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Unemployment Insurance for Developing Countries

Daniel S. Hamermesh

What structure of taxes and benefits is appropriate for an unemployment insurance program? Can the same principles be applied in developing as in developed countries?

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Unemployment insurance, contends Hamermesh, provides compensation for lost income by requiring individuals or employers, or both, to pay taxes into a common fund. It is part of a general safety net constructed by citizens of developed countries. It is unique among social insurance programs in that it offers payment for an event that is partly preventable and that is not physically painful. Thus, it differs from old-age and disability insurance, from compensation for work-related injury and illness, and others. This exposes it to greater criticism from citizens opposed to any social insurance, criticism that planners who build unemployment insurance programs must take into account.

Hamermesh analyzes the various goals that have been adduced for unemployment insurance and decides which ones make sense. Sometimes the supposed goals run counter to what unemployment insurance programs actually do, but one goal — providing consumption insurance — is at least partly met by typical unemployment insurance programs in developed countries.

Hamermesh lists the parameters of typical unemployment insurance programs and their ranges in industrial countries. Evidence about the

economic impact of these parameters provides planners with a basis for choice that can guide them in constructing unemployment insurance programs elsewhere.

Experience and evidence in developed economies may carry over into developing economies, Hamermesh concludes, but this is unclear. Several characteristics of developing economies, particularly the possibility that a dual labor market exists, are important. This suggests the need for care in introducing unemployment insurance programs in these economies. Hamermesh suggests several lines of research to answer questions about the validity of the consumption-insurance goal in developing countries, and about appropriate structures of taxes and benefits.

Hamermesh's discussions of dual labor markets and the size of the modern sector do not apply to the formerly planned economies of Eastern Europe, but his discussion of program parameters and goals may be useful for policy-makers there who must analyze expectations about any unemployment insurance program that is proposed.

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This author is Professor of economics, Michigan State University, and Research Associate, National Bureau of Economic Research. This paper is prepared as part of the Program of Studies on Employment and Labor Market Issues conducted by the Education and Employment Division of the Population and Human Resources Department of the World Bank.

A. Introduction – Purposes of the Discussion

A major purpose of this essay is to provide an outline of the scope and nature of unemployment insurance (UI) programs in industrialized economies. This includes: (i) laying out their potential goals, including an analysis of the rationales for these goals; (ii) summarizing the characteristics of their structure; and (iii) presenting a summary of evidence on the programs' economic effects. Laying out the potential goals of UI programs is crucial, since without goals, we have no basis against which to weigh the evidence of the programs' effects. Without a summary of program characteristics, there is no basis for comparing programs or for understanding the choices available to policymakers elsewhere. While summaries of the economic effects of UI programs have been provided elsewhere, linking them to specific policy choices is essential for appreciating their impacts on program goals.

Having accomplished these tasks, the second major purpose is to consider issues in applying UI programs to developing economies. The central question is the applicability of the institutions of UI in industrialized economies, and the evidence on their effects, to this different context. Following from this is a discussion of the research issues that should be investigated to learn more about this question. Information on expenditures on UI as a percentage of GDP is shown in Table 1 for recent years for many countries. Comparisons across countries in these data are problematic, both because the definitions of what constitute UI benefits differ, and because the extent of unemployment differs sharply among the countries and over time. There is no available index that shows the relative generosity of each country's program under a fixed set of labor-market conditions. Suffice it to say that we can be sure that in most developed economies UI benefits are a very small fraction of total spending and as a fraction of GDP, they generally rise as the aggregate unemployment rate increases.

Table 1. UI Benefits as a Percentage of GDP in OECD Countries, Recent Years

Country	1989 or 1990	Previous 3 Years
Australia	1.07	0.99
Austria	0.11	0.15
Belgium	2.04	2.39
Canada	1.57	1.69
Denmark	3.21	2.95
Finland	0.62	0.79
France	1.27	1.29
Germany	1.14	1.29
Greece	0.46	0.43
Ireland	2.79	3.26
Japan	0.32	0.39
Netherlands	2.30	2.65
New Zealand	1.77	0.97
Norway	1.15	0.64
Portugal	0.32	0.32
Spain	2.33	2.47
Sweden	0.59	0.61
Switzerland	0.14	0.18
Great Britain	0.90	1.17
United States	0.60	0.47

Source: OECD, Employment Outlook, 1991, pp. 238-248.

B. Potential Goals of UI Programs -- and Rationales For Government Intervention

Individual-Based Goals

Among the goals that have been adduced for UI are two that can be viewed as individual-based, in the sense that they stem from the view that the government can directly improve economic outcomes at the micro level. To be reasonable these goals must be based on the belief that the private market, or the individual agents themselves, cannot optimize instantaneously or intertemporally.

The major motivation for UI is the individual-based goal of consumption stabilization. This argument for UI as social insurance is that without UI benefits households will have insufficient savings to prevent substantial welfare losses when a family member becomes unemployed. It is true a fortiori that

most workers do not know when they will be unemployed. For this goal to be valid it must be true that workers either estimate the probability of becoming unemployed correctly, but are so myopic that they do not save for the eventuality; or they underestimate the probability and thus have insufficient precautionary savings.

The first possibility, myopia, is the best argument for all forms of social insurance. It is hard to believe that people underestimate probabilities of seasonal unemployment; and even differences in the probabilities of cyclical unemployment are likely to be fairly well-known. It is easier to believe that workers simply are not farsighted enough to save sufficiently for these eventualities, especially for spells of unemployment that are not seasonal. That being the case, by forcing workers to save by financing a UI program out of taxes on their incomes or consumption while they are employed, the policy allows them to smooth consumption and thus increase their economic welfare. The UI program becomes a way of socially overcoming individual myopia. The second possibility, the absence of good labor-market information, does underlie the justification for many government activities. It is not clear, though, why UI rather than a program that disseminates information about prospects in various jobs is the appropriate response to what seems to be an informational externality. This second possibility is a less acceptable justification for this individual-based goal.

The second individual-based goal is that of employment-smoothing. From the worker's side the argument is that UI benefits can provide the monetary assistance that might be complementary with search time and that might overcome financial constraints that inhibit search. This is a highly dubious argument, as it assumes that overcoming this constraint has a larger positive effect on search effort than the negative effect that UI benefits induce on the gains from search. From the firm side the argument is that the financing of UI can be devised so that employers have incentives to respond to shocks in product demand by altering hours rather than employment. Given a fixed structure of UI benefits, that is true; but it misses the point that has been recognized in the literature on UI and contracting (Feldstein, 1976; Baily, 1977): Payment of any UI benefits will provide incentives for greater fluctuations in employment unless taxes that finance them are assessed in an actuarially fair way on the

firms that generate the unemployment. This goal makes no economic sense *per se* as an original justification for UI. It is worth considering only once one has some other basic justification for the program.

Socially-Based Goals

Although the individual-based goal of consumption-smoothing was the major motivation for UI programs, since 1950 and until quite recently economists and others have adduced other, more socially-based goals for the programs. The oldest among these is macroeconomic stabilization --- providing an automatic fiscal stimulus to the economy by increasing purchasing power at times of slack final demand. Even on its own terms this narrow Keynesian view requires that the net flow of UI benefits and the taxes that finance them be countercyclical. That will always be true in programs financed by general revenues or fixed-rate payroll taxes, but not necessarily so if the program is financed as in the United States (see below).

Even assuming that the net flow is countercyclical, the question remains whether the program can have any effect on final demand. All of the concerns of the various macroeconomic sects apply here. These include: (i) The possibility that without compensating monetary ease no real impact will be felt; (ii) The concern that the impact of the additional deficit will be offset by the effects of the accompanying increase in the debt on people's savings; (iii) The worry that, to the extent that the policy is expected, any impacts will disappear as people's behavior adjusts in response; and no doubt others too.

Even beyond these fairly subtle arguments, though, there is a basic flaw in this goal. Admitting the possible usefulness of automatic fiscal stabilizers, why create one in the complex way that UI is constructed? Why not create a simpler countercyclical spending or tax program not based on the provision of income to unemployed workers? Viewed this way, fiscal stabilization may be a good reason for countercyclical spending; but it is not a basic justification for UI.

Equalizing incomes, or redistributing purchasing power, is another justification for UI that has been cited. For UI to accomplish this it must be the case that the incidence and duration of unemployment are negatively correlated with household incomes and that the taxes that finance benefits are not too regressive. There are no fundamental inconsistencies in this goal, though here too one wonders whether UI is the best way to redistribute income. Ignoring this, the question becomes whether a particular UI program is redistributive.

Using UI to encourage industrial restructuring is a recently popular socially-based goal. The argument here is politico-economic, essentially based on a compensation principle: Offer UI to workers in industries that had previously been protected or subsidized and that now face retrenchment. UI benefits become a way of spreading the otherwise narrowly-borne costs of the restructuring that will benefit the entire economy. Presumably this sharing reduces opposition to the structural change. This goal is internally consistent, though whether UI is the best form of compensation to achieve it is again an empirical question.

