Disability Insurance:

Programs and Practice

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I. Introduction

Disability has traditionally been one of the risks covered by government social insurance programs. When carefully defined, this risk -- a worker losing the functional ability to perform his usual occupation due to illness or injury -- is an insurable event. And, an event that can be covered by a public-sector program or private-sector insurance. In recent years, public interest in the design of disability insurance has increased, as expenditures have risen precipitously in countries with aging populations due to poorly structured and overly generous programs. Disability insurance design has also come to the forefront of many countries' policy agendas with the reform of old-age pension schemes and their total or partial privatization.

Broader disability issues, outside of those associated with insurance and cash benefit programs, have also gained in prominence, as advocates have started to demand full civil rights for persons with disabilities throughout the world. One of the key equity issues that has been raised is for the integration and accommodation of persons with disabilities into the labor market, permitting them to lead productive and valued lives. While it is not always the case, the desire of government to reduce cash benefit expenditures should mesh with the rights of persons with disabilities to be self-supporting, since an obvious way to reduce public expenditures is by integrating persons with disabilities into the work force instead of warehousing them.

The purpose of this paper is to review and assess our current understanding of disability and disability programs as a first step towards establishing best-practice policies for the design of disability insurance programs throughout the world. I begin by reviewing the definition of disability and its relationship to medical diagnosis, impairment, and functional limitation. The next section discusses the worldwide incidence of disability using definitions unrelated to program-specific criteria. Section IV discusses the economic justification for government intervention in the area of income support for the disabled. Section V describes strategies governments have taken to provide cash benefits. Section VI discusses the criteria countries have devised for awarding disability benefits and the procedures used to make a disability determination. In Section VII, comparative data are provided on the size of and trends in country-specific disability programs in terms of recipients, expenditures, and payroll taxes. Section VIII establishes criteria for evaluating system efficiency and reviews recent program reforms. The concluding section draws on the earlier sections to provide initial criteria for program design. The key choices that policymakers face are highlighted and the limits of our knowledge of best practice are delineated.

On the whole, it is my assessment that a smaller program is a better program, in part, by being more affordable for both government and business. A smaller program will also reduce cumulative incentives to discourage employment, reduce program compliance, and lower economic growth. Other non-cash disability programs can then be implemented to encourage and facilitate the employment of persons with disabilities. While stringent program criteria and low replacement rates will have that effect, more pro-active policies need to be pursued, as well. These programs need to be carefully designed, however, to avoid other adverse economic consequences. More research is also needed to identify the characteristics of a best-practice disability determination process that does not award benefits to ineligible workers or deny benefits to eligible workers. Similarly, additional analysis is needed to determine how to structure an effective public/private disability benefit mix and on how to develop a well-functioning private disability insurance system. In general, costs are more likely to be controlled under a private

system. However, private programs may be less able to accommodate a growing disability population over time. These are the issues for today and for the next century as the population ages.

II. Definitions

Because work disability is difficult to define, the policy issues surrounding disability insurance are more complex than those related to other cash benefit programs, including old-age pensions, payments to survivors, and unemployment insurance. In the case of old-age pensions, eligibility is usually related to the attainment of a specific age, years of service, or a combination of the two. Once proof is furnished, no further determination of eligibility is required. Similarly, in the case of survivors' benefits, the causal event is the death of the insured worker. Even unemployment, while more difficult to prove, is related to the event of losing a job. The criteria for awarding disability pensions are not as simple.

Disability may be defined as the loss of ability to perform specific social roles or functions due to an impairment resulting from a medical condition. In the context of government sponsored or mandated programs, the social role defining the disability is the inability to perform work or the reduction in the capacity to work relative to a comparable fully-able worker. The capacity-reducing condition may be either physical or mental. The health condition leading to the disability may be chronic or its treatment may be completed, leaving the individual with an ongoing physical or mental impairment. Neither the medical condition nor the impairment, however, necessarily imply an ongoing work disability. Disability occurs only in cases in which the underlying condition and subsequent impairment prevent the affected individual from performing work that the individual would otherwise be qualified to undertake.

The complexity of this situation lies in difficulty of linking the condition, the impairment, and the disability. For example, consider individuals who have only one kidney or one breast. Each represents an obvious physical impairment. Nonetheless, since the human body can fully function in each case, the impairment itself is unlikely to lead to a work disability. In other words, the impairment has not led to a functional limitation in a major life activity, in this instance, the ability to work. In other cases, identical impairments and functional limitations might have different impacts on an individual's ability to work according to particular occupational requirements. To take Walter Oi's example, "An inability to reach or to lift may be a seriously disabling condition for a lobster fisherman but only a nuisance for a preacher. The latter might not even report such a limitation in a survey."[1]

Further, identical medical conditions could result in different limitations for individuals with similar job skills. For example, the causes of back pain are frequently difficult to diagnose and the intensity of pain is not simple to compare. Consequently, two individuals with similar observable conditions might respond very differently to their impairment if that condition translated into different degrees of pain. One person might be unable to work for eight hours under normal conditions of employment while another would have considerably less difficulty. Further, the ability to work despite impairment is also related to the individual's determination to undertake employment and the employer's willingness to make a reasonable accommodation to the disability.

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[1] Oi (1996).

The issue of accommodation, functional limitation, and work disability are all closely related. One way to consider the underlying factors leading to disablement is to use indicators of functional limitation. Individuals with a work disability are likely to report that they face a major activity limitation, that is one requiring help with routine tasks such as keeping house and shopping (instrumental activities of daily living or IADLs). Individuals with more serious disabilities are likely to require help with personal care (activities of daily living or ADLs). Nonetheless, there are many specific examples of quadriplegics who, while needing personal care, are productively employed in the economy. Through accommodation, their work disability has been overcome.

III. The Incidence of Disability

It should possible to assess the efficacy of any cash benefit program by comparing the pattern of disability payments to the incidence of disabling conditions within the country. However, this is seldom attempted. Without objective criteria, the incidence of disability in a particular country based on measures of program participation may simply indicate more lenient program entitlement. There are two ways to assess the underlying pattern of functional limitation: (i) through a direct evaluation of the incidence of limitations created by specific health conditions, and (ii) through self evaluation. While neither method provides a complete yardstick against which to assess disability, each provides considerable insight into the underlying parameters of disablement.

Disability Life Years. Murray and Lopez published findings from a monumental assessment of the impact of disability around the world using the Global Burden of Disease methodology.[2] This methodology used estimates of the age-sex incidence rates of underlying medical conditions which were mapped into a single disability index for 1990. The index reflects the probability of progressing to a disability, the duration of life lived with the disability, and the approximate life years lived with activity restriction. The estimates were reviewed and revised by experts at several stages.

The methodology focused on three issues: (i) defining disability classes, (ii) separating duration and severity, (iii) mapping diseases through to disabling sequaelae and choosing weights for different classes. The definition of disability is the ability to perform certain activities. Six disability classes were defined that sequentially represented a greater loss of function relative to the previous class. Limited ability was defined as decrease in ability of 50 percent or more (Table 1).

[2] Murray and Lopez (1994a).

Table 1: Definitions of Disability

	Description	Weights
Class 1	Limited ability to perform at least one activity in one of the following areas: recreation, education, procreation or occupation	0.096
Class 2	Limited ability to perform most activities in one of the following areas: recreation, education, procreation, or occupation	0.220
Class 3	Limited ability to perform activities in two or more of the following areas: recreation, education, procreation, or occupation	0.400
Class 4	Limited ability to perform most activities in all of the following areas: recreation, education, procreation, or occupation	0.600
Class 5	Needs assistance with instrumental activities of daily living such as meal preparation, shopping, or housework	0.810
Class 6	Needs assistance with activities of daily living such as eating, personal hygiene or toilet use	0.920

Source: Murray (1994)

The resulting estimates indicate substantial differences in years of life with disability per thousand persons (YLD) across regions. The lowest overall YLD rate, 56 years/thousand, is found in the established market economies. Rates for former socialist economies, at 67 years/thousand, are somewhat higher and those for Latin America and the Caribbean, at 101 years/thousand, are higher still. In these regions, formal public or mandated disability programs are more prevalent. Disability rates in other areas of the world range between those of the former socialist economies and Latin America. Only the rate for sub-Saharan Africa is higher than that of Latin America.

Certain patterns are constant across regions. For example, age is strongly related to disability with YLD rates uniformly higher among older age cohorts in all regions of the world. The YLD rates for men age 60 and over are more than four times higher than those for men age 15-44 years in established market economies, former socialist economies, China, and Latin America and the Caribbean.[3] YLD rates for elderly men are 1.8 times as high as those for younger men in sub-Saharan Africa. A useful comparison with which to evaluate the relative expenditures of government disability programs across different age groups would be using the relative disability rates for younger working-age men, those age 15-44 years, and for older working-age men, those age 45-59 years. These differences are striking, although not as great as those found between the youngest and oldest age groups. In most regions of the world, older persons of working age have YLD rates twice as high as younger working-age individuals. These relative differences are smaller in areas of the world in which YLD rates are higher among younger working-age groups.

[3] The ratio of male to female YLD rates indicates higher male rates for most age groups in most areas of the world with the exception of women of child-bearing age (15-44). Disability rates for men are higher only in the formerly socialist economies and in Latin America and the Caribbean. Disability rates for men and women of childbearing age are quite similar in the established market economies, they are strikingly dissimilar in other areas of the world.

YLD rates differ strongly by cause across regions (Table 2). For example, while communicable disease rates are roughly similar in the established market economies and in the former socialist economies, they are strikingly higher in other regions of the world. These rates range from 5 years/thousand in the established market economies to more than ten times as high, at 58 years/thousand, in sub-Saharan Africa. YLD rates arising from non-communicable diseases are higher in former socialist economies than they are in the established market economies. The rates found in the former socialist economies are similar to those found throughout the rest of the world. YLD rates due to injury are lowest in the established market economies and highest in Latin America and the Caribbean and in sub-Saharan Africa.

These findings, which are independent of the type of disability program instituted, suggest that the costs of disability programs with identical provisions and methods of implementation should vary substantially across regions, and, presumably, across countries as well. It will be less expensive to provide universal disability insurance in established market economies than in sub-Saharan Africa. Further, disability programs worldwide can be expected to increase in cost over time with the aging of the population -- the same patterns of aging that have been making old-age pensions more costly. Lastly, if coverage increases in countries with large informal sectors, disability costs are likely to increase as well, if regional differences are indicative of differences in disability rates by income group.

Self-Assessment. Another way to assess disability is by self assessment. While self-assessment data have been questioned due to their subjective nature, they have frequently been used by researchers to assess the health status of the population. They have been found to correlate strongly with other less subjective self-reported indicators of health status such as bed days and assessments of ADLs and IADLs.[4] US survey data on self-assessed disability and labor force participation provide a useful estimate of the potential labor market participation among persons with disabilities for the two reasons. First, the disability program in the US has a more stringent standard of eligibility than most other programs in established market and former socialist economies. To be eligible for the program the applicant must not be able to engage in any substantial gainful activity, in other words, the individual must be 100 percent disabled. Second, since the US is one of established market economies, its underlying YDL rates will tend to be lower than those of other regions.

[4] Andrews (1993).

