We recognize that different decisions are made at steps four and five. Our report concentrates on the grouping of the two steps, however, because it is the combination of decisions at the two steps that produces the gender difference in allowance rates among older applicants (over and above the gender difference introduced at the step two severity screen).

Older women have a lower allowance rate than older men because (1) women have a higher denial rate at step four (as discussed in footnote 12, page 12) and (2) older applicants receive lenient treatment at step five. Even with a higher denial rate at step four, without the lenient treatment at step five, we would find no gender difference in allowance rates, which is the pattern of results we found among younger applicants. Neither the denial rate at step four nor the allowance rate at step five alone captures the gender difference in allowance rates that we sought to explain.

Because we believe that the decisions at each step are important in understanding the gender difference in allowance rates, we have reported separate information for the two steps in footnotes (see p. 12) and tables in appendix III (see table III.7 and table III.8) in this report.

3.Our report does not conclude that the unexplained difference in allowance rates represents bias. Rather, we have linked the unexplained difference to a possible lack of (1) precision in available data and (2) measures for all relevant factors.

Our analysis was based on the assumption that unexplained differences under certain circumstances would have at least indicated a need for further study to explore for the possibility of bias. More specifically, we believe that had the factors in the analysis not explained at least a majority of the gender difference in allowance rates, further study would have been warranted.

4.For our analysis, we counted as "not severe" both denials based on a lack of illness (those termed nonsevere by SSA) and those based on the illness lasting less than 12 months, the required period of durational disability in SSA's disability definition.

5.Because the logit models are nonlinear, the probability of allowance evaluated at the average characteristics of women does not necessarily equal the average of the estimated individual probabilities for all women. However, as sample sizes become large, according to Slutsky's theorem,[1] the probability evaluated at the average characteristics and the average probability converge. Most of the logit models we estimated are based on large samples of 20,000 observations or more. We believe, therefore, that the large sample convergence applies, and the probabilities we have reported are reasonable estimates of allowance rates for women, given the factors we analyzed.

[1]See P. Schmidt, Econmetrics (New York: Marcel Dekker, Inc., 1976), p. 250.

Major Contributors to This Report

Robert L. MacLafferty, Assistant Director, (415) 904-2123
Susan E. Arnold, Evaluator-in-Charge
Elizabeth Olivarez
Terri Paynter
Vannessa Taylor

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