C. The Structure of UI Programs

Viewing the programs as evolutionary processes, this section illustrates the various paths that the policy can take, and gives examples from UI programs in a variety of OECD countries. (The sources for the information are OECD, 1991; Blaustein and Craig, 1977, and Reubens, 1989.) There are three basic areas in which decisions must be made:

Coverage --- independent of the characteristics of the worker's spell of unemployment, should that worker be covered by a UI program?

Benefits --- how much will be paid to the worker during each week of unemployment, and for how many weeks?

Financing --- who should pay for the benefits, and how?

Before even these choices are made, though, the national government must determine whether the program is to be a national one, or one in which the basic determination about benefits and financing

is made at a subgovernmental level. While most OECD countries have chosen national programs, in the United States and Switzerland most essential issues are decided at lower levels of government.

Coverage

The issues here have to do chiefly with exclusions relating to the characteristics of the worker or the employer that make it difficult or politically or economically undesirable even to consider the worker as potentially eligible for benefits. The potential areas for consideration are:

Industry exemptions. Should highly seasonal industries, such as agriculture, forestry or fisheries, be excluded, presumably because coverage would either be very costly or difficult to administer, or because the industry is not viewed as generating unemployment? Examples of the first of these three types of noncoverage are the failure of most UI systems in the U.S. to cover farm workers, or the Swiss exclusion of some hotel and restaurant workers. The other reasons are illustrated by the partial or complete noncoverage of domestic servants in France and the Netherlands, and by many countries' noncoverage of government employees. For various reasons some countries either do not cover railroad employees or have special programs for them.

Firm-size limits. These are imposed mainly for administrative reasons (though political pressure may also explain some of them). In the U.S., for example, employers whose payrolls are below some (usually low) limits are excluded from their state's UI system.

Occupational exemptions. Like industry exemptions, these arise mainly because of the potential expense of coverage or because the occupations are viewed as not characterized by unemployment. For example, Italy does not cover performing artists or clergy.

Demographic exemptions. These are usually imposed because the worker is not viewed as having an entitlement to regular participation in the labor force, or because the worker is not an employee in the conventional sense. Recent examples include noncoverage of people above the normal age of retirement (under state pension plans) in France, Norway and others, and underage workers in

Italy and the U.K. Also excluded from coverage in some countries (Germany is a good example) are students, family workers and apprentices.

Benefits

The discussion is in terms of the weekly benefit amount (WBA). The policy choices flow logically in order from the determination of whether any benefits will be paid, to the determination of the size of the WBA, the payment of extra benefits beyond the WBA, the number of weeks over which benefits can be collected, alternative activities for the unemployed worker in conjunction with the receipt of benefits, and miscellaneous issues.

Eligibility. Based on the conditions of the worker's relation to the employer, will the worker receive any benefits? Considerations include:

(i) Disqualification for reason of unemployment. Most states in the U.S. do not pay benefits to workers who leave their jobs voluntarily, and none do so to workers who have been discharged for cause (for misbehavior on the job). In most other OECD countries quitters do qualify for benefits, but they are disqualified for some period of time. Disqualifications range from 1 to 26 weeks, with six weeks being common (Canada, Finland, Ireland and New Zealand).

(ii) Work history. The idea here is to determine whether the unemployed worker is sufficiently attached to the labor force to qualify for UI benefits. The purpose of looking at work history is to avoid the moral hazard of offering benefits to someone who might enter the labor force for a short period of time in order to qualify for benefits payable over a much longer period. Within the individual's work history the UI program needs to define:

What is the accounting, or base period over which the worker's attachment to the labor force is gauged? In many countries this is one year (e.g., Canada, the U.K., and most U.S. states), but in some continental European countries it is longer. A longer base period, other

arnings equal, offers the possibility of a more stringent test of the worker's labor-force attachment.

During the base period, were the weeks worked and/or the base-period earnings sufficient to qualify the worker for benefits? There are many choices here, including whether to rest the qualification: a) Solely on weeks worked, regardless of earnings per week; b) Solely on earnings; or 3) On some combination of these. The range of policies that have been chosen varies tremendously, and includes: Minimum number of weeks worked, for example, 6 months in a 4-year base period in the U.K.; 20 weeks worked in a one-year base period, with minimum earnings per week, in Michigan; earnings in the highest quarter above some minimum level, with total base-period earnings at least 1.5 times high-quarter earnings, in some U.S. states. All of these alternatives are different ways of getting at the attachment of the worker to the labor force.

Relation of WBA to work history. Given the worker's eligibility, does the benefit increase with the worker's prior earnings, and if so, how rapidly? The first issue is whether benefits are proportional to earnings, as in Canada and most U.S. states (but see below); are at least in part a fixed amount, as in some parts of the UI programs in Belgium, France, the Netherlands, and others; and whether there is a maximum WBA, as in most U.S. states?

The more basic issue here is the determination of the replacement rate — the ratio of the WBA to earnings. In other words, how much of the earnings loss does the program seek to make up? In the U.S. 50 percent is the typical gross (excluding tax considerations) replacement rate, but in Canada it is 60 percent, and other countries that set benefits proportional to earnings replace anywhere from 60 to 80 percent under the regular phase of UI benefits. Table 2 shows the gross replacement rate for an eligible unmarried worker who experiences a full year of unemployment during a calendar year. The very

low replacement rates in some countries result from assuming a full year of unemployment where the UI system limits the payment of benefits to less than a year.

Extras/offsets to the WBA. The questions here revolve around demographic reasons for supplementing the WBA, taxation of the WBA and offsets for other earnings.

(i) Dependents' benefits. A few U.S. states and parts of the UI programs in Europe, particularly where benefits are a fixed amount, offer extra benefits to unemployed workers based on their family status. The amount can vary with the employment status of the spouse, and additional benefits can be offered if dependent children are present. The issue here is whether the program is to be viewed as treating people the same based on their labor-force behavior, implying dependents' benefits are not warranted, or based on the severity of the impact on consumption of a loss of earnings.

(ii) Taxation of benefits. In most OECD countries benefits are fully taxable, but in Greece, Ireland, Japan and Spain they are not. Since households' tax liabilities will differ even if the unemployed workers who generate the UI benefits have had the same work history, taxation of benefits changes their impact differently among households. This means that the focus should always be on net replacement rates, the ratios of after-tax UI benefits to after-tax earnings losses.

(iii) Earnings tests. Is there a reduction in benefits if the UI recipient has some earnings during the week benefits are received? One possibility is complete disqualification if the worker earns anything. Others include complex scales relating the reduction to the amount earned. In the U.S. some states reduce benefits by a (usually large) fraction for each dollar earned, while others reduce benefits by discrete amounts when earnings cross various thresholds. The issue here is whether the worker has suffered a loss of earnings large enough to justify the payment of benefits that will help maintain the household's consumption.

Duration of benefits. The major issue is when benefits will become payable and how long they will remain payable. The issue of potential duration --- the maximum number of weeks during which the WBA can be received --- is, along with the determination of the WBA, the central choice to be made in any UI program. In most countries those workers whose periods of unemployment exceed the

potential duration of benefits --- who have exhausted their entitlement --- receive some kind of governmental support; but the level of that support is usually lower. Thus potential duration does affect the total amount of earnings replaced during many spells of unemployment. Potential duration varies from as low as 26 weeks or less in most states in the U.S., to 30 weeks in Japan to a year or more in many European countries. In those countries, such as Spain, where the rate of flow out of unemployment is very low, UI laws generally specify a longer potential duration.

Table 2. Gross Replacement Rates, 1989, for a Single Worker

<u>Country</u>	<u>Rate</u>
Australia	24
Belgium	50
Canada	59
Denmark	64
Finland	57
France	59
Germany	58
Japan	28
Netherlands	70
Norway	62
New Zealand	27
Spain	62
Sweden	90
United Kingdom	16
United States	25

Source: OECD, Employment Outlook, 1991, p. 233.

Within the general choice of potential duration, is that duration variable or fixed, and what determines how potential duration varies? In most U.S. states potential duration is variable, and is determined by considerations of work history similar to those that determine the WBA.

Is there a second-tier UI program that becomes effective after regular benefits are exhausted? For example, Austria and Ireland offer unemployment assistance at lower levels of support to very long-term unemployed workers. These programs are not, strictly speaking, UI programs, but

rather are more reflections of general income-support policy. None of the subsequent discussion deals with them. But any newly-constructed UI policy should be structured in such a way that it dovetails easily with existing or proposed second-tier programs.

Is there a waiting period at the start of a compensable period of unemployment during which no benefits are paid? This is the equivalent of a deductible amount in a private insurance program. The argument for this institution is partly to avoid the necessity of incurring the administrative cost of compensating very short spells that probably do not generate any economic hardship, partly to provide incentives for workers and employers not to generate short spells. A one-week waiting period is most common in the U.S., but 10 states require no waiting period, as do nearly half of the other OECD countries, including France and Germany.