Table 2: Years of Life with Disability (YLD) per Thousand Persons by Region and Diagnosis

		Establish ed Market Economi es	*Formerly Socialist Economies of Europe*	*Latin America and the Carribean*	*India*	*China*	*Other Asia and Islands*	*Sub-Saharan Africa*	*Middle Eastern Cresce nt*
	Years per thousand persons								
	All Causes--Disease or Inju	56.14	67.37	101.03	108.38	75.67	92.92	132.13	91.05
I.	Communicable, maternal &	5.29	5.36	28.29	29.18	16.99	26.79	57.72	22.20
A.	Infectious and parasitic	2.69	2.07	20.61	15.49	12.90	17.42	37.77	9.27
B.	Respiratory	1.51	1.55	2.00	2.87				
C.	Maternal Conditions	0.67	1.22	2.46	4.71	1.44	3.52	7.67	5.96
D.	Perinatal	0.43	0.52	3.21	6.12	0.82	3.05	8.92	4.53
II.	Non-Communicable	46.61	55.28	54.38	67.36	49.74	55.14	56.04	52.82
A.	Malignant Neoplasms	6.67	6.26	3.45	3.72	2.46	2.61	1.40	2.36
B.	Other Neoplasms								
C.	Diabetes, melititus	0.67	0.41	0.51	0.38	0.15	0.36	0.15	0.51
D.	Nutritional/Endocrine	1.37	1.41	6.98	15.81	4.27	9.04	11.20	7.07
E.	Neuro-psychiatirc	15.71	16.60	16.26	16.21	12.68	14.69	14.93	12.86
F.	Sense Organ	0.10	0.15	0.14	2.70	1.26	1.90	2.64	1.33
G.	Cardiovascular	8.87	12.83	6.42	8.66	8.01	8.20	6.09	8.16
H.	Chronic Respiratory	2.39	2.79	4.06	4.26	7.54	3.13	4.96	3.97
I.	Digestive Sysstem	2.04	2.96	3.10	5.68	2.92	3.30	4.46	4.05
J.	Genito-urinary	1.11	1.37	1.71	2.24	1.56	1.74	2.07	1.90
K.	Skin Disease								
L.	Musculo-skeletal	4.64	3.91	4.63	1.10	4.43	3.82	1.01	1.56
M.	Congenital Abnormalities	1.72	2.07	3.93	4.08	3.31	3.73	5.94	5.54
IIII.	Injuries	4.21	6.73	18.36	11.84	8.94	11.00	18.37	16.03
A.	Unintentional	2.95	4.75	8.80	11.00	7.23	7.73	10.43	10.93
B.	Intentional	1.26	1.98	0.49	0.84	1.71	3.28	4.94	5.10

Definitions: DALY is a disability adjusted life year developed to estimating the burden of disease due to more than 100 causes. Measure of time lived with a disability similar to time lost due to premature mortality.

Source: Based on Murray and Lopez (1994).

Based on self-reported limitations in work and other activities for the US in 1990, 88 percent of the population reported no work limitation, 8 percent reported some limitation in work or other activities, and 4 percent reported that they were unable to work (Table 3).[5] Patterns of employment were analyzed for each group. Among those not reporting a disability, 80 percent had a job. The percentage of persons with work limitations who had a job was somewhat lower, at 75 percent. Seventeen percent of those unable to work due to their limitations

[5] The analysis investigates patterns of work and activity limitation for the working-age population between the ages of 18 and 61. The cutoff points were selected to exclude teenagers, who are likely to be full-time high school students, and persons older than 61, who are eligible for Social Security Old-Age benefits. These excluded groups generally report lower labor force participation rates, confounding the impact of disability with school attendance and normal retirement

actually held a job. Two-thirds of all men reporting that they were unable to work received some type of income transfer payment.

Table 3
Basic Patterns of Disability and Work:
Full-Time and Part-Time Employment

		Working			
Disability Status	Total	Full-time	Part-Time	Total	Not Working
Total	145,349	95,000	16,237	111,236	34,112
Percent	100.00	65.36	11.17	76.53	23.47
SE Percent		0.27	0.17	0.25	0.25
Not Limited	127,946	87,943	14,284	102,227	25,718
Percent	100.00	68.73	11.16	79.90	20.10
SE Percent		0.27	0.18	0.25	0.25
Limited in Work or Other Activities	10,679	6,498	1,452	7,950	2,728
Percent	100.00	60.85	13.60	74.45	25.55
SE Percent		0.79	0.49	0.67	0.67
Unable to Work	6,725	558	501	1,059	5,666
Percent	100.00	8.30	7.45	15.75	84.25
SE Percent		0.55	0.53	0.78	0.78

Source: Andrews (1993)

These data indicate that while persons with severe limitations are unlikely to work, persons with some degree of activity limitation are almost as likely to be employed as persons who have no disability. Thus, activity limitations do not necessarily conflict with active labor market participation and employment. Moreover, persons with some activity limitation are no more likely to be in part-time jobs than fully able workers. Nevertheless, workers with some activity limitation may be earning less than they would in the absence of the limitation. While few studies have estimated the size of the earnings differential between disabled and the fully abled workers, Johnson and Lambrinos[6] attribute 45 percent the estimated wage differential to discrimination.

IV. The Economic Basis for Government Intervention

Disability cash-benefit programs have been established to provide income support for persons with disabilities who are no longer able to work or who would suffer a reduction in their earnings due to their disability. The social imperative for helping this group of is obvious. Few

[6] Johnson and Lambrinos (1985).

would not have compassion for a family in which a disabling sickness or accident resulted in the loss of a breadwinner. Yet in many societies, the support and care of persons with disabilities rests with the family. Further, private voluntary disability insurance can also be an alternative to government programs for those who purchase coverage.

The economic justification for government intervention in providing income support for persons with disaiblities is bolstered by arguments similar to those justifying government involvment in the provision of old-age pensions. The key arguments supporting government intervention in the market place are (i) myopia, (ii) adverse selection, and (iii) moral hazard. Each of these factors has helped to create an imperfect private insurance market. These market imperfections are, in part, similar to those which would justify government intervention in the health care market.

If insurance for disability were available and affordable, some individuals would not choose to purchase a policy if it covered a relatively small risk. A caring society would be forced to face the costs of imprudent behavior through family support or social assistance payments. Thus, the general welfare could be increased through the establishment of mandatory disability coverage for workers.

The market for disability insurance is particularly subject to adverse selection. Those individuals who are more likely to become disabled will be more likely to purchase disability insurance. This includes individuals with existing medical conditions, older persons, and those engaged in dangerous sports or occupations. With the risk pool tilted towards poorer risks, the premiums demanded for disability insurance would no longer reflect the cost to the general population. Hence, those with average or below average expectations of future disability would be even less likely to purchase insurance.

Like the market for health insurance, disability insurance claims are strongly subject to moral hazard. In particular, there are many opportunities to exaggerate a disability claim to meet the criteria set by the insurance company. For example, mental disabilities may be particularly difficult to ascertain. Low back pain is frequently mentioned as a condition which is hard to prove or disprove based on objective medical criteria. Similarly the severity of cardiovascular disease may be difficult to assess. Consequently, private insurance companies would tend to set extremely stringent criteria to prevent fraud. Due to the stringency of these standards, individuals who were limited in their capacity to work would be excluded. Nonetheless, the development of mandatory national standards can level the playing field for the disability determination process.

V. The Design of Disability Income Programs

National disability income programs are most prevalent in OECD countries, in Central and Eastern Europe, the former Soviet Union, and Latin America. The characteristics of these programs vary greatly across countries in terms of the financing mechanisms used and the benefits provided. While this report focuses on cash benefit programs for persons with reduced earnings ability, complementary governmental initiatives may include social services, the provision of durable medical equipment and prostheses, vocational rehabilitation, job training, and job provision.

There are three basic types of government programs providing cash benefits to the disabled: (i) social welfare, (ii) social insurance, and (iii) mandated private insurance. A country can have one or more of these programs. The rationale behind social welfare is to provide a floor of protection to all persons regardless of work status. Such arrangements allow for payments to persons not in the labor market, including homemakers and persons disabled at birth. Social welfare benefits can be income- or means-tested (social assistance) or be provided as a universal benefit regardless of income.

Societies may prefer social insurance social welfare when the income so provided is related to past earnings. In this case, pension benefits are not simply a floor of protection but a means to maintain the standard of living of persons who have lost some or all of their earnings ability. Social insurance schemes may incorporate a greater or lesser degree of redistribution, with lower wage-earners eligible for higher benefits relative to their past wages. This may be accomplished through a two-tier system incorporating a flat-rate benefit with an earnings related pension.

Many Latin American countries have shifted their PAYGO disability programs to private insurers after the enactment of pension reform. National legislation may regulate the amount of the mandatory contribution, the operation of the plans, and the form of the distribution. The actual provision of benefits is done thorough private insurance providers. The advantages to mandatory private disability insurance are twofold. First, the transfer of responsibility to the private sector reduces the size of an inefficient public sector and may control costs by limiting the expansion of entitlement. Second, the privatization of disability insurance may help build a competitive insurance industry and financial sector in countries in which financial intermediaries have traditionally been weak.

Social Welfare. Some OECD countries provide disability benefits through general revenues to the entire population -- workers and non-workers alike. New Zealand income-tests benefits and Australia provides a means-tested flat-rate pension. Recently Kazakhstan, under its pension reform which established a funded system for old-age entitlement, has shifted the responsibility for disability and survivors' benefits from a Soviet-era social insurance system to the provision of flat-rate social allowances for disabled workers financed out of general revenues.

Social Insurance. Most OECD countries offer disability pensions through social insurance -- that is, earmarked payroll taxes (or contributions) paid by employers and employees are used to finance the pensions of eligible workers. Benefit recipiency is closely connected to work and benefit recipiency is not subject to either an income or means test (Table 4). For covered workers meeting the eligibility criteria, it is an entitlement. Many countries in the OECD provide pensions related to earnings offering replacement rates ranging up to 75 percent of pre-disability earnings. Many have formulae including a strong component of solidarity through an first-tier flat benefit. By contrast, Ireland tilts the benefit structure completely towards a solidarity approach providing only a flat rate pension to eligible recipients financed through a payroll tax. Countries with social insurance disability programs may also offer means-tested benefits for persons who do not qualify for pensions based on work experience.

Central and Eastern Europe and the former Soviet Union have traditionally used payroll contributions to fund disability benefits related to years of service and earnings. There is a

significant difference between these schemes and those of the OECD countries, however. The OECD countries tax the income of individuals and maintain individual contribution records. The former socialist countries taxed enterprises based on aggregate payroll. Records for individuals were based on work-book entries. While the system worked well enough in a planned economy, the lack of an identifiable link between contributions and work experience acts as a disincentive for participation in a market economy. For that reason, pension reform in most countries, whether partial or radical, includes the institution of unique personal identification numbers and a centralized record system for contributing workers.

Mandated Private Insurance. Latin America has led the way in reforming financially bankrupt PAYGO pension systems for old-age, survivor, and disability benefits. Poor financial management and changing demographics sparked legislation which shifted much or all of the responsibility for providing old-age pensions to the private sector. Traditional social protection schemes have been transformed, in whole or in part, into mandatory systems of defined contribution pension plans.

In Peru, individuals are provided a choice between the public or private system. The mandatory pension plans are required to provide plan participants with coverage against disability and survivorship. Currently, all plans insure their members with approved insurance companies. The law indicates, that after five years of operations, the plans may also self-insure these risks. They would be required to establish a special fund and purchase additional reinsurance. Further, in the future, individual workers will be able to select their insurance companies apart from their pension plan. Separate disability premium revenues are used to top-up participants' pension savings accounts to pay for the disability benefits.

Under Colombia's reform, employees also have the choice between the public and private system. The risk of disability is insured with private insurance companies and is financed using balances in the individual's retirement account plus the value of the recognition bond for those who have switched from the public system. These funds are topped-up as necessary with a lump-sum from premiums. Under Bolivia's new system, contributions for disability and workers compensation are aggregated by each funded pension plan into distinct pooled accounts. These procedures will be in place until insurance companies take over underwriting the coverage.

VI. Program Criteria and Process

Program Eligibility Criteria. The size of a mandated disability program is strongly linked to its eligibility criteria. Except for universal or means tested programs, these criteria are related to the individual's contribution or service history and the definition of disability used under the program. The more stringent the work or contribution requirements, the smaller the beneficiary population; the more stringent the definition of work disability, the smaller the beneficiary population. In selecting policies, each country must determine how to protect persons who have had a disabling event without creating work disincentives.

Contribution Eligibility. In OECD countries, work requirements vary considerably (Table 4). Countries like the Netherlands, Sweden, Denmark and Iceland simply stipulate a residence requirement. Canada requires 2 years of contributions out of the last 3 or 5 out of the last 10. The United States requirement of 20 quarters in each 10 year period is similar. Italy requires 5

years of contributions with 3 within the last 5 years. Norway requires 3 years of insurance preceding disability. Generally speaking, countries with more stringent requirements will to have fewer disability beneficiaries. Yet this is just one of a number of complex factors that eventually determine the size of the program.

Degree of Disability. Perhaps more important is the definition of disability. The US has one of the most stringent definitions, essentially requiring 100 percent disability. The test applied is that the applicant must be unable to engage in substantial gainful activity-- that is, any annual earnings of more than a token amount at any job in the economy. Great Britain also requires total disability -- that is, the inability to work. In both the US and Britain, there are some gradations in these definitions. In the US, educational and occupational criteria are taken into account for older disabled workers.

Most countries have broader definitions of disability and provide some benefits to workers who have lost some degree of earnings capacity relative to the job they held prior to the disabling event. On the one hand, a narrow definition of disability like that of the US and Great Britain conserves resources because fewer individuals qualify and more cases are likely to be clear-cut. On the other hand, narrow definitions provide less social protection for the working population, as the risk of partial disability leading to lower earnings falls entirely on the individual and is not shared by society. Further, a definition of disability with no gradation penalizes individuals on the borderline or cause evaluators to inappropriately designate borderline cases as fully disabled.

A 50 percent disability test is applied in many OECD countries including Denmark, Germany, Norway, and Sweden. There is considerable variation in Latin America, as well, with Argentina, Colombia, and Mexico providing benefits only for total disability, while Chile, Peru and Uruguay have partial disability provision. Disability programs in Central and Eastern Europe have typically identified three disability categories depending on degree of disability and ranging from the totally disabled needing care to those with only partial disability. Benefits generally vary according to degree.

Some countries, such as the Netherlands and Germany have at one time explicitly considered labor market conditions when awarding disability benefits. In these cases, beneficiary populations would be expected to be higher and subject to greater cyclical fluctuation. Nonetheless, the dependency burdens in Germany and the Netherlands are very different from one another. And available empirical does not point to differences in health status. In the Netherlands, eligibility has been more lenient than elsewhere in the OECD, however, with disability benefits paid to individuals with as little as a 15-25 percent work disability. The high rates of disability in the Netherlands relative to Germany also stem from a more generous benefit formula and a more liberal disability determination process. To reduce the disability rolls to more reasonable levels, 1994 reforms imposed more stringent eligibility standards. In particular, the concept of ‘commensurate employment’ was broadened to include all generally accepted jobs commensurate with the applicant’s residual ability regardless of education or prior work experience. In addition the Dutch added disability reviews once every three years for all but the totally disabled.

Replacement Rates. Disability programs of different countries also differ significantly in terms of the benefits provided (Table 5). Replacement rates -- the ratio of benefits to past wages -- often depend on the degree of disability, with full disability compensated at a higher rate than

partial disability. While effective replacement rates are derived from legislated formulae (Table 4), effective replacement rates represent outcomes based on the application of these formulae to the years of service and earnings accrued by actual beneficiaries. The resulting disability benefits actually paid can be compared to average wages in the economy. On that basis the Netherlands, Sweden, Italy and Spain all have replacement rates of over 70 percent of earnings for the average single wage-earner who is totally disabled. By contrast, countries such as the United States, Japan, the United Kingdom, and Canada have replacement rates of under 30 percent. Replacement rates in Latin American countries with funded pension systems can be quite high as well, at 70 percent of past earnings in Argentina, Bolivia, Peru and Chile. In Colombia, pensioners receive earnings-related benefits equal to 45 to 70 percent of their average salary, depending on the degree of disability and the length of their contribution period. Only Mexico has a replacement rate of 35 percent of average earnings.

Disability Determination Process. Generally, disability is deemed to be the result of a medical condition which has led to a functional limitation and reduction in earnings power. The disability determination process is frequently based on a combination of criteria and assessed by a combination of experts. The determination process differs considerably from country to country with regard to the mix and use of expert skills required. Advice may be provided by medical doctors, program specialists, legal specialists, and vocational specialists in varying degrees.

For example, teams of experts are responsible for disability determinations in the US and the Netherlands, while in the United kingdom, individual adjudication officers are responsible. In Canada, these adjudicators are generally nurses. In Germany, an individual administrator is responsible for the decision but it is based on the medial assessment of a staff physician. In many OECD countries, both medical condition and earnings capacity is assessed. In the former socialist countries, disability was determined irrespective of earnings. Medical condition was the most important determinant. Disability determinations there are made by special panels of medical doctors.

Procedures for compiling evidence of disability also differ across countries. In Canada, Sweden, and the United Kingdom, preference is given to treating sources. In Germany, treating physicians' evidence is often considered less relevant. In Canada and Sweden, additional examinations are rarely called for. In Germany and the United Kingdom, agency doctors are regularly used to conduct examinations. In the US and the Netherlands, such examinations are conducted on a case-by-case basis.

The disability programs in both the Netherlands and the United States are among the best studied in the world. Comparisons are particularly interesting as they have been respectively one of the most stringent and least stringent systems in terms of eligibility.

Table 4
Eligibility Criteria for Disability Benefits

	Minimum incapacity[1] (percent)	Eligibility/contribution requirements[2]	Form of benefits[3]
United States	[4]	1 quarter's coverage for each year since age 21; including 20 quarters in 10-year period prior to disability	Based on average covered earnings since 1950 (or age 21), up to ceiling.[5]
Japan	[6]	Contributions during 2/3 of period betwen age 20 and disability onset	Flat-rate national pension and earnings-related employees' pension, each with dependents' supplements and related class of disability
Germany	50	60 months' contributions, with 36 months in 5 years prior to invalidity	Personal income points * Current Pension Value * (0.67 (occupational pension), 1.0 (general invalidity)[7]
France	67	800 working hours in last 12 months (or equivalent level of contributions)	30 per cent (Group 1), 50 per cent (Group 2) of average earnings over best 10 years' insurance
Italy	67	5 years' contribution, with 3 in last 5 years	2 per cent * insurance years * average earnings over last 5 years (with ceilings)
United Kingdom	[8]	Prior entitlement to sickness benefits	Flat-rate pension, which may be offset by earnings-related addition
Canada[9]	100[4]	Contributions in 2 of last 3 years, or 5 of last 10	Flat-rate portion + 75 per cent of imputed retirement pension
Australia	85	Residence requirement	Flat-rate pension

Note: This information has not been verified by national authorities. It should not be considered official OECD data and is indicative only.
1 Based on risks covered by invalidity sheme and minimum level of disability for work.
2 Usual minimum requirements for general invalidity benefit; disabilities resulting from work accidents may have different (usually more generous) conditions.
3 Asterisk = multiplication sign.
4 Individuals cannot regularly pursue any substantial gainful employment.
5 Excluding up to five years with lowest earnings.
6 Totally disabled and severely disabled only.
7 Those in Group l are considered still capable of gainful employment, those in Group 2 are not.
8 Preceded by entitlement to sickness benefit.
9 Some invalidity benefit provisions in Quebec differ from those listed here.

Table 4
Eligibility Criteria for Disability Benefits (continued)

	Minimum incapacity (percent)	Eligibility/contribution requirements	Form of benefits
Austria	50	60 insurance months in last 120 months (higher for older individuals)	(up to age 50): old-age pension * 1.9 *50-current age)[10]
Belgium	50	6 months, with 120 days worked	65 per cent of lost earnings, if dependents 45 per cent if single without dependents
Denmark	67	Residence requirement	Flat-rate based on degree of disability
Finland	50 [11]	Resident requirement (national pension); no qualifying period for employment pension	National pension: flat-rate; employment pension: imputed old-age pension[12]
Greece	50	15 years' insurance, 600 days in 5 years before invalidity	Imputed old-age pension, adjusted;by degree of invalidity
Iceland	75	Residence requirement	Flat-rate + earnings-related supplement
Ireland	[13]	260 contribution weeks, including 48 weeks paid in year preceding disability	Flat-rate pension, reduced if contribution weeks are less than 48
Luxembourg	[14]	12 months insurance in 3 years prior to disability	Lump-sum per month of insurance plus earnings-related supplement plust special age-related
Mexico	50[15]	150 weeks' contribution	Based on average earnings and length of coverage
Netherlands	25	Residence requirement[16]	Flat-rate scheme and earnings-related scheme

[10] Old-age pension is based on years of insurance times the average earnings in previous 120 insurance months.

[11] No strict limits, in practice 50-60 per cent for national pension; 60 per cent for full (40 per cent partia) employment pension.

[12] Based on 1.5 per cent per year of employment (includes disability of recent average income (maximum 60 per cent).

[13] Unable to insure persons who have received sickness benefits for at least 12 months and whose incapacity is likely to be permanent.

[14] Unable to carry on previous occupation or occupation suited to capacity.

[15] 50 percent reduction in customary earning capacity.

[16] There is also a supplementary system of benefits for employed persons.

Table 4
Eligibility Criteria for Disability Benefits (continued)

	Minimum incapacity (percent)	Eligibility/contribution requirements	Form of benefits
Norway	50	3 years insurance preceding disability (1 year in some cases)	Flat-rate basic pension plus supplement based on 20 years of highest income
Portugal	67	Contributions for 60 months	2.2 per cent per year of contributions (minimum 30 percent) * average earnings over best 5 of last 10 years
Spain	33	Temporary invalidity, exhausted sickness benefits, 180 days' contributions; permanent invalidity (ages 26+); insured l/4 of time from age 20 to occurrence of disability, minimum 5 years	Permanent total invalidity for habitual occupation: 55 per cent of reference wage (75 per cent if over 55); incapacity for any work; l00 per cent of reference wage. Reference wage based on recent earnings
Sweden	50	Residence requirement	Flat-rate basic pension, plus supplement based on actual and imputed pension points
Switzerland	40	1 year's contribution for ordinary pension; complete contribution period for full pension	Earnings-related pension (with minimum and maximum) plus dependents' supplements; also means-tested allowance (e.g. for non-contributors)
Turkey	67	5 year's contributions, 180 days per year or 1 800 days total	Earnings-related pension based on last 5 year's contributions

Source: OECD (1996)

In the US, claimants must first apply for medical benefits at local offices of the Social Security Administration (SSA).[7] Applicants must identify the medical basis for their disability and state how their impairments prevent them from working. Relevant medical records, including those from the applicants treating physicians are submitted. The SSA forwards these claims to the appropriate Disability Determination Service, institutions separate from the SSA and organized on a state-by-state basis. Each claim is assigned to a disability examiner who is a program expert and a medical or psychological consultant. If the medical evidence as evaluated meets or equals the official Listing of Impairments, the applicant is eligible for benefits five months after the initial claim was submitted. Determinations can also be made in the claimant's favor if the conditions are judged to be equivalent to the listings. In the case of older workers, when vocational factors are taken into account, the Medical- Vocational guidelines are used which specify jobs in the national economy the claimant can perform. In theory, this determination does not taken into account labor market conditions, although research has indicated cyclical fluctuations in the disability determination If an applicant is unsatisfied with the initial determination, the decision can be reviewed. After an adverse reconsideration, the applicant can request a hearing before an Social Security Administration administrative law judge. At that time, no new medical evidence may be entered for the case.