Requirements to maintain WBA. Because UI programs seek to maintain consumption among unemployed workers while at the same time encouraging, or at least minimizing the discouragement to employment, a variety of provisions have been and can be imposed to accomplish this. The main issue is whether the UI recipient is available for work. The decisions involve:

(i) Search requirements. What constitutes effective search? The items of concern here are: job contacts and suitable work. How much effort is the recipient required to make, in terms of contacting employers and demonstrating that the contacts have been made? What constitutes sufficient proof of the contacts, and who verifies them? In the U.S. many states require that the recipient present lists of contacts actually made. An unemployed bricklayer can draw benefits until exhaustion by insisting that he will only take work as a bricklayer. Is there some point during the spell of unemployment at which the definition of "suitable" becomes broader, as in Denmark, the U.K. and elsewhere? The argument for this broadening is that the length of the spell itself demonstrates that no work is available in the recipient's previous occupation, so that the value of any occupation-specific skills is greatly diminished. That justifies requiring him or her to accept a job in another occupation.

(ii) Training requirements. In addition to requiring that the worker seek jobs under a broader definition of suitable work after some duration of unemployment, some programs require the

worker to participate in a subsidized or public training or job creation program. For example, Denmark usually requires entry into a training program after 12 months of unemployment. Clearly, unless there are worthwhile training opportunities available, this requirement just becomes a way of extending the payment of UI benefits.

(iii) Bonuses and cash-outs. Several states in the U.S. have offered UI recipients lump-sum bonuses if they leave the UI rolls before some (usually short) period of unemployment is completed. The idea here is to cash out part of the UI entitlement and thus provide an incentive to workers to accept jobs more quickly.

Miscellaneous Issues. A variety of miscellaneous issues involving benefits also needs to be or can be considered in constructing a UI program. These have to do with the general administrative conditions characterizing the program and are not specific to the particular spell of unemployment that is potentially compensable. Though the first two are seemingly minor, in fact the choices made about them affect how well the program can meet its goals and avoid negative secondary effects.

(i) Frequency of payment. Though many of the issues in benefits revolve around determining the weekly benefit amount, it is not necessary that the payments be made weekly. Several states in the U.S. have experimented with biweekly payments as a way to reduce administrative costs. The potential problem is that lower-frequency payments may detract from the goal of maintaining the unemployed household's consumption if recipients are unable to budget well in the face of their reduced incomes.

(ii) Method of payment. Administrative costs are reduced if UI benefits can be paid by check or by bank transfer without any contacts between the recipient and the program agency. Programs vary greatly as to whether they require the recipient to report in person. France and the Netherlands do not require regular reporting, while Australia, Japan, Sweden and many others do. The time interval between visits varies among programs from as little as 1 week up to 3 months. The cost of a longer interval (or of no reporting) is the lost ability to determine the quality of the recipient's job-search efforts and to aid in matching the recipient to a job vacancy.

(iii) Triggered benefits. Are there labor-market "triggers" that alter the WBA or potential duration depending on the state of the labor market? In the U.S., for example, there is a national program that lengthens maximum potential duration when the state and/or the national labor market exhibit higher unemployment. The arguments in favor of these triggers are: a) When the labor market is looser, the expected duration of a worker's spell of unemployment is greater. That increases the likelihood that unemployment imposes some hardship, and justifies higher weekly benefits and/or longer potential duration; b) With higher unemployment the likelihood that the worker's skills depreciate increases, justifying greater compensation to replace this loss.

Financing

This Subsection considers the options on financing separately from those on coverage and benefits. In terms of the evolution of the program, though, the choices are not separable. UI programs that rely on different methods of financing generate different structures of benefits, because the political pressures to limit costs come from different sources. The options are listed in a hierarchy from basic to increasingly specialized.

Should the program be public or private? This seems like a silly option, since all programs have public involvement. But the Swedish program, though under public supervision, has UI funds administered by trade unions (a real possibility in a country that is 90 percent unionized). Before the British UI program was introduced in 1911, several private firms offered UI as an insurance option. With the current world-wide pressures for privatization, similar programs have been proposed in the U.K. and the U.S. The early British companies went bankrupt, and the classic argument in favor of social insurance for unemployment is that private carriers cannot insure against the common risk of a nationwide recession. A compulsory privately-operated program, with very large carriers that have sufficient reserves or borrowing capacity to weather a recession, might not have such problems.

If the unusual route of a private program is chosen, would it be compulsory or voluntary? Would it be administered through individual "beneficial funds" by trade unions, or would there be

coverage by private insurance carriers? How much government regulation of the provisions of the program would be imposed, including controls over all those issues in benefits that were discussed in the last Subsection?

Assuming the program will be public, will it be financed out of general revenues or earmarked taxes? An earmarked tax has the virtue that it creates in the public mind the notion of a self-financing program. The existence of a UI fund both limits excesses and establishes that the program differs from a "welfare"-type income transfer. Some countries — Austria, Canada, Denmark and others — combine the approaches by using general revenues to finance any deficits in the UI fund when benefit outflows exceed reserves.

If an earmarked tax is used, policy-makers must determine which among the three parties — government, employers and employees — are taxed to finance the fund, and how much each should pay.

Taxing employers on their payroll is done in every OECD program except Sweden's (essentially private) program and Switzerland's cantonal-based programs. In most countries the burden is shared between employers and employees, with employers paying a greater share of taxes in most countries (paying 100 percent of costs in most U.S. states and Italy). Clearly, the incidence of the tax — its eventual burden — will not depend on which party in these countries is assessed the tax. Participants' attitudes about the program do depend on this, though. Assessing the tax on the employer heightens employer groups' concerns about lowering benefit costs and controlling the provisions that generate them. Assessing the tax in part on the employee makes workers feel that UI benefits are something they have paid for. The cost rate — the ratio of taxes to payroll — is tied through what can be two-way causality to the generosity of the program's benefit provisions. This means that in constructing a program the tax rate that is set to some extent determines the eventual cost rate.

If an earmarked payroll tax is used, the first major issue is how the tax rate should vary with a worker's payroll cost. The tax can be flat-rate or not. Most countries, both those that tax employers and workers, and those that tax just one of the parties, assess flat-rate taxes; but in South

Africa the tax rate explicitly varies inversely with a worker's earnings. Though the tax is almost everywhere flat-rate, in most countries (but not in Italy and Japan) there is a tax base --- a maximum weekly, monthly or annual earnings beyond which no tax on the worker's payroll cost, or his or her earnings, is assessed. Limiting the tax base generates complex economic effects (see the next Section).

The main choices are:

What is the relationship between the tax base and the average wage?

Setting a higher base (with a flat-rate tax) makes financing less progressive. The choice of a tax base also can interact with choices about a maximum WBA, as there may be political pressure to limit the latter based on limitations on the tax base. Tied to this is whether and how to allow the tax base to change as nominal wages increase.

Over what accounting period is the tax base calculated? Choosing a longer (annual) period over which to calculate the base creates incentives for employers to alter turnover, since there is some point during the year for at least some jobs when the incumbents cease generating tax liabilities for the employer.

The second issue in an earmarked payroll tax is whether the tax on employers should be linked to the amount of benefits their unemployed workers have collected in the past --- whether the tax should be experience-rated or not. Only in the United States is the payroll tax experience-rated. The main argument in favor of experience-rating is that it helps the program simulate a private insurance program more closely by making employers pay for the unemployment that they and their workers "generate." Also, it provides employers with incentives to reduce the instability of employment in their establishments. If an experience-rated tax structure is chosen, a variety of choices must be made.

Most important, what benefits are to be charged against the employer's experience-rated account? Should a worker's entire entitlement be charged, or just the initial part (under the assumption that the employer is no longer responsible for the worker's unemployment if the worker has not found

a job after many weeks)? This question has been resolved in the U.S. by making employers fully responsible for the first 26 weeks of benefits, and partly responsible for the next 13 weeks (if such benefits are payable). Should benefits for short-term workers who qualify for UI based on prior base-period employment be charged to the firm from which they are laid off, or to their previous employer? The standard rule is to charge the previous employer, but that means that the tax cost that is produced is not linked to the decision that generated the spell of unemployment.

How wide is the range of tax rates to which the employer is subject? The wider the range, the more closely each employer can be made to finance the benefits collected by his or her employees, and presumably the tax can accomplish more employment-smoothing. (With no experience-rating, no such charging is possible.)

Subsumed in this issue are choices about minimum and maximum tax rates. In the U.S. the maximum tax rate to which employers may be subject must now be at least 5.4 percent (on a tax base that is less than half the average wage).

A choice must be made about the reserve method on which to base employers' experience-rated taxes. The most common method in the U.S., the reserve-ratio method, bases the tax rate on the ratio of accumulated reserves in the employer's account to the payroll.

The range of experience-rated tax rates may differ depending on labor-market conditions - -- there may be multiple tax schedules. The justification is that a higher schedule of rates may be an appropriate way of socializing the costs of the additional UI benefits that are generated when unemployment rises. The counterargument is that this departs from the purpose of experience-rating by reducing burdens on the employer in whose firm the additional unemployment originates.

Because of limits on the range of tax rates, some employers will have negative balances in their accounts. Should interest be charged on these negative balances, and, if so, at what interest rate? To be actuarially fair interest should be charged at a rate equal to the market rate on equally risky assets (perhaps a short-term bond rate). In practice, negative-balance accounts are not assessed any interest charges.