In the Netherlands, and most other OECD and former socialist countries, applications for disability pensions are made after the applicant has been on extended sick leave. No mandatory sick leave program exists in the US. In the Netherlands, a worker on sick leave may see his own doctors and a medical examiner who works for his Insurance Association that oversees sick leave and disability. After six-months of sick leave, the Insurance Associations check the worker's capacity for work. After a 12 month period, a disability claim can be filed The degree of disability is determined by the Insurance Association which estimates the applicant's earning capacity expressed as a percentage of pre-disability earnings. (Prior to 1994, a separate agency was responsible for the disability assessment.) Unlike the US, there is strict separation between the applicants' usual medical providers and those who make disability determinations. Teams composed of a medical examiner and an occupational specialist jointly determine the degree of disability. This consists of the medical assessment and, in view of the claimant's medical condition, the residual earnings capacity of the person.

It is apparent that the Netherlands would have a higher rate of disability award than the US given eligibility criteria which include awards for partial disability and, prior to 1994, greater allowance for labor market conditions. Further, replacement rates in the Netherlands are considerably higher. Nonetheless, parallel program issues have been raised in each country to control program costs: (i) how to limit the number of new beneficiaries and (ii) how to get program recipients back to work.

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[7] This section focuses on the primary public disability program in the US. Other government programs include one for federal employees, one for veteran's, and one for miners suffering from black lung disease. Each of these programs has different eligibility criteria and also different administrative practices.

Table 5
Gross Replacement Ratios for Disability Benefits

	Average earnings				2/3 average earnings				Average
	2/3 incapacity		Full Capacity		2/3 incapacity		Full Capacity		
	Single	Couple	Single	Couple	Single	Couple	Single	Couple	
United States	24	24	24	24	36	36	36	36	30
Japan	0	0	27	32	0	0	36	43	17
Germany	37	37	56	56	37	37	56	56	46
France	27	27	41	41	27	27	41	41	34
Italy	42	42	77	77	43	43	77	77	60
United Kingdom	24	36	24	36	36	55	36	55	38
Canada	28	28	28	28	34	34	34	34	31
Australia	0	0	26	26	0	0	39	39	16
Austria	53	53	53	53	53	53	53	53	53
Belgium	45	45	45	45	48	48	48	48	47
Denmark	33	33	37	37	49	49	56	56	44
Finland	47	47	47	47	59	59	59	59	53
Greece	45	47	59	63	45	49	59	65	54
Ireland	23	38	23	38	34	57	34	57	38
Luxembourg	55	55	55	55	63	63	63	63	59
Netherlands	51	51	76	53	58	58	80	80	63
New Zealand	30	50	30	50	45	75	45	75	50
Norway	58	58	64	64	64	64	73	73	65
Portugal	44	48	44	48	44	50	44	50	47
Spain	40	40	73	73	40	40	73	73	56
Sweden	53	57	79	90	57	63	88	100	74
Switzerland	17	22	33	43	21	27	41	54	

Definition: Entitlement often depends on lifetime earnings, or on accumulated pension rights. Where this is the assumptions are as follows the individual is assumed to gain entitlement at 40 years old with contributions record from age 18. Earnings are assumed to increase monotonically, by 5 per cent--- and 2 per cent real each year, reaching the ratio of average earnings given in the table the year before entitlement. Each figure is the average of the case of a single person, and a married person with dependent (but not incapacitated spouse. (if the latter gives rise to an ditional allowance, this is included). The individual has no children. No constant care allowances are included. The final colum gives a simple average of the 16 cases considered.

Unlike the data on unemployment benefits in Table A1, these data have not been reviewed for accuracy by national administrations, and should not be treated as official OECD statistics. Estimates can be highly sensitive to other earning profile assumptions, and do not take into account differences in administrative determination of incapacity. They should be treated as indicative.

Source: *OECD (1996)*

Little is know about is the extent to which differences in the disability determination process lead to different outcomes for similar medical conditions. While it is difficult to differentiate program rules from process, it is likely that objective criteria (such as the role doctors play) and administrative culture (such as the severity or laxity of applying standards) leads to different outcomes. It would also be useful to determine which disability determination processes leads to the most consistent results. US and Dutch evidence suggests that the determination processes do not always lead to the same outcome for similar cases The International Social

Security Agency (ISAA) is coordinating a cross-national study on work incapacity and workforce reintegration for low back pain patients from Denmark, Germany, Israel, the Netherlands, Norway, Sweden, and the United States.[8] The findings from this study should provide greater insights into some of these disability determination issues. More study is needed, however, to ascertain which set of administrative practices ought to be recommended to World Bank to client countries.

Labor Market Assistance. Another way in which OECD disability programs differ is in their policies to encourage persons with disabilities to return to work. While most countries are concerned about integrating persons with disabilities into the labor force, some pension programs work in close tandem with programs such as vocational rehabilitation, while others do not.

Policies to encourage the employment of persons with disabilities include direct job subsidies, vocational rehabilitation, and sheltered workshops. Among the OECD countries, Germany and Sweden that have relatively stronger work incentives built-into their disability programs. In 1991, Sweden spent 0.10 percent of GDP and Germany spent 0.13 percent on vocational rehabilitation. By contrast, the US and the UK spent far less (Table 6). Sweden and the Netherlands both spent over 0.6 percent of GDP on job subsidies in 1991. Nonetheless, from a public expenditure standpoint the success of each of these efforts is questionable, as both countries spent more on cash transfers than Germany.

Table 6
Public Expenditure on Labor Market Measures and Cash Benefits for the Disabled, as a Percentage of GDP, 1991

	Vocational Rehabilitation	Direct Job subsidies	Transfer Benefits
The Netherlands	(a)	0.64	4.6
United States	0.05	(a)	0.7
United Kingdom	0.01	0.02	1.9
Germany	0.13	0.09	2.0
Sweden	0.10	0.68	3.3

a/ Less than 0.01 percent

Source: Aarts and de Jong (1996)

Hiring quotas are also frequently instituted to encourage employment. In the Netherlands, employers face a hiring quota for disabled persons of 3-7 percent of the workforce. In 1991, however, only 8 percent of Dutch enterprises had work forces with more than 3 percent handicapped. In Great Britain, the Disabled Persons Act of 1944 stipulates a hiring quota of at least 3 percent disabled for employers with 20 or more employees. For the past 20 years, the majority of employers have been below that mark. In Germany, the Handicapped Act requires that all employers with more than 15 employees hire one severely disabled person for every 16 jobs (a 6.25 percent quota). In 1990, only 4.5 percent of the workforce was disabled. Only 19

[8] Bloch and Prins (1997).

percent of employers met the legal standard. Thirty-seven percent of employers had no disabled employees. Similar provisions can be found in Central and Eastern Europe. If they were ever effective, they are undoubtedly no longer so as market forces have taken over and the number of disability beneficiaries has increased.

Another route governments have taken to encourage employment is through legislation requiring job accommodation for the disabled. The Dutch Handicapped Workers' Employment Act requires employers to accommodate job demands and working conditions. The employer may be entitled to compensation for those accommodations from government. In Germany, the Handicapped Act authorized government subsidies for employer expenses related to job accommodation. In the United States, the 1990 Americans with Disabilities Act stipulates that employers must provide reasonable accommodation in the work place to enable individuals with disabilities to perform the essential functions of jobs for which they are qualified. Such accommodation is not intended to create undue financial hardship for the employer. Employers must finance such cost on their own with no compensation.

Greater labor force participation for persons with disabilities is increasingly a goal in OECD countries. Effective policy remedies are all the more complex because disability affects both the supply and demand for workers.[9] On the supply side, disabilities can directly affect individual preferences and the demand for leisure. In addition, the consequences of impairment can limit the time available for work and leisure. More time must be allocated to health care or routine daily activities, and consequently, less time is available for other purposes. In the extreme, disabilities shorten lives. Third, disabilities can affect productivity and, through that, wages. Wages influence individual decisions about how much time to spend at work. Consequently, if an individual is facing both lower wages and can receive disability benefits, the likelihood of labor force participation may diminish significantly.

VII. The Size of the Program

Disability Rates. The eligibility standards for disability pension recipiency, the underlying health status of the population, and other government policies, including specific work incentives, will determine the pattern of work disability across countries. The ratio of disability pensioners to the labor force varies considerably by country in OECD countries (Table 7). For the whole population, the 1990 rate for the Netherlands, at 152 per thousand is considerably higher than the rate for any of the other countries. Among those near retirement, age 60-64, Germany's disability rate is far higher than that any of the other countries except the Netherlands. Clearly, the disability income program in Germany provides for early retirement to a greater extent than comparable programs in the United Kingdom or Sweden. By contrast, in Sweden and the United Kingdom, the disability rate is relatively higher among late-career workers age 45-59. US rates are relatively high among younger workers, despite the fact that the eligibility criteria are ostensibly the most stringent.

[9] Oi and Andrews (1991), Oi (1996).

Table 7
OECD Disability Rates by Age, 1990
(Recipients per thousand active labor market participant)

	15-44	45-59	60-64	Total
The Netherlands	62	339	1,987	152
United States	23	72	250	43
United Kingdom	23	119	413	68
Germany	5	75	1,109	55
Sweden	21	116	577	78

Source: Based on Aarts and de Jong (1996a)

Country programs also differ greatly according to the diagnostic medical condition for the disability within and across countries (Table 8). Both the Netherlands and the United States have a higher share of beneficiaries disabled due to mental conditions in welfare-based disability programs than in social insurance programs. In the Netherlands, the rate of mental disability among the young disabled is 63 percent. In the United States, the rate of mental disability among Supplemental Security Program recipients, an income tested program, is 30 percent. These rates contrast markedly with those for employment based insurance programs, in which the mentally disabled make up 28 percent and 23 percent of the disability rolls in the United States and the Netherlands respectively.

Table 8
Disability Recipiency by Condition
(percentage of all program recipients)

	Mental Disorders	Circulatory	Musculo-skeletal
Netherlands-1993			
Private	28	8	34
Public	43	8	22
Early Handicapped	61	1	3
All	29	7	30
Sweden-1994			
New Beneficiaries	19	10	46
United States-1990			
Social Security	23	17	19
Supplemental Security Income	30	9	9

Source: Andrews (1993), Aarts and de Jong (1996b), and Wadensjo and Palmer (1996)

Large differences are found between the rates of disability caused by musculo-skeletal conditions in the US, the Netherlands, and Sweden. Under the Swedish program, 46 percent of the population with disabilities was diagnosed as having disabling musculo-skeletal conditions compared to only 19 percent in the US Social Security program.. While cross-country differences may be a result of the incidence of underlying medical conditions in each of the three countries, this seems unlikely in the case of high-income market economies. Consequently, distributional differences are more likely to stem from differences in eligibility criteria -- that is, the degree of disability required for program eligibility. In addition, such differences may also reflect the standards used in assessing similar underlying conditions. Again, cross-national comparisons of the disability determination process are needed to determine the source of these differences.

Trends in the Disability Rolls Disability program entitlements have increased in many developed market economies in recent years, creating the impetus for disability policies to be revieited. One indicator of program growth is the ratio of disability recipients to the labor force. Rates skyrocketed in the Netherlands growing from 55 per thousand in 1970 to 151 per thousand in 1994 (Table 9). While rates in the US and the UK were considerably lower, they also rose. The only country which maintained some stability in its disability population was Germany.[11]

[11] The analysis was limited to regions in the former West Germany.

Table 9:
OECD Disability Rates, 1970-1994

	1970	1975	1980	1985	1990	1994
The Netherlands	55	84	138	142	152	151
United States	27	42	41	41	43	62
United Kingdom	29	28	31	56	68	
Germany	51	54	59	72	55	54
Sweden	49	67	68	74	78	97

Source: Based on Aarts and de Jong (1996a).

Disability benefit rolls also expanded in Central and Eastern Europe (Table 10). The disability rate per thousand labor force participants in Poland rose from an already high 93 recipients per thousand persons under age 65 in 1990 to 119 per thousand in 1994. In Hungary the rate increased from 70 per thousand in 1990 to 103 per thousand in 1994. The rates posted in Central and Eastern Europe indicate a disability burden that is quite similar to that of the sample of five OECD countries. One important difference between the two groups, however, rests in the definition of the normal retirement age. In the OECD countries it is generally age 65, in the CEE countries it is more likely to be age 55 for women and age 60 for men. Consequently, some of the disability recipients are actually eligible for normal old-age pensions. As recipients over retirement age are not required to receive old-age benefits if they are eligible for disability, a significant fraction of those on the disability rolls are over the normal retirement age. Further, much of the increase in the disability rolls appears to have been one of a number of means to deal with increasing post-transition unemployment. Consequently, the impact of raising retirement ages on the disability rolls is difficult to predict. And, direct comparisons with OECD countries must be made with some caution.[12]

Table 10:
CEE Disability Rates, 1990-1994
(participants per thousand labor force participants)

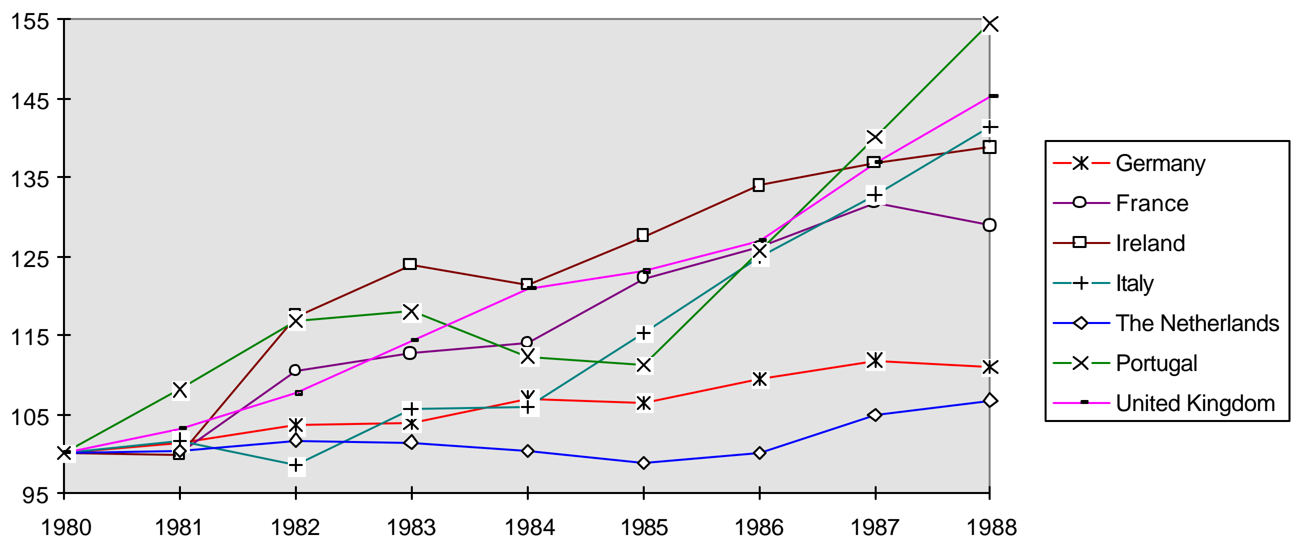
Young Disabled/Labor Force		1990	1991	1992	1993	1994
Bulgaria		35	39	38	41	43
Croatia		51	-	47	50	-
Czech Republic		68	72	76	79	84
Hungary		71	75	84	94	104
Poland		93	-	106	115	119
Slovak Republic	89	85	103	86	87	

Source: World Bank Social Challenges of Transition (SCT) database

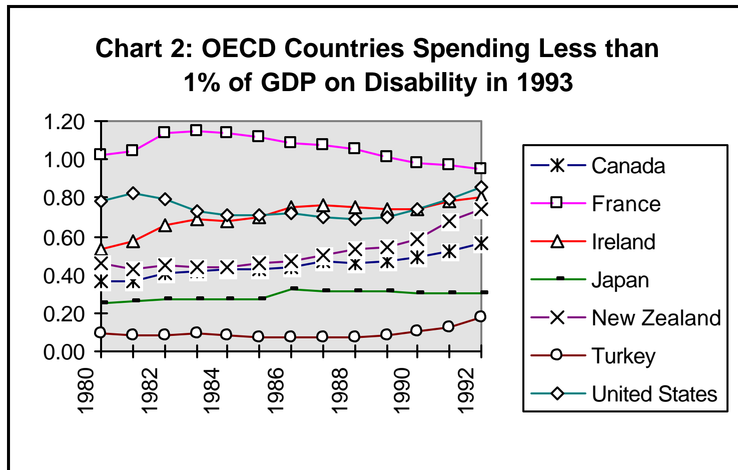
[12] For example, restricting disability recipients in Hungary to those below the normal retirement ages for men and women respectively reduces the disability burden relative to the working population from 104 per thousand to 40 per thousand.

Rates of Expenditure. The increase in the disability rates in many countries with developed programs led to an increase in expenditures (Chart 1). Benefit expenditures increased 13 percent in Germany between 1980 and 1990. By contrast, they increased 45 percent in Great Britain between 1980 and 1988. Ireland, Italy, and Portugal all posted increases in expenditure of well over 50 percent over the decade of the 1980s. By contrast, expenditures in the Netherlands, with its very high disability burden only rose by 20 percent. Unless expenditures increased more quickly than GDP, the growing disability burden faced by many countries did not increase the expenditure burden relative to GDP. In such cases, the increase in the disability recipient rate would be easier to finance.

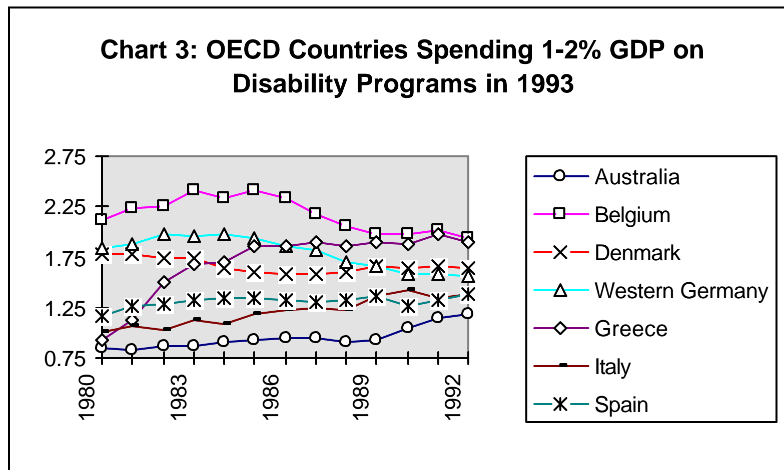
Chart 1: Trends in Expenditures in National Currencies in 1985 Values



The proportion of GDP used to support disability payments shows as much variation by country as do eligibility conditions and benefit formulae. The OECD countries can be divided into those spending less than 1 percent of GDP on disability income programs in 1993, those spending 1-2 percent of GDP, and those spending over 2 percent of GDP. Countries among the low spending group include Canada, France, Ireland, Japan, New Zealand, Turkey and the United States (Chart 2). France's expenditures as a percent of GDP fell over the 1980-1993 period, placing it in this lower-spending category. By contrast, the disability expenditure share in Ireland, New Zealand and Canada tended to increase.

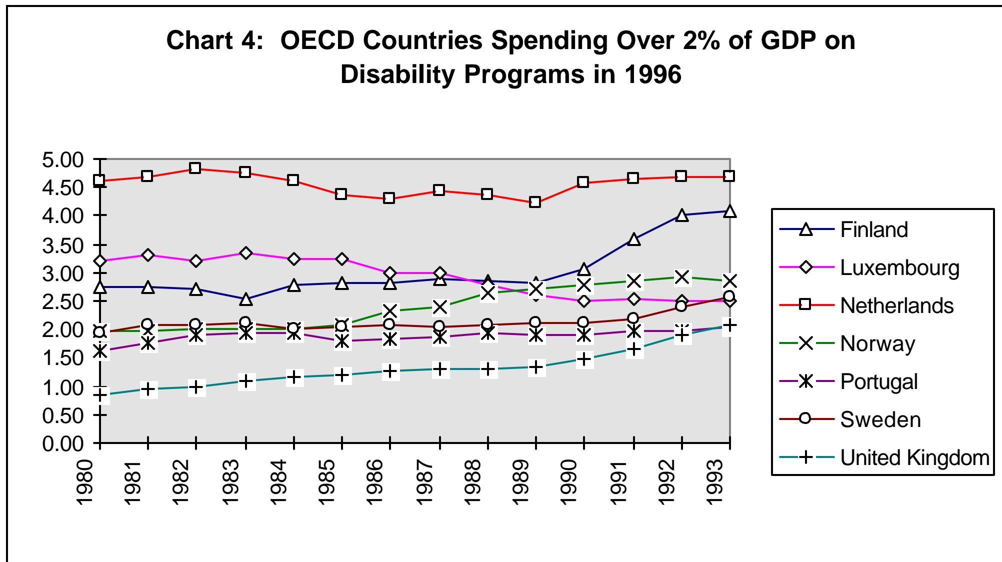


Countries spending 1 to 2 percent of GDP on pensions include Australia, Belgium, Denmark, Germany, Italy, Greece, and Spain (Chart 3). While both Australia and New Zealand have means tested disability benefits, Australia's expenditures are closer to those of countries with social insurance programs. Belgium, Denmark, and Germany have actually posted a decline in the share of GDP spent on disability pensions, although the other countries have had spent more on disability benefits over time. In particular, disability expenditures in Greece more than doubled over the period.