In an experience-rated system choices must also be made about the accounting period over which past benefit payments can be related to the current tax rate. A longer accounting period allows for less rapid adjustment of tax rates in response to changes in the employer's benefit experience. This has the positive effect of reducing shocks to employers' labor costs, but the negative effect of lessening the incentives that the program can provide to mitigate employment fluctuations.

D. Evidence on the Economic Effects

There have been masses of empirical evidence on the economic impact of UI programs; and the overwhelming majority of these empirical studies have been done in the past 15 years. However, while they have focussed our knowledge on a few of the issues discussed here, on many others there is so little empirical analysis, or what exists is so poorly done, that economic theory provides the sole guide to the potential effects of the programs. In a few cases the discussion refers to individual studies whose results specifically imply a conclusion. In most, though, it relies on the available syntheses of empirical work to draw the conclusions.

This Section is organized by linking the programs' provisions that were detailed in the last Section to the economic questions that underlie the goals outlined in Section B. Some of the questions cut across the various provisions, so that discussions of them rely on evidence on the effect of several provisions at once. Thorough discussions of some of these cross-cutting issues are in Hamermesh (1977), Gustman (1982) and Topel (1990).

Benefits

The major economic question about benefits, and about UI programs more generally, is how greater generosity of the program affects unemployment. This is linked to the individual-based goal of employment-smoothing and the socially-based goal of reducing macroeconomic fluctuations. The question has been answered in so many ways, and relates to such a variety of provisions of UI programs, that this Subsection discusses a number of different aspects of the evidence on the individually-based

goal. The massive evidence on this issue has been summarized by Björklund and Holmlund (1986), Burtless (1990), Cox and Oaxaca (1990), and Atkinson and Micklewright (1991). The evidence on the socially-based goal is left until a later Subsection. Much of the discussion relies on the distinction between the duration and incidence of unemployment (measured in percent of the labor force), which are linked to the unemployment rate (measured in percent) by the identity:

$$\text{Unemployment rate} = \frac{100 \times (\text{Incidence} \times \text{Duration})}{52}$$

What is the impact of a higher net replacement rate on the duration of unemployment?

This has been the most heavily-researched question in UI. There are two related theoretical bases for inferring that there would be an effect. The first stems from search theory. A higher replacement rate raises the relative cost of spending additional time searching for work (and remaining unemployed). It allows the UI recipient to be more choosy in looking for work. If search effort per week (search intensity) is unaffected by additional UI benefits, any positive effect on unemployment duration will also be accompanied by a positive effect on the post-unemployment wage. Search theory also predicts that the effect of additional benefits is smaller when there is more unemployment: Because the competition for the few job openings makes the probability of successful search so low, less search is taking place. Offering higher benefits will not reduce search as much as at other times, because there is little scope for reducing search any further. Whether search intensity is unaffected by benefits, is increased because benefits provide the means to search more efficiently (see Section B) or is reduced, and how greater replacement through UI affects subsequent wages, are empirical questions that should be subsumed under the general question of the effects on duration.

The alternative way of viewing higher replacement is in the context of choices about labor supply. A higher WBA decreases the net returns to working. So long as we believe labor supply curves are upward-sloping (and the evidence suggests that is especially so among lower-wage workers who are more likely to be UI recipients), this means the program will reduce recipients' work effort by increasing

the number of weeks they remain unemployed once a spell of unemployment has begun. This is the same prediction as offered by search theory; but here there are no implications about the effects of higher replacement on post-unemployment wages or on how disincentives change as labor-market-wide unemployment changes.

Empirical research on this issue has proceeded for the U.S., the U.K., Sweden, Germany, Canada, Spain and other countries too. At this point the evidence is completely clear that higher net replacement increases the duration of spells of unemployment. Obviously there is substantial variation among the estimates of the magnitude of the effect. A good consensus estimate, though, is that each additional 10-percent increase in the net replacement rate raises duration by 5 percent. As the theory of job search predicts, this disincentive effect diminishes as the duration of a spell of unemployment increases.

This conclusion clearly implies that higher replacement reduces search intensity. (Devine and Kiefer, 1991, present the evidence on replacement and duration in the context of search behavior.) The direct evidence on this issue (e.g., Barron and Mellow, 1979) demonstrates this: People receiving a higher WBA, other things equal, spend fewer hours per week searching. The evidence on the impact on post-unemployment wages is less clear, but there is little indication of any positive effect. Taken together, the evidence strongly suggests that recipients use a higher WBA to increase the duration of their spells of unemployment, that search intensity is reduced, but that total search effort during the (longer) spell of unemployment is unchanged. For a given incidence of unemployment, a higher WBA increases the unemployment rate because it lengthens duration. The evidence on this effect suggests UI operates counter to its goal of employment stabilization.

What is the effect of greater potential duration on the duration of spells of unemployment?

With the first question, this one exhausts the issue of the impact of UI on unemployment duration. The impact of greater potential duration can also be explained both by search and by labor-supply behavior. An additional week of benefits changes the cost of search for that week. With an additional week of potential duration, the point at which the costs of search drop because UI benefits are no longer available

changes. This suggests that we should observe a large fraction of the unemployed taking jobs very shortly after they exhaust benefits, and very few taking jobs just prior to exhaustion. Viewed in the context of labor supply, an increase in potential duration (at a fixed WBA) is equivalent to an increase in unearned income. Since we assume people value leisure, a higher potential duration reduces the supply of labor and increases actual duration.

Two approaches have been used to examine this question. The first, and much more widespread, simply compares the duration of spells among a group of unemployed workers or across individuals to the potential duration of benefits. (These studies are most convincing when differences in potential duration arise from differences in laws across jurisdictions, or from legislated changes in potential duration.) The evidence generally supports the prediction that longer potential duration results in longer spells, other things equal. More recently, several studies (e.g., Meyer, 1990) have examined the fraction of unemployed workers whose spells have lasted t weeks who find jobs during week $t+1$ (the hazard rate of leaving unemployment). The hazard rate drops sharply during the last few weeks of eligibility, and rises sharply immediately after benefits are exhausted.

Taken together, the evidence suggests that increasing potential duration does increase the average duration of spells of unemployment. Unlike in the answer to the first question, though, no consensus is possible about the size of the effect. All we can be sure of is that longer potential duration increases average duration, and thus the average rate of unemployment. Here too, a more generous UI program generates impacts counter to the goal of stabilizing employment.

An important policy question is how the impact of a 1-week increase in potential duration on the unemployment rate varies with existing rules on potential duration. On one level the answer is nearly clear: Since the number of unemployed workers decreases steadily as duration increases, it is almost certain that the effect is larger if potential duration is short. A more subtle question is how a 1-week increase in potential duration affects the hazard rate as potential duration increases. No theory yields unambiguous predictions on this question, and there is no evidence on it.

How does a more generous UI system affect the incidence of unemployment? Define generosity as weaker eligibility criteria, higher net replacement and a longer potential duration. The question is how these affect the probability of moving from employment to unemployment.

Assume that workers know that some businesses, and the industries they operate in, have more variable demand. That being the case, in the absence of a UI program, these firms will have to pay a wage premium to attract otherwise equally capable workers to this more risky activity. Consider what happens when a UI program is instituted (and is financed by general revenues or by a payroll tax on employers or employees that is not experience-rated). Employers can attract equally qualified workers with lower wage rates than before, because UI benefits now compensate for part of the potential loss of income stemming from the risk unemployment. This induces the employer to reduce employment by more when product demand drops, because the government (or all workers, or all firms) now bears the cost of the decision. This is especially so in the riskiest businesses, so the program leads to their expansion as their costs, and eventually the prices of their products, are cut relative to those of the average business. An imperfectly experience-rated UI program thus also cross-subsidizes risky businesses and industries, leading to their expansion and to an increase in the average incidence of unemployment among labor-force participants. The more generous benefits are under such a program, the greater the impact on the incidence of unemployment.

Much of the evidence on the impact of UI programs looks at the effects of more generous benefits on the unemployment rate in an area or at its variation over time in an economy. Other studies examine the probability that a worker is unemployed during a particular survey week. Both of these essentially consider the impact on both duration and incidence together. A very few studies use retrospective data to examine the impact of higher benefits on the probability that a worker was unemployed during some time interval (usually the previous calendar year). The first group of studies generally shows the unemployment-increasing effects of higher benefits, while the latter group indicates that the incidence of unemployment is greater among otherwise identical workers who are eligible for

higher benefits. Taken together, the results show that, independent of its impact on duration, a more generous structure of benefits increases the incidence of unemployment as well.

How does a more generous UI program affect employment? The issue is what is the effect of UI on the total amount of goods and services produced in the market (GDP), since in the long run worker-hours are combined with other productive inputs (that it makes sense to assume stay unchanged).

The three previous questions dealt with impacts on the unemployment rate. For a fixed labor supply the answers to them imply that more generous benefits reduce employment and thus GDP. But it is incorrect to assume that the supply of labor does not change when benefits increase or eligibility is eased. Instead, as with any other insurance program, when the risk is compensated more generously, the insured will undertake more of the risky activity. In this case the risky activity is participation in the labor force, and the risk is that participation will include weeks of unemployment. Put differently, more generous UI makes participation relatively more attractive by raising the expected returns to time spent in the labor force.