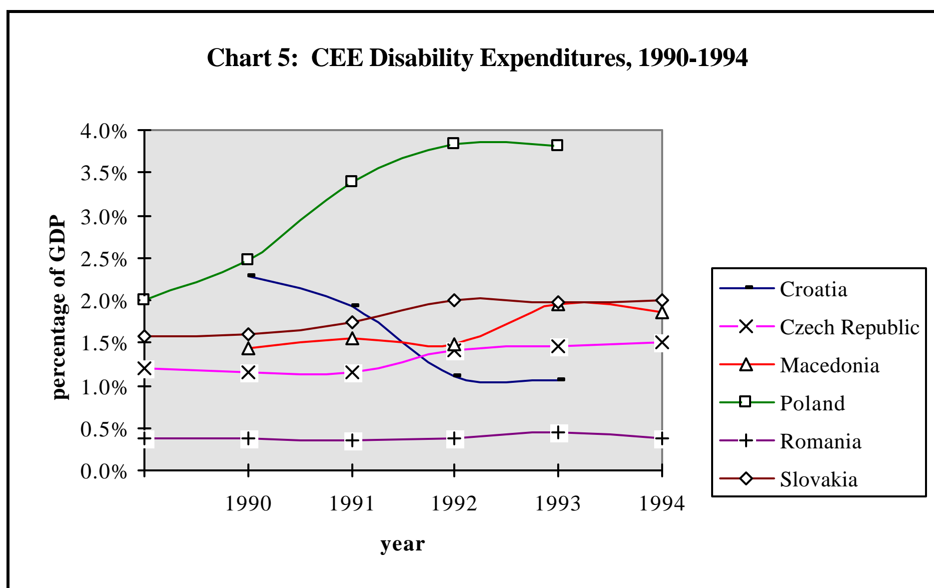


Source: OECD (1996).

The highest spending countries include Finland, Luxembourg, the Netherlands, Norway, Portugal, Sweden and the United Kingdom (Chart 4). By 1993 both the Netherlands and Norway posted expenditures on disability programs of over 4 percent of GDP. Yet while the Netherlands had an unusually generous program throughout the period, Norway's spending increased precipitously during the 1980s. Great Britain's expenditures also skyrocketed paralleling the enormous increase in recipients over the period. The only country in the high expenditure group in which benefit expenditures were moderated was little Luxembourg.



The expenditure shares of GDP dedicated to disability benefits in Central and Eastern Europe are remarkably similar to those of the OECD countries (Chart 5). Expenditures range from less than 1 percent of GDP to nearly 4 percent in Poland. In general, expenditures have risen as a share of GDP in all but Croatia. The relative reduction there may reflect the greater use of sick leave benefits and old-age pensions as an alternative to disability insurance. As expenditures are similar to those of OECD countries, the level of expenditures alone is not necessarily a greater fiscal burden for these countries than for those in the OECD. An issue of greater concern is whether the emerging private sector in the CEE is saddled with an extremely high payroll tax rate that is a burden to employment and growth. Effective payroll tax rates are exacerbated by high rates of open and hidden unemployment, including workers who have not been paid or are on forced vacation. Further, in many countries the informal, non-taxpaying economy has been expanding rapidly.

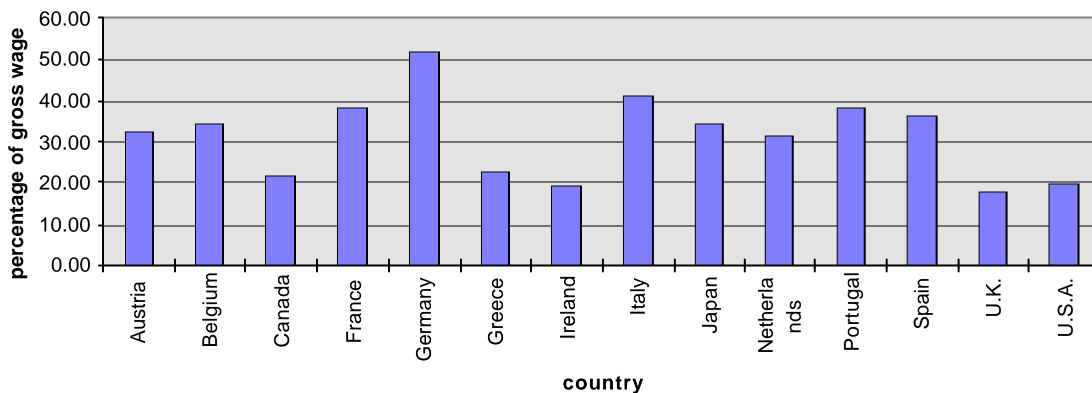


Source: World Bank SCT database.

Payroll Taxes. Because disability programs may substitute for old-age retirement programs, another way to evaluate the generosity of disability programs is to review the GDP share spend to all three basic social insurance programs -- old-age, disability, and survivors, recalling that the contribution or tax rate required to finance a country's system will depend upon the underlying health status of the population, the age distribution of the population, and program provisions, including eligibility with regard to work experience, degree of disability, and the generosity of the benefit formula.

Payroll tax rates in OECD countries vary greatly depending upon the generosity of the various social insurance programs included. Wage taxes are typically used for old-age, disability, and survivors programs, for health insurance, for short-term sickness plans, and for maternity benefits. Tax rates may be consistent across the population or may vary by income and sector of the economy. Among the OECD countries, Germany has had one of the highest rates and Japan one of the lowest (Chart 6). High payroll taxes may have a negative impact on employment, or encourage tax avoidance or evasion, in part, through hidden employment in the formal sector.[13] High payroll taxes for disability contribute to this problem even if their share of the total tax is relatively small.

Chart 6: Payroll Taxes in OECD Countries

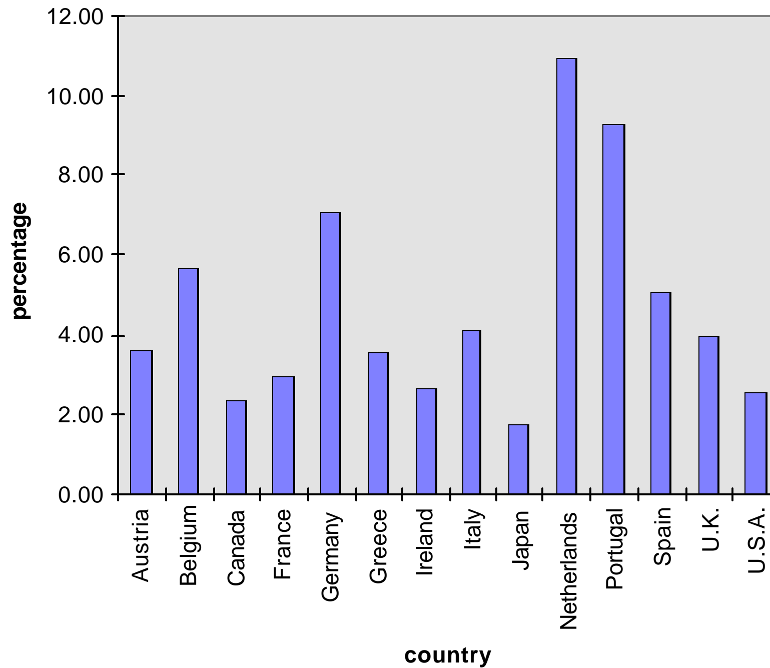


Source: World Bank estimates of payroll taxes

In OECD countries the share of the payroll tax allocated for disability pensions is not always explicit. An approximation of the implicit payroll tax rate for disability relative to total compensation can be made by computing the share of the payroll tax rate for disability based on the proportion of social insurance expenditures going to disability programs. Based on a standardized definition of the payroll tax for OECD countries, the Netherlands has the highest

113 The size of the disemployment impact may be mitigated depending upon the actual incidence of the tax on wages. In some countries, most of the tax may be paid by the employee through a wage-tax trade-off. The extent to which this will happen will depend upon the elasticities of both labor supply and labor demand. Further, to the extent that employees would purchase the benefit if offered on their own, they will regard the tax as a consumption good that will not reduce the supply of labor.

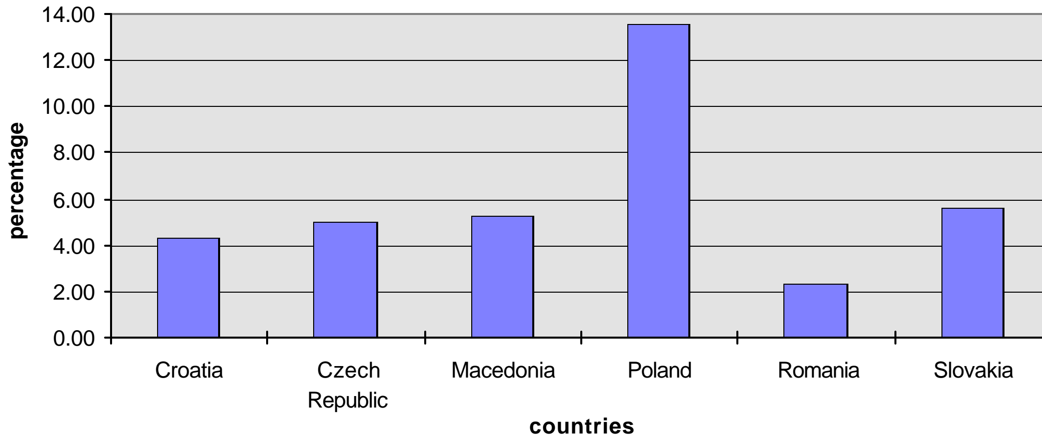
implicit payroll tax at nearly 11 percent of gross wages (Chart 7). Portugal and Germany register the next highest rate at 9 and 7 percent respectively. By contrast, Japan, the USA, Ireland, Canada, and France all have implicit disability tax rates of less than 3 percent of gross wages. The ordering of countries presented is not entirely consistent with data on the share of GDP spent on disability benefits reviewed earlier. These differences, in part, stem from the way in which disability benefits are financed, with countries with a greater proportion of general revenue financing likely to have lower implicit disability payroll tax rates.



Source: World Bank estimates of payroll taxes and OECD (1994).

Implicit payroll taxes for disability in Central and Eastern Europe are, on average, higher on average than those in OECD countries (Chart 8). They range from 2.3 percent in Romania to 13 percent in Poland, higher even than in the Netherlands. Most countries have rates above 4 percent of gross wages. This finding would seemingly contradict the overall assessment that expenditures on disability programs are quite similar in the CEE and OECD countries. But higher rates are required in CEE countries because of lower rates of employment and higher rates of non-compliance. Unfortunately, the compensatory imposition of relatively higher payroll taxes in the CEE countries is likely to exacerbate deficiencies in employment and compliance, suggesting that these countries should have less generous programs than the developed market economies in the OECD.

Chart 8 : Implicit Payroll Tax for Disability in Selected CEE Countries



Source: World Bank estimates of payroll taxes and SCT database.

Latin American countries with reformed funded pension systems typically require premiums of 2 to 2.5 percent for disability and survivors insurance, considerably lower than those of the OECD countries or the CEE. For example, in Mexico, 2.5 percent of payroll goes for disability and survivors benefits, even though these are still managed through the public system. This rate was reduced from an earlier rate of 3.0 percent after experience indicated that expenditures were lower than originally anticipated. In Peru, the premium for disability and survivors' was reduced from an original rate of 2.2 percent of salaries to only 1.23 percent

In Colombia, the cost of disability insurance varies, with the disability risk insured by private insurance companies at rates ranging from 0.4 - 8.7 percent of payroll, depending on the risk. Under the new funded system in Bolivia, a 2 percent insurance premium pays for the risk of total disability financed under an insurance contract. Contributions for disability pensions and workers compensation are placed in a separate account by each pension plan in the system. In Chile, participants pay premiums for disability and term life insurance in addition to their old-age pension savings account. These depend on rates in insurance market and vary from one pension fund to another. The effective contribution averages 3 percent of pensionable salary. In each of these systems, disability costs will be offset by the balances in the individual's pension account and/or the value of the recognition bond issued as compensation for service under the old PAYGO system.