There has been a small amount of research on this issue, and it generally supports the theoretical predictions. A more generous benefit structure, especially less stringent qualifying restrictions, induces more participation and hence more employment, other things equal. To some extent this offsets the impacts noted in the answers to Questions 1 through 3, though the evidence suggests the offset is only partial. Because those workers induced to participate by more generous UI programs tend to have higher probabilities of becoming unemployed, the change in the composition of the labor force raises the unemployment rate.

Financing

Much less empirical research has been produced on the economic effects of alternative methods of financing UI than on those of benefits. Except for empirical studies of various provisions of experience rating in the United States (see the summary by Hamermesh, 1990), the results that are used

to infer the impact of financing stem from more general studies of labor-market issues. The major questions about financing are dealt with in order from general to specific.

Who really pays for UI benefits? This is a standard issue of tax incidence, or, viewed more generally, of the incidence of a government program. If the method of financing is a payroll tax that is not experience-rated (as in all countries but the U.S.) the answer to the question is the same as to questions about the incidence of payroll taxes generally. The effect depends on the elasticity of labor supply to the market: If it is completely inelastic, the entire impact of the payroll tax is to reduce wages (and leave the net cost of labor, and thus employment, unchanged).

In an experience-rated system the issue is much more complex, and there are no simple theoretical inferences to be drawn. Assume that, as in a non-rated system, the burden of the tax is entirely on labor. Is the burden disproportionately on labor in those firms that use the system more heavily? Indeed, in the extreme, is a perfectly experience-rated system neutral, in the sense that the market fully adjusts so that each dollar of expected benefits is financed by higher expected tax rates that in turn generate reductions in expected wages of one dollar? This kind of superneutrality is possible, but only in a perfectly experience-rated system, and only if one believes that markets are that efficient. In an imperfectly rated system, the nonrated part of the tax will be borne as a general payroll tax; but will the rated part be adjusted fully and differentially across firms and across workers depending on correct expectations of their likelihood of generating UI costs?

Ignoring issues of experience-rating, the empirical literature on the incidence of payroll taxes is inconclusive on this question. While some specific studies suggest the payroll tax burden is not entirely borne by labor, the huge general literature on labor supply suggests that for most groups it is almost completely inelastic. This implies that a nonrated payroll tax in industrialized countries will be borne by workers generally. There is no empirical evidence on whether an experience-rated tax affects wages differentially across firms that differ in their propensity to lay off workers; and there is no evidence on whether a partly or fully experience-rated UI tax affects the wages of workers within a particular firm differentially depending on differences in the likelihood of their being laid off (and generating higher UI

tax costs). At this point the only conclusion about the payroll tax that finances UI benefits in developed economies is that it is probably borne by labor in the form of lower wage rates. We cannot create a program of UI benefits and view it as a transfer of income from firms to workers.

How does a limit on the tax base affect employment and wages? The issue here is the differential impact of the limit on workers whose labor costs differ. For a given tax rate a lower tax base raises the relative cost of employing low-wage workers. With a nonrated tax, this means that either wages adjust, reducing the relative take-home pay of low-wage workers (and keeping the relative net cost to the employer constant); employment adjusts, so that the ratio of employment of more- to less-skilled workers economy-wide increases, implying an increase in the nonemployment of low-skilled workers; or some combination of both, implying that there is at least some decrease in the relative earnings of low-skilled workers. The empirical issue is how large the change will be, which depends on the substitutability of workers by skill.

In an experience-rated system the issue is more complex, as it depends on employers' ability to recognize relationships between the amount of UI costs that a group of workers generates and their average wage level. If this is fully recognized, we get the superneutrality result that the program has no impact on relative employment (or nonemployment) by skill group. Absent this recognition, an experience-rated system will produce the same relative decline in the position of low-skilled (low-wage) workers as a nonrated system.

As with Question 1, there is no specific evidence from UI systems. There is, though, a growing literature on substitution of workers by skill class, including disaggregations of the labor force that are correlated with wage level (Hamermesh, 1993, Chapter 3). The clear suggestion from these studies is that employers do substitute between skill groups as the relative costs of employing them change. The empirical work is too diverse to allow any conclusion about how great this substitution is; but it is surely sufficient to allow us to conclude that, unless the UI tax is perfectly experience-rated and employers can essentially assign UI costs to groups of workers, a lower limit on the tax base results in lower employment and/or lower wages of less-skilled workers.

What are the effects on employment and unemployment of choosing an experience-rated over a nonrated financing scheme for UI benefits? All the theoretical arguments show that, within a particular system of benefits, and with the behavior of a particular labor force, choosing experience-rated payroll taxes generates lower layoff unemployment, and higher employment on average, than does a nonrated system. The argument was suggested above. Charging employers for the UI benefits generated from their firms allows the price of labor that they face to reflect all costs, both wages and UI benefit costs. This induces firms that produce greater costs to the UI system to contract relatively, and it encourages all firms to reduce fluctuations in employment. Both effects raise the average level of employment economy-wide and reduce the unemployment rate. Conditional on a given structure of eligibility and benefits, the theory suggests that experience-rating will do a better job of achieving the goal of stabilizing employment (will reduce the destabilizing effects of UI benefits).

The ideal evidence for this proposition would be a before-after comparison of the impact of imposing experience-rating on a system whose benefit structure remained unchanged. No such evidence exists; and we must rely on the rather extensive literature that examines the effects of the various provisions of experience-rated financing in the U.S. The difficulty with this restriction is that we cannot tell how applicable the results are to other economies, given the institutional and behavioral differences. All we can infer is the impact of marginal changes in the parameters of states' experience-rated tax structures.

Within this very narrow framework there is a rapidly-growing and now quite convincing body of empirical research. The strongest evidence is that a lower maximum tax rate or a lower tax rate on employers with negative balances in their accounts increases the incidence of unemployment (increases fluctuations in employment). Beyond this, there is some slight evidence that a higher minimum tax rate, and thus a higher tax on firms that generate little or no unemployment, raises unemployment and increases employment fluctuations. A fair conclusion from this literature is that in general more experience-rating does reduce employment fluctuations in the U.S. This suggests that imposing a payroll

tax that is at least partly experience-rated on a UI system would reduce its costs and lower unemployment, but that particular experiment has never been attempted.

Other Economic Impacts

All of the questions discussed in this Subsection involve issues in both benefits and financing. Moreover, each relates to the potential non-labor market goals of the UI program that were presented in Section B.

Do UI benefits smooth consumption? This issue was for many years analyzed as one of "benefit adequacy," that is, were the benefits sufficient to replace a large fraction of the reduction in family income? This gets toward the consumption-smoothing goal that was discussed in Section B, but it is not directly on target. A family might lose income as a result of a spell of unemployment of one family member; but total consumption, including of goods produced in the home, may not change or may drop substantially. To examine the success of UI in smoothing consumption one must examine consumption directly. The issue is the extent to which UI benefits (and any changes in the shifted tax burden that accompany the payment of higher benefits) loosen the liquidity constraint that may be engendered by the loss of income.

There is a large literature of studies of benefit adequacy. These generally find that other labor-force responses do not suffice to make up the difference between the lost earnings and the UI benefits received by the unemployed worker. Only one study (Hamermesh, 1982) has examined the extent to which UI benefits loosen the liquidity constraint facing unemployed American households. The evidence suggests that roughly half of all benefits are spent in a way that suggests the household would face a drop in consumption without them. Applying the results to other countries, the longer duration of benefits suggests that they accomplish even more in this regard (since households presumably face a more severe liquidity crunch the longer a member has been unemployed).

This discussion ignores the impact of the provision of publicly-funded UI benefits on private saving. Without UI individuals would accumulate precautionary savings to cover spending during

spells of unemployment. To some extent UI will displace some amount of this saving. We might thus find that UI benefits appear to overcome liquidity constraints, even though those constraints would not exist if there were no UI program. There has been no empirical analysis of this issue. It does imply, though, that the empirical evidence provides an upper bound on the efficacy of UI in meeting the goal of consumption-smoothing.

Does UI stabilize the macroeconomy? The discussions of the stabilization effects of UI all dealt with the behavior of individual agents. Keynesian macroeconomics argues that the automatic increase in benefit payments that accompanies cyclical declines in product demand will at least partly maintain consumer spending and lessen the reduction in aggregate demand. This assumes that the taxes used to finance UI do not change along with benefits to reduce their impact. This suggests that in a long recession any countercyclical effect of benefits will be offset somewhat by experience-rated financing, as taxes are increased based on recent increases in benefit payments. In the framework of more general macroeconomic theory any impact of the UI system on spending will be lessened. To some extent fluctuations in aggregate spending will be reduced by changes in the money market; and some of the effects will be offset by workers' and employers' responses to their expectations of the changes that generate the increase in unemployment.

A strand of empirical work from the 1960s through early 1980s examined the countercyclical impact of the UI program. The best inference from this literature is that the American program reduced the magnitude of cyclical fluctuations of GNP by no more than 10 percent, an effect that may even have diminished during the 1980s (Dunson et al., 1991). The impact may be somewhat larger in European programs that offer more generous replacement and longer potential duration. Both inferences, though, ignore the possibility that the program displaces private savings (see above) that would to some extent mitigate fluctuations in GDP as unemployed workers dissave to maintain their consumption. Taking all this together, it is reasonable to infer that UI programs are not very important in mitigating cyclical fluctuations in spending, and presumably in unemployment too. Any

macroeconomic impacts are likely to be small, suggesting that the goal of cyclical stabilization should not be central in considering whether or what type of UI program to adopt.

Do UI programs redistribute incomes? In groping toward a partial answer to this question, make the apparently reasonable assumption that benefits by themselves equalize the distribution of income. Indeed, the best evidence on this issue (for example, Ehrenberg et al., 1978) is based on comparisons of the distribution of UI benefits and household incomes. The studies suggest that they do not go to households in the lowest two deciles, but are most heavily concentrated in households with income at or somewhat below the median.

Beyond this assumption, the answer to the question is tied up with all the issues of tax incidence that were crucial in answering questions in the previous Subsections. The answer is more complex for an experience-rated program, since there is greater opportunity for sorting of workers by propensity to become unemployed. Regardless of whether experience-rating is used, we can be fairly confident that a lower limit on the tax base, other things equal, reduces the ability of the program to redistribute income. Obversely, lower maximum benefits, and longer potential duration (since low-wage workers tend to be unemployed longer) strengthen the redistributive effects.

Does a UI program affect GDP by shifting resources away from their most efficient uses?

The theoretical argument here is that the program subsidizes risky activities and leads to their relative expansion. This will be true to the extent the financing is not perfectly experience-rated among firms. At the margin resources are diverted from their best uses, so that total output is reduced. Some simulations have attempted to measure the size of the reduction. Not surprisingly given the small scope of the program, the loss is a tiny fraction of GDP. Nonetheless, there clearly is some reduction.

General Conclusions

A consideration of the evidence on this very diverse set of economic issues leads to some interesting overall conclusions. If the program is perfectly experience-rated and workers and employers on average have unbiased expectations about the risks of unemployment and save accordingly, the only

effect of UI is to substitute payroll taxation of workers' earnings for their private savings. There is no change in the level of employment or in its fluctuations. The only net impact is a reduction in the aggregate rate of private savings. If private savings did not suffice to avoid liquidity problems during some workers' spells of unemployment, economic welfare may be raised. It is a matter of trading off the gains from allowing some unemployed workers to reduce the fluctuations in their consumption against the costs to society of the reduction in private saving.

In the real-world cases of imperfect experience-rating, as in the United States, or no experience-rating, as in other developed countries, additional economic impacts arise. There is more scope for redistributing income, with the direction of the redistribution dependent on the structure of benefits and limits on the tax base. However, introducing such a UI program increases the extent of fluctuations in employment, and, by making labor a relatively more expensive input into production, biases employers toward more capital-intensive techniques. Offering UI benefits aids an economy chiefly by maintaining spending of households that contain unemployed workers. The costs of helping workers who would become unemployed even in the absence of a UI program are reductions in average employment and in GDP, and the additional unemployment that the UI program induces when shocks to product demand occur.

E. Transferring UI Programs to Developing Economies

This Section highlights those areas where differences in labor-market structure between developed and developing economies could lead to differences in how one might structure UI programs in them. Rather than going through all the goals and features listed in Sections B and C, the discussion is organized around our knowledge of the behavioral differences between the two types of economies that might be important for UI. Since this is designed to be a broadly applicable guide, it ignores specific institutional problems that must be accounted for when constructing a UI program in a particular country.

While very few developing economies have UI programs, they are not unknown. As of 1983, Barbados, Bolivia, Chile, Cyprus, Ecuador, Egypt, Ghana, Mauritania, Mauritius and Panama had

some sort of UI program (ISSA, 1983; ILO, 1988). A detailed comparison of the provisions of these programs to those of UI systems in OECD countries that were discussed in Section C is not informative; but a general comparison between the two groups of countries points out some interesting differences and similarities. In decreasing order of their starkness, these are:

- UI systems in developing countries are more likely to rely on shared employer/worker financing of benefits.
- Potential duration of benefits is generally shorter.
- Waiting periods are more likely.
- Programs rarely cover government workers.
- Net replacement rates are about the same.

Obviously a major, indeed a defining difference between labor markets in developed and developing economies is the absence of industrialization in the latter. Instead, there are large urban traditional sectors characterized by casual employment and very small-scale and often short-lived operations, with the modern sector being relatively small, and with both dwarfed by traditional agriculture.

Even these essential, but very broad differences offer some guidelines for structuring UI programs. Given the small size of establishments, their rapid turnover, and the lack of standard record-keeping, covering urban traditional employees seems undesirable. Similarly, covering small firms is likely to be difficult administratively; and their ubiquity and high failure rates suggest that offering benefits to their former employees would add tremendously to the costs of a UI program. Taken together, these considerations suggest that coverage be limited to firms above some size threshold that have been in operation for some period of time. At least one year's operation should be required; and perhaps a lower limit of 10 employees should be necessary for coverage of a firm's workers.

In the theoretical analysis of developing labor markets the major contribution has been the model of economic dualism. An essential characteristic of this model is the assumption that the supply of labor to enterprises in the modern sector is perfectly elastic (i.e., that real wages, and presumably also wages relative to traditional industry are rigid). The source of this rigidity may be

behavioral, stemming from the payment of profit-maximizing efficiency wages by modern-sector employers. Or it may be institutional, arising from spillovers from wage-setting in the government sector, or from pressures by government-supported labor organizations. While wage rigidity may not characterize all developing countries (for examples, the NICs of East Asia), it is a potentially important characteristic of many of them. It provides an important structural/behavioral distinction between them and developed countries (Fields, 1987).

In order to see how recognizing the existence of labor-market dualism should affect how we structure UI programs, it is worthwhile examining briefly the impact of UI on wages and employment. (This is just a formalization of the discussion in Section D.) Figures 1a and 1b depict a labor market under the assumption (which was implicit throughout Section D) that real wages are flexible. In both figures the initial equilibrium is shown by the intersections of S and D . In Figure 1a a payroll tax is imposed on employers. If there is no response by workers to the UI benefits financed by this tax, the only effect is a drop in the real wage paid to the intersection of S with the new labor-demand curve, D' , and a slight drop in employment to E_1 . The supply curve is drawn as nearly vertical, reflecting the discussion in Section D, and leading to the conclusion that the tax is borne by labor.

Labor supply will, though, be affected by the creation of a system of UI benefits, for they make participation in the labor force more attractive. This leads to a rightward shift in supply, to S' , a further decrease in the real wage paid, but an increase in employment. (This is the effect discussed in Section D under Question 4.) Whether or not E_1 exceeds E_0 depends on the magnitude of workers' responses to the insurance the program offers.

If the tax is imposed on workers' earnings rather than on employers' payrolls, as in Figure 1b, the effects on wages received are similar. The real wage paid rises, as supply is reduced from S to S' ; but the net wage falls, since the vertical distance between S and S' exceeds the rise in the equilibrium wage paid. If, as is likely, workers respond to the benefits that the tax finances by increasing their willingness to assume the risk of labor-force participation, supply increases from S' , perhaps back to S .

Figure 1a. UI Taxes and Benefits with
Flexible Wages: Tax on Employers

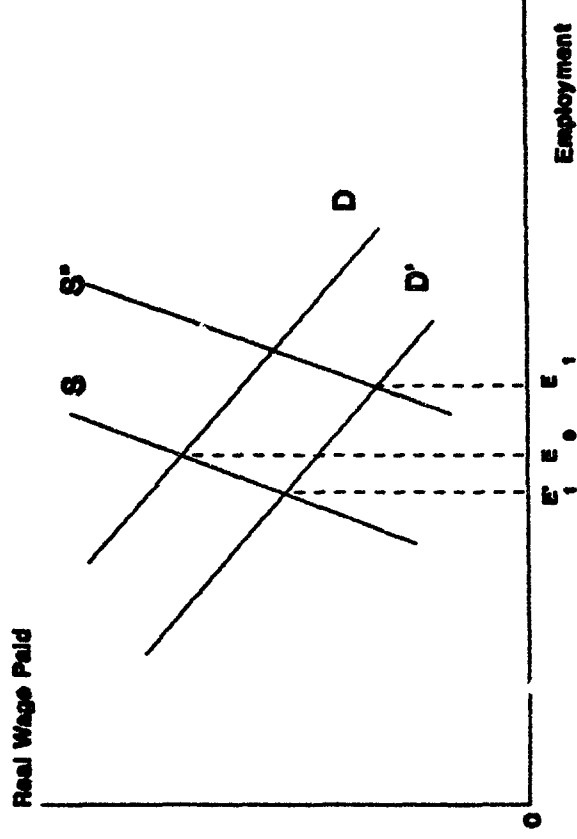
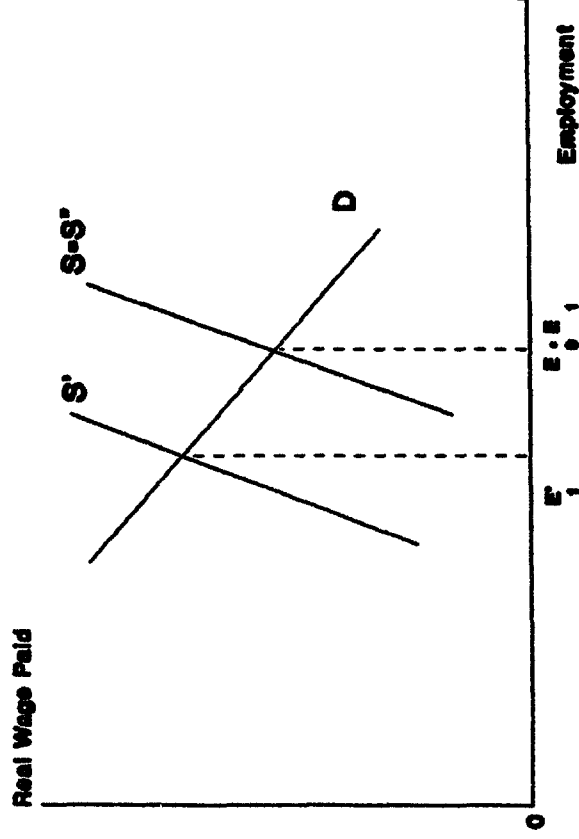