The difference between the average contribution rate in Latin American countries with reformed old-age pension systems and the OECD/CEE countries is striking. The Latin American rates are often considerable lower than in the PAYGO systems. These differences are, in part, related to eligibility criteria, as pensions are restricted to workers qualifying for total disability in Argentina, Colombia, Bolivia, and Mexico. However, partial benefits are granted in Chile and Peru. In Peru the benefit may be up to 70 percent of the insured's salary representing a rather generous pension.

Two hypotheses may be proposed to explain the relatively low contribution rates in the Latin American systems. On the one hand, the reform itself may be responsible for lowering the rates. The second-stage reductions in Mexico and Peru suggest that governments undergoing reform are more sensitive to expenditures than those with continuing PAYGO systems. On the other hand, systems undergoing reform may face relatively small disability risks, particularly if the participants of the reformed systems tend to be concentrated among younger employee cohorts. Further, the covered populations in the formal sector are likely to have better health prospects than the population in Latin America overall.

Consequently, as the funded Latin American systems mature and gain more complete coverage among the (possibly lower-income) population, disability rates and disability costs are likely to increase. Those countries insuring for partial disability and paying more generous benefits may eventually face some of the same problems as the OECD and CEE countries, which are currently developing new methods to contain costs. While defined contribution plans can shift the demographic risk of aging away from the workforce through forced savings, increases in the incidence of disability will tend to raise costs across-the-board, unless premia are age and occupation related. Such a solution may be problematic under a mandatory system if equity considerations are also a factor and full compliance is desired.

VIII. Evaluating System Efficiency

Criteria for Evaluation. One way to evaluate the efficiency of a disability insurance system, whether public or private, is to assess the extent to which it fulfills its explicit purpose of partially replacing the income of workers who have an impairment restricting their job performance relative to that experienced prior to the disability. If the purpose of the cash transfer payment is relatively narrowly defined, programs which go beyond that mandate are inefficient.

Disability and Unemployment. Disability programs that are used in lieu of unemployment insurance add to system costs relative to more stringent programs. For example, in the Netherlands prior to recent reforms. it was relatively easy to qualify for disability benefits as the program explicitly allowed labor market conditions to be a criteria in determining eligibility. Even under the more stringent US program, a number of studies have found that benefits fluctuate cyclically, growing more rapidly during a recession.

Disability programs in CEE countries clearly expanded during the early 1990s in an effort to cushion the population from the unemployment caused by transitional. restructuring and recession. The increases in the disability rolls in transition economies, however, may have not entirely been a result of relaxed standards. Given the ideological predilection towards full employment, individuals in former market economies who would have qualified for disability payments may simply have been assigned a job no matter their performance, as redundancy was rampant throughout the economy. After transition, it could have been considered preferable to lay off workers qualifying for disability pensions instead of workers who could only qualify for unemployment insurance, with no consideration to the relative productivity of individual workers.

Early Retirement. Another misuse of disability programs is in their substitution for early retirement benefits. Expanded program participation in Germany over the past 20 years clearly indicates that such a trade-off has taken place. Such an expansion highlights an implicit policy of allowing disability programs take up the slack for structural adjustments in the economy. The US, with its stricter program definition of disability, has had placed more of the risk of structural adjustment on the workforce, encouraging continued employment at, most likely, lower wage rates. Some CEE countries, struggling with the need to lay-off redundant workers, appear to have relied on increases in the disability rolls, while others have expanded eligibility for early old-age pensions. In general, it should be less costly for the economy if enterprises pay for their own early retirement programs and workers remain the labor force at ages at which they can continue to be productive.

Work Incentives. Programs which provide work incentives to participants will tend to be more efficient than those without such incentives, as they encourage workers to attain a degree of labor market productivity. For example, while Sweden has replacement rates as high as those in the Netherlands, it requires most persons with disabilities to work. As a result, Sweden's disability program expenditures are less than those of the Netherlands relative to GDP. Nonetheless, Sweden is still on of the most high cost countries in terms of its public expenditures. Germany has a large, and apparently successful, vocational rehabilitation program and lower disability expenditures. Consequently, Germany may provide a better overall model for other countries to follow in this respect.

Other governmental measures to encourage work among the disabled do not appear to be very successful. For example, subsidized wage programs are economically inefficient if they encourage employers to substitute workers with disabilities for other workers. Similarly, sheltered workshops may create unfair competition for other employers who hire workers without a state subsidy. Programs in former socialist economies providing advantages to sheltered workshops have been known to be convenient ways of avoiding taxation. Lastly, programs mandating the employment of a minimum percentage of workers with disabilities in all businesses have not been successful since most employers have not met the requisite targets. Other means of encouraging employment, such as the accommodation provisions in the Americans with Disabilities Act, may be more promising, although, the Act has been criticized as placing uncertain and possibly unduly high costs on employers.

The relative generosity of a country's disability program will also affect the work incentives of individuals. Standard labor market theory attests to the reduction in labor supply due to the income effect provided by the disability pension entitlement. Further, once on the program, the recipient will face a strong disincentive to return to work as a reduction in benefits will impose an implicit tax on earnings. Consequently, one can expect greater labor force participation and a smaller beneficiary population in countries with lower replacement rates, if all other conditions are equal Not surprisingly, the rate of disability pensioners per thousand labor force participants is higher in the Netherlands and Sweden than in Germany where replacement rates are lower.

The degree of disability covered by the program will also affect work incentives. Disability rolls in the Netherlands were the highest among the developed market economies, in part, due to the extremely generous definition of disability. By contrast, in the United States, the labor force participation rates of individuals self-identified as having some degree of disability are virtually indistinguishable from those of the non-disabled population. Nonetheless, a certain

proportion of these workers are likely to receive lower wages than they would have in the absence of any disability either as a result of lower productivity or discrimination. Consequently, the desire of Government to protect workers from earnings reductions comes at the cost of program expansion and must be evaluated in terms of fiscal and welfare criteria.

Program Management. There are two types of risk in the administration of a disability program: (i) that applicants meeting program criteria will be turned away from the program and (ii) that applicants not meeting program criteria will be included in the program. There is little information about the success of programs in avoiding these risks, particularly since programs that have traditionally been overly generous, such as that of the Netherlands, have included judgmental labor market criteria. The first rule of a good program should be to remove non-program criteria as much as possible. The second rule should be to obtain an independent medical opinion. There may only be country specific solutions to these considerations.

For example, some countries depend upon the applicant's own doctor. If that doctor has been treating the patient outside the disability determination process, his or her opinion is likely to be unbiased. But physicians outside the process may have good medical judgment but may not be able to relate diagnosis to disability. If the doctor has been treating the patient and is well-versed in a process in which sick-leave is transformed into disability, her or she may have an incentive to provide a diagnosis favorable to a disability determination. The risk of an inappropriate decision may also be present in countries that have special medical panels conducting the disability determination. These panels may take on a life of their own, reinterpreting criteria based on agency preferences, or according to the politics of the day. When the disability application process was administratively tightened in the US in the early 1980s, a barrage of administrative appeals overturned many denials, on the basis that they were incorrect and politically motivated. In the longer run, this led to a further expansion of the program.

Methods to better evaluate the efficacy of program administration should be investigated more fully within and across countries. One type of assessment could be statistical -- comparing distribution of disability by condition, gender, and age cohort derived from an independent source with the distribution allowed within the program. Other evaluative criteria could be developed through redeterminations and experiments with the determination process within the social insurance program.

One of the most evaluated disability programs is that of the Netherlands. While the methodology used for these assessments may be used as examples for other countries, the Dutch program prior to reform was so generous compared to other countries that the findings of the Dutch research may not be that relevant to other nations seeking reform. Similarly, the extensive research and evaluation done in the US is conducted in a country whose standards are more restrictive than others.

Recent Policy Responses. Even before instituting sound evaluation procedures, governments throughout the world have started to reform their disability programs, either because of rising expenditures and beneficiary populations, or as a result of a reform of the old-age pension system. The Netherlands has had the largest and most generous program among the OECD countries. With over 4 percent of GDP devoted to disability benefits, reform was a necessity. The initial 1987 reforms failed to stop program growth. Those reforms disentangled the disability

and unemployment provisions in the disability program by eliminating labor market considerations from disability assessments. One study, focusing on the institutional aspects of five European systems, concluded that the Dutch program permitted greater administrative discretion than those of other countries. Probably partly as a consequence of the discretionary implementation of the program, the earlier 1987 reforms had less of an impact on expenditure growth than expected.

The Dutch disability amendments legislated during the early 1990s instituted significant program changes. First and foremost was the expansion in the concept of commensurate employment to include all generally accepted jobs compatible with the individual's residual capacity. In other words, a claimant could no longer qualify for benefits simply because he could not perform his pre-disablement job. Further, the disability status of participants was to be reviewed every five years. In 1993, changes were made in the structure of benefits making them wage and age related. Replacement rates for persons under age 50 are now dependent upon their degree of disability.

The same Dutch legislation also required a review of all current recipients (scheduled for completion by 1998). The outcome of these reexaminations to date has been more effective than anticipated, with 47 percent of all reviewed beneficiaries either facing benefit reductions or loss. Further, there has been a decrease in the number of new applications and an increase in the percentage of new claims that are rejected. The reform amendments also spurred the development of private, voluntary disability insurance to top-up benefits. While the Dutch program is still substantially more generous than others, these changes appear to have contained expenditure growth.

The United Kingdom, which has also experienced escalating disability costs, recently made substantially changes in its short-term and long-term disability programs. Effective April 1995, new legislation replaced the former sickness and disability programs with a new incapacity benefit (ICB). This benefit is contributory and not means tested. It is subject to a stricter work test for short-term benefits. Most disability claimants will have to be reexamined with the expectation of a substantial reduction in current beneficiaries and reduced flows thereafter.

Countries in transition, including Hungary, Poland, and Kazakhstan, are also making changes in their disability programs in conjunction with the reform of their old-age pension systems. At least part of the impetus for disability reform is to reduce expenditures. In Hungary a reform of the disability system is contemplated but has been postponed until January 1999. As currently envisaged the reform would encourage employment among persons with disabilities and included a vocational rehabilitation component. Disability eligibility would be changed to include both medical and vocational criteria. Further, only those who are fully disabled would be entitled to a pension. It has not been decided whether a second pillar disability pension should be instituted to complement the old-age pension. However, disability benefits will include the balance of the individual private pension account to pay for the PAYGO scheme. The partially disabled would be provided vocational rehabilitation to help them gain employment.

The final plans for the revamping of the disability program in Poland have yet to be decided. Currently, the program rolls are unusually high with many persons continue to receive a disability pension after retirement. Initially, disability benefits will remain as a defined benefit entitlement with the same formula as today, but with further changes anticipated in the future. Under the reform, the benefit would be immediately financed by a separate contribution. Those

receiving disability insurance would be automatically receive old-age pensions at age 55, with the opportunity to select the disability or old age pension, whichever is higher. The vision is to have benefits contingent upon the ability to work, with a disability determination process developed that is not subject to abuse.

In Kazakhstan, disability benefits have been taken out of the pension system and turned into social allowances. The benefits are not means tested, but they are uniform regardless of past earnings or tenure. As this system creates a number of work disincentives, the privatization of disability insurance similar to that in some of the Latin American countries is contemplated by Government contingent upon the development of the insurance industry, which requires institution building as well as legal and regulatory reform.