Figure 1b. UI Taxes and Benefits with
Flexible Wages: Tax on Workers



(equals S in the Figure). The real wage paid, and the net wage, are decreased further. Employment rises above E_1 , perhaps back to E_1 (equals E_0).

These are standard results in the theory of tax incidence. The only novelty is the fillip added by allowing supply to respond to the existence of the UI benefits that are financed by the tax whose incidence is being analyzed. The results depend crucially on the assumption of flexible wages. They show that the nominal payor of the tax that finances the program has no important impact on its eventual burden.

The invariance of the wage burden to the choice of how to assess the tax no longer holds if real wages are rigid (for example, due to labor-market dualism). Consider a labor market described by Figures 2a and 2b, with initial equilibrium in the modern sector at the constant real wage paid, with employment at E_0 , and with the urban labor force at L_0 . (This means that the fraction unemployed before a self-financing UI system is created is $[L_0 - E_0]/L_0$.) What are the effects of financing a UI system by a payroll tax? In that case (as in Figure 1a) the demand for labor is reduced to D' . Because wages are rigid, the only effect is on employment, which drops to E_1 . If rural workers are aware of the availability of UI benefits, the supply of labor to the urban sector shifts outward to S' , just as in Figure 1a. The net result is a decline in urban modern employment, and a rise in the urban unemployment rate (in the size of the urban traditional sector). These are not desirable outcomes.

These outcomes need not arise in a self-financing UI system. If UI benefits are financed by a tax on earnings, as in Figure 2b, there is no reduction in labor demand. Instead, and as in Figure 1b, the supply of labor shifts leftward (to S) in response to the tax. If, as seems reasonable, urban and rural workers are aware that the tax finances UI benefits that on average equal total taxes, the net effect is to shift the supply of labor to the urban area back to S' (equals S). In this case there is no net impact on either employment or urban unemployment.

The same results hold in a dynamic model that explicitly accounts for rural-urban migration (e.g., Harris and Todaro, 1970). In equilibrium the unemployment rate is an increasing function

Figure 2a. UI Taxes and Benefits with Dualism (Fixed Wages): Tax on Employers

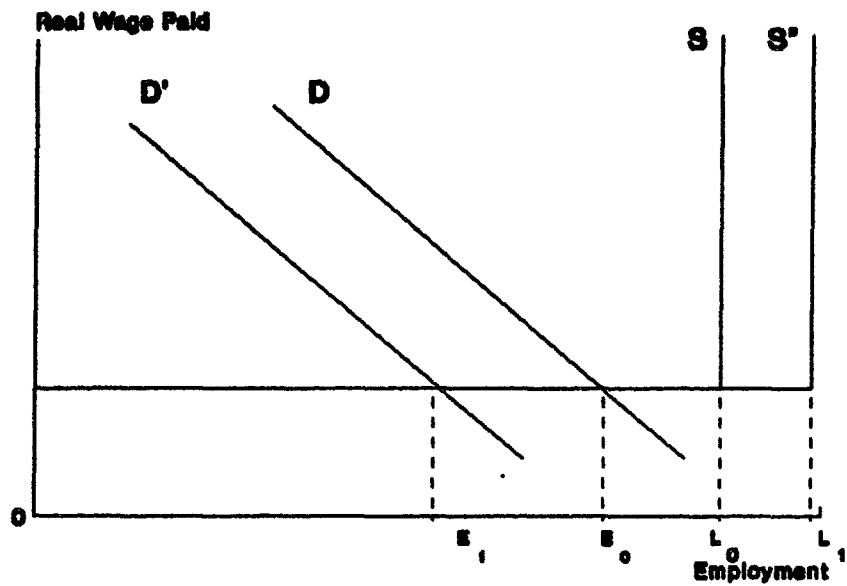
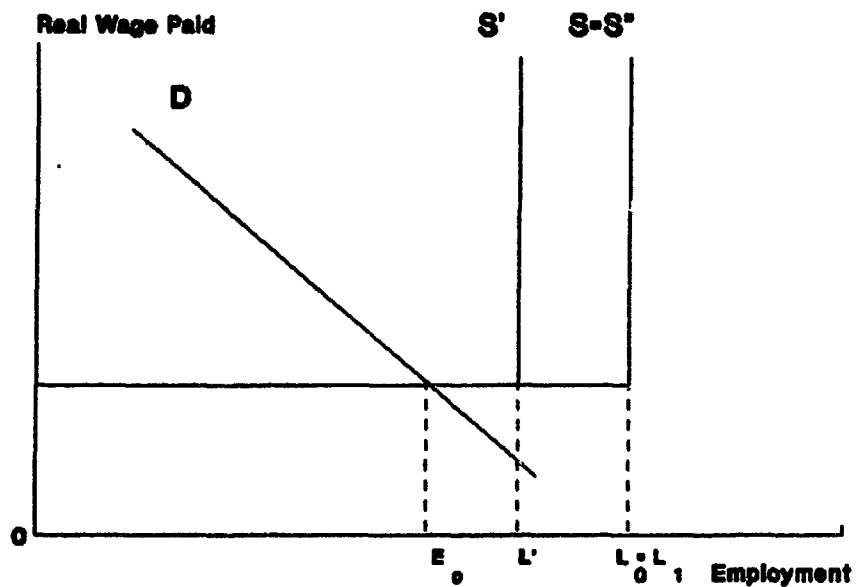


Figure 2b. UI Taxes and Benefits with Dualism (Fixed Wages): Tax on Workers



of the size of the difference in net incomes between the modern sector and the rural area and of the rate of growth of productivity in the modern sector, and a decreasing function of the rate of growth of modern-sector product demand. If the tax is assessed on employers, but urban workers are eligible for UI benefits, the initial effect is to increase the rate of rural-urban migration. In equilibrium the results are the same as in Figure 1a, except that the dynamic model tells us in addition that the urban sector will grow. If the tax is assessed on workers' earnings, there is no net effect on the size of the urban sector, just as there is no impact on employment or the unemployment rate.

This analysis demonstrates that, to the extent we believe that labor-market dualism characterizes developing economies, UI benefits should be financed by taxes on the earnings of workers in the modern sector. Unless this is done, the UI program will reduce modern-sector employment, increase the size of the urban traditional sector, and stimulate rural-urban migration. Unlike in economies where we are sure that real wages are flexible, the choice between parties on which to assess the tax that finances UI benefits matters crucially if real wages are rigid.

The discussions in Sections B and D made it clear that the best justification for UI is its role as insurance that allows households to stabilize consumption. Whether this goal is a better justification in developing countries depends on two issues: (i) For a given uninsured loss of consumption, is the resulting loss in utility greater in developing countries? (ii) Is the lost consumption that is insured against greater (in percentage terms)? Consider each of these issues in turn.

The impact of the lost income on the unemployed household's utility depends on two things. First, was the household able to save during good times, i.e., to self-insure against the potential loss in consumption that might occur during a spell of unemployment? There is no evidence, or even intuition, to suggest whether modern-sector workers in developing economies are more or less able to save. Second, if there is a shortfall of savings, and consumption were to drop if UI benefits were not received, what is the loss in the household's well-being? Assuming, as seems reasonable, that the household in the developing economy starts with a lower living standard than its developed-country counterpart, the issue is whether relative risk aversion --- the percentage increase in utility in response

to a given percentage gain --- increases or decreases with income. Here the intuition and theoretical discussion (e.g., Arrow, 1971) provide some guide, suggesting that relative risk aversion is probably increasing. This implies that a given percentage drop in consumption is more burdensome the higher the initial consumption. By itself, this inference suggests less of a justification for UI as consumption insurance in developing countries than elsewhere.

Income losses among unemployed workers are unlikely to be equal in developed and developing economies. In the former unemployment rates are usually quite low, so that the duration of unemployment is not very long in most cases. In the latter urban unemployment rates are huge, suggesting that the odds of finding another high-paying modern-sector job are low. With a much larger loss in income, the utility loss from the decline in consumption is larger in developing countries, so long as workers are no less myopic than their counterparts elsewhere. These considerations suggest that UI is at least as well justified as consumption insurance in developing countries as elsewhere.

The existence of higher unemployment rates in developing countries (or, viewed differently, the relatively large urban traditional sectors) suggests that the optimal net replacement rate and potential duration may differ from developed economies because the disincentive effects on job-seeking may differ. The evidence in Section D suggested that the disincentive effects of higher replacement diminish with the duration of the spell of unemployment. Together with the assumption that the duration of unemployment (of employment outside the modern sector) is very long, this suggests that the disincentive effects of higher replacement or longer potential duration will be small in developing economies.

Before one draws the obvious inference that net replacement should be quite high in UI programs, rather than roughly the same as in the few developing countries that already have UI programs, some economic and political considerations are in order. First, the justification for UI as maintaining consumption diminishes as the replacement rate is increased, since at least some of the lost consumption should have been insured against. Second, paying a relatively high UI benefit over a long potential duration poses the political problem of creating a visible class of relatively (to urban traditional

employment) high-income earners who are nonproductive. Taken together, these points suggest that while narrow economic considerations argue for high net replacement and long potential duration, other considerations suggest these be kept lower and shorter.

The impacts of UI on the level of economic activity and on the distribution of net incomes will differ from what the discussion in Section D predicted, if we assume that the labor market is characterized by rigid wages (as in Figure 2). If the system is financed by a tax on earnings, as recommended above, there is no impact on resource allocation across sectors, since the relative costs of labor to particular sectors are unchanged. The incidence of the costs and benefits of the system are entirely on labor, so that the distributional impact of a UI system is easier to trace than if wages were flexible. If the earnings tax is proportional, or proportional up to a ceiling, and if net replacement rates are constant up to a maximum benefit that is related to the ceiling on the earnings tax, the direction of the impact depends solely on the correlation of the probability of being unemployed with the household's income (among households in the modern sector). Making the reasonable assumption that this correlation is negative, we may infer that such a UI system would equalize net incomes within the modern sector.

If we maintain the assumption of rigid real wages, but finance the UI system by a payroll tax, the implications about the sectoral impacts change somewhat. Assuming that the supply of labor to each sector is elastic over the relevant range of employment, failure to experience-rate the tax will not alter the mix of activities across sectors. Relative labor costs would be unaffected by sectoral differences in the variability of employment. However, experience-rating the payroll tax would lead employers to avoid laying off workers when product demand drops, and would reduce the overall rate of urban unemployment. This would partly offset the shift in demand in Figure 1a from D to D' and the concomitant reduction in modern-sector unemployment. It implies that any payroll tax used to finance the UI system should be experience-rated.

Institutional and behavior differences suggest several miscellaneous considerations in structuring UI programs in developing countries. Employment in the government sector, or by

government-owned enterprises, constitutes a much greater proportion of modern-sector employment. In many cases wage-setting by the public sector spills over into private-sector wage setting. A pay increase in the government sector will eventually raise labor costs in modern private-sector firms, leading to a reduction in the amount of labor those firms demand, and an increase in costs to the UI system. With a UI system the potential impacts of government wage policy expand, and the agency in charge of the UI system must take the impact of that policy into account in planning its finances.

Many developing countries lack well-developed postal systems; and the bureaucratic apparatus for paying benefits and aiding in job search does not exist either. This offers planners a choice about how to structure the physical aspects of paying UI benefits. The answer seems quite clear: Pay benefits in person at an office that aids in job search. This requires creating an administrative superstructure; but such a structure is much more reliable, and more likely to be acceptable, than the payment of benefits by mail. The use of mail payments in OECD countries is a recent development that grew out of long experience with payments in person.

In the transition to a newly constructed, self-financing system, every planner is faced with a problem of when to start assessing taxes and paying benefits. To avoid using government contributions to finance benefits during the phase-in period, payment of benefits could be delayed for some time after taxes are initially assessed; or, as in the United States, the initial tax rates can be set high enough to allow the fund to build for several years. The difficulty with the delay, especially if the taxes are on earnings as was recommended, is that workers are unlikely to wish to be taxed now to finance benefits several years in the future, given high turnover rates in modern-sector jobs. That being the case, the more desirable path is to begin assessing taxes and paying benefits simultaneously, setting an initial tax rate that is well above projected benefit payments.

F. Some Suggestions for Research

While a compendium of provisions of UI programs in developing countries exists (ISSA, 1983), there has been no basic research on the economics of these programs that might be useful in modifying them and in structuring programs for other countries. The research summarized in Section D all is from developed economies. Studies from developing countries are needed; but such research should not merely replicate the myriad studies of microeconomic behavior in the presence of UI programs in developed countries. Rather, it should aim toward providing answers to the theoretical questions raised in Section E that determine the transferability of what we have learned in developed countries.

The issue underlying the most important recommendation in Section E is the existence of labor-market dualism. Clearly, much effort has been devoted to studying this issue empirically. It should, though, be examined in the context of UI programs. If dualism is not important, and UI programs are financed by imperfectly experience-rated payroll taxes, we will observe greater employment fluctuations in covered industries than in otherwise similar uncovered employment. The question, of course, is what is "otherwise similar." A study that can answer the questions would use industry data on employment and output in several developing countries that have UI systems, and compare employment-output elasticities there to those from similar industries in carefully chosen developing countries that do not offer UI. Essentially, pairwise comparisons of elasticities by industry should be examined.

If we find that the elasticities are higher in covered industries compared to the same industries in countries without UI, we can infer that labor markets in countries with UI are not characterized by dualism, at least for the purposes of analyzing the impact of UI. Alternatively, if we cannot discern any difference between elasticities, we may infer that the UI program does not alter employment patterns, perhaps because real wages are indeed rigid. That information should be useful in determining the appropriate structure of UI programs in developing countries, as it tells us whether Figure 1 or Figure 2 is more appropriate.

The other major issues in Section E were the transferability of the goal of maintaining consumption, and the appropriate potential duration of benefits and the net replacement rate. Studying

these requires learning how providing UI benefits affects consumption patterns and unemployment duration. Again, an ideal approach would involve pairwise comparisons between carefully chosen developing countries, with one in each pair having a UI system and the other not. This affords a test that is impossible in advanced countries, since no potential comparison group (that does not offer UI) exists.

While some budget studies have been conducted on households in developing countries, none has focussed on adjustments that are made in response to unemployment (or to an involuntary shift from modern to traditional employment) of a household member. Longitudinal diary data on the expenditures of a large sample of households can be used to infer how consumption responds to a period of unemployment, or to a permanent shift into or out of the modern sector. Moreover, by using the same questionnaire in otherwise similar countries that do or do not offer UI benefits, their impact on patterns of adjustment of consumption can be inferred. If we find no differences in patterns of adjustment between pairs of countries, we can infer that households in the country offering UI are sufficiently far-sighted to smooth consumption in response to the expectation of unemployment. Conversely, greater smoothing in the country offering UI provides a good justification for offering benefits as a way of easing the hardships facing myopic or liquidity-constrained households.

A similar set of sampling frames should be used to infer how benefits affect job-finding. During the past 15 years labor economists have increasingly relied on the distinction between incidence and duration to analyze unemployment. Unfortunately, we have little information from developing economies that would enable us to apply this very fruitful dichotomy. Discovering what patterns of unemployment and nonemployment duration are in developing countries, and then comparing the micro data across matched UI–non-UI countries, is essential for understanding the structure of unemployment in developing countries and how UI programs might affect it differently from their impacts in developed labor markets.

G. Conclusions

Unemployment is a social insurance program, one of a class that provides compensation for lost income by requiring individuals and/or employers to pay taxes into a common fund. It is part of a general safety net that citizens of developed countries have built up around themselves. It is unique among such programs, in that it offers payment for an event that is partly preventable and that is not physically painful. It thus differs from old-age and disability insurance, from compensation for work-related injury and illness, and others. This exposes it to greater criticism from citizens who are opposed to any social insurance; and these characteristics impose on planners who construct UI programs an obligation to take them into account.

This study has considered in detail the various goals that have been adduced for UI and tried to distinguish which make sense. In some cases the goals run counter to what UI programs actually do; but one goal — the provision of consumption insurance — is at least partly met by typical UI programs in developed countries. Part of the paper outlined in detail the parameters of a typical UI program and their ranges in industrialized countries. The evidence on the economic impact of these parameters should provide planners with a basis for choice that can guide them in constructing UI programs elsewhere.

Experience and evidence in developed economies may carry over into LDCs, but we just do not know. Several characteristics of developing economies, particularly the possibility that labor-market dualism is important, suggest the need for care in constructing UI programs there. In order to provide the evidence necessary for this effort, this study suggests several lines of research that can answer questions about the validity of the consumption-insurance goal in developing countries and the appropriate structures of taxes and benefits.

As nations develop their industrial sectors UI becomes an increasingly attractive policy option. Developing countries are fortunate in having the experience and evaluations of UI programs in developed economies. Though, each country must account for the unique aspects of its labor market,

and though the information gleaned about UI in developed economies is not fully transferable, it is at least somewhat instructive.

Nothing has been said about the possibility of constructing UI programs in the formerly planned economies of Eastern Europe. The program