IX. A Primer for Disability Reform

Criteria for Policy Choice. The challenge of programs designed to assist the disabled lies in the ability to balance equity and adequacy against the economic costs of the program. Six criteria can be used to evaluate the success of a disability insurance program:

- Affordability
- Sustainability
- Non-distortionary Financing
- Work Incentives
- Determination Accuracy
- Transparency

The concept of <u>affordability</u> will vary by country according to resources and societal norms. While expenditures on disability programs are relatively small compared to old-age pensions or health care costs, excessively generous programs can strain the fiscal resources of a country and lead to higher rates of taxation, which will undermine economic growth. Moreover, countries with aging populations and with poorer health conditions will be less likely to be able to afford disability programs providing generous benefits. On balance, countries with more modest programs are better models to for others to follow than those with more costly programs.

Just like old-age pension programs, disability insurance programs need to be <u>sustainable</u> over time and robust enough to cope with demographic changes. As many countries are beginning to face an aging workforce, disability expenditures can be expected to increase. Paying for demographic change can be relatively straightforward in the case of old-age pensions as mandatory savings schemes provide self-financing for aging cohorts and spread the costs of the demographic risk over a cohort's own lifetime. In the case of disability, measures to contain growing systemic costs are less straightforward. Nonetheless, offsetting total disability insurance payments with the savings in old-age accumulation accounts, as is done in some of the reformed Latin American pension schemes, can help reduce potential increases in the disability contribution rate. Further, greater risk assignment across age cohorts, occupations, and industries could also create more sustainable programs, albeit at a loss of risk-sharing.

The financing of disability insurance should seek to have a minimum of distortionary consequences on employment and economic activity. If payroll taxes are too high, they will tend to reduce employment and/or encourage informal sector activity. These effects will depend upon the elasticities of supply and demand for labor and on the type of insurance provided. While the payroll tax required to pay for disability insurance, in and of itself, is likely to be relatively small, it often represents another addition in a litany of payroll taxes including old-age pensions, health insurance, unemployment insurance, survivors' benefits, sick leave, maternity leave, and possibly others. Thus, it behooves government to have a modest program and to finance all disability benefits that are not employment-related using general revenues. Countries that have large or expanding informal, non-taxpaying, sectors need to seriously consider having a very restrained disability program as the costs of more generous coverage is likely to have an adverse economic impact.

Overly generous disability programs are likely to have serious work disincentives for the recipient population by shifting the labor-leisure decisions of beneficiaries sharply towards leisure. While the desired effect of disability insurance is to provide income to those who can no longer provide for themselves, the objective of the insurance is not to have a large disability beneficiary population who could, in fact, support themselves. Further, the exclusion of capable individuals from the labor market results in a loss of productivity as a result of their non-participation. Consequently, the level of benefits should be low enough not to discourage work and other policies should be developed to encourage re-employment. Further, the criteria for program participation should be sufficiently stringent to exclude those who do no have a disability that leads to a substantial drop in earnings.

A good disability program should have fair and measurable methods of making accurate determinations to accept or reject applicants to the program. Without these assurances, the program becomes discretionary and subject to corruption and manipulation. Further, even without malfeasance on the part of the program managers, the determinations should seek to minimize type I and type II error. That is, individuals with qualifying disabilities should be admitted to the program and not be rejected, while individuals with no qualifying disability should be rejected and not be admitted to the program.

While the definition of disability can never be entirely clear-cut, program transparency will be improved if the goal of the program is clearly delineated. In this case, transparency requires that disability benefits be paid only to disabled workers on clear-cut grounds. Disability programs should not be used as an alternative for unemployment insurance. The use of programs to substitute for unemployment insurance may be deliberate, as in the case of the pre-reform Dutch program, or implicit, as in the case of the CEE economies during transition. Similarly, disability programs should not substitute for either early retirement pensions or for normal retirement pensions. Consequently, the coordination of benefits is an important corollary to transparency.

Suggested Program Criteria. Generally speaking, disability programs that provide benefits to individuals that are less than totally disabled will have a more difficult time controlling disability awards, and, hence, program costs. Consequently, program costs will be better controlled by limiting pensions to the fully disabled and providing different types of assistance to those with partial disabilities. Similarly, awards should be based on disability determinations alone and should not reflect labor market conditions. The criteria for full disability should reflect the

ability to hold a job within the economy and should not be related to holding a commensurate job to that held prior to the disabling condition.

Program coverage for disability insurance should be limited to individuals with a substantial labor force attachment. If non-workers are included and the program is financed through a payroll tax, the program will become more expensive and the disemployment incentives will become greater. If only current labor force participation is taken into account, the potential will be greater for adverse selection, with individuals joining the labor market if they anticipate a greater probability of disablement. General revenue financed disability programs may cover the entire population without such distortions. Such programs would likely pay flat-rate benefits, possibly be subject to a means test. They would need to be supplemented by social insurance or mandatory private insurance, however, if the program were to have an income-replacement objective. Flat-rate benefits provided regardless of income or a means test, of course, could provide adverse work incentives.

The disability determination process should take into account medical conditions and how these lead to impairment and consequently work disability. A check list of medical conditions without a determination of work disability will tend to include individuals who are not disabled. Similarly, work disabilities should be firmly linked to the causal medical condition creating the disability. Without such a link, the potential for fraud increases substantially. The process should include some mix of medical personnel and program or vocational specialists. Careful consideration should be given to prevent collusion between the examining physician and the applicant. Similarly consideration should be given to prevent disability determination staff from being influenced by political considerations that would tend to favor expanding or limiting the beneficiary population by the discretionary strengthening or dilution of program criteria. There is no cookbook approach to this task, in part, because no cross-cutting review of different methods to conduct disability determinations. Such cross-country analysis is needed.

In order to encourage labor force participation, replacement rates for disability pensions should be low on average, whether through social insurance or mandated private insurance, not higher than 40-50 percent of the average wage. Further, these rates should be closely coordinated with other cash benefit programs to discourage the substitution of disability benefits for other more appropriate income maintenance programs. Higher replacement rates can be obtained through voluntary insurance provided through the employment relationship or on an individual basis. Other programs to encourage a return to work should be developed and carefully monitored to determine whether they are working. For example, vocational rehabilitation programs should be designed and include persons with partial disabilities. Similarly, employers should be encouraged to provide accommodation for persons with disabilities in the work place. Percentage mandates for hiring of the disabled do not appear to be very effective -- or good policy even if they were. Mandates may require employers allocate their workforce in a way that is not economically efficient. The option to establish sheltered workshops should be exercised with discretion. Firms primarily using disabled workers can be abused if such organizations are provided special privileges, as they have been in some transition economies. Lastly, while wage subsidies may be considered, they should be carefully designed as they may create conditions of unfair competition for firms receiving the subsidies and/or lead to the substitution disabled for non-disabled workers.

Feasible Financing Options. There are no clear guidelines for deciding whether a country should institute a program of social insurance or a privatized disability insurance program, possibly complemented by public welfare. If a disability insurance is provided, income-related benefits for workers tend to be preferable to a flat-rate benefits scheme as they better meet the goals of equity and adequacy. Further, an income-related benefit will encourage compliance if it is priced appropriately and does not contain too large a redistributive element. Whether governmentally or privately administered, mandatory insurance payments will be affordable if they are limited to, at most, 1.5 percent of GDP or 3 percent of payroll. Lower rates are preferable to reduce the tax burden on the economy. Of course, low payroll tax rates need to be combined with low replacement rates if the system is to be financially sustainable.

The choice between social insurance, private mandated insurance, or some combination of the two, needs to be carefully evaluated in terms of the pros and cons of each method. Like public pensions, social insurance for disability is subject to the political process, and, as such, is able to be unnecessarily expanded. For example, benefit generosity may be improved during periods of economic expansion when government revenues are rising. In addition, eligibility criteria may be loosened during economic downturns to substitute disability benefits for unemployment compensation. Other scenarios for an expansionist public program can be imagined as well.

The problems faced by public programs include the risk of political interference in the disability determination process, with political pressures to either accept individuals with disabilities that are not sufficiently severe or, as occurred in the United States in the early 1980s, to reject applicants by implicitly tightening eligibility conditions. Indeed, in the Netherlands, a lenient interpretation of eligibility appeared to be part of the institutional culture. By contrast, disability determinations under mandatory private disability insurance are more likely to be strict, as the risk of increasing the number of pensioners will lead to financial hardship for the insurance company. But, while private insurers are more likely to maintain tight financial controls, they also have an incentive to persuade examiners to deny benefits to individuals to increase their profit margins. Because there are many gray areas in any disability determination process which must be resolved by professional judgment, even a transparent program provides scope for manipulation in either a public or private system.

Certain preconditions are necessary before a system based on private insurers can be established. First, professionally managed insurance companies must be active in the country. Further, these companies must operate within a prudent regulatory structure. This is not the case in many transition economies, and, probably, in many developing economies, as well. Second, the structure of the mandatory market must be developed carefully to avoid the separation of the population into risk categories that would undermine the equity or finances of the system. For example, consider a system in which eligibility conditions and disability criteria are set by law but contribution rates are not. Insurers could act to segment the market into narrow risk classifications, with premia for some groups far exceeding those of others. Excessively high rates would encourage non-compliance among some high-risk workers and erode the universal mandate. Alternatively, if rates and conditions were set by law, insurers accepting poor risks would be more likely to go out of business. One response to this outcome could be a government pool that would have to accept all poor risks as an insurer of last resort. Under proper legislation,

problems of adverse selection can be minimized., Adverse selection risks present little problem for a universal public program.

Both public and private schemes will face the impact of aging populations on future program costs, as disability is highly correlated with age. Of course, the contribution rates for both public and private schemes can be legislatively changed can to deal with this risk. Under a public system, however, increased disability costs can often be hidden without increasing the contribution rate. For example, disability costs could be subsidized by funds from other programs financed by the same payroll tax or by funds from general revenues. Increasing program costs funded by private insurance would necessitate explicit rate changes, else the insurer would continue to suffer losses. Nonetheless, if recipiency growth is not foreseen by either the government or the parliament, further rate changes might be difficult to legislate, with the result that determination criteria will be implicitly tightened preventing eligible persons with disabilities from receiving benefits. In other words, insurers would restrict disability awards to maintain financial solvency. Alternatively, if rates could be set by the insurer, the possibility of risk-pool creaming would obtain.

Another alternative to the either of the approaches outlined above isa two-tier system including a government program and private insurance. Switzerland offers both on a mandated basis. In the US, workers may be covered by Social Security Disability Insurance and by a voluntary employer-based disability insurance plan. In Canada, the public systems must obtain reinsurance on the private market. A possible reform in developed market economies and transition economies with high disability costs could be to restrict the public system to total disability and provide partial benefits through mandatory or voluntary private insurance. The risk in this alternative is the greater difficulty in determining partial disability status. Alternatively, a public system could provide a minimum benefit that would be topped up by private insurance.

The decisions of countries to institute or reform disability insurance depends upon the development of the financial sector and the societal preferences for greater or lesser protection. While the institution of a private system removes it from the political process, a good private-system design requires a greater degree of sophistication than a public system in terms of the initial legislation and subsequent regulatory competence.

There is much additional work that needs to be done on the part of the World Bank before we can claim to have a satisfactory blueprint for reform. In particular, we need to study and evaluate different disability systems more thoroughly to identify best practices. Further, we need to model disability system revenues and expenditures as thoroughly as we have modeled old-age pension programs.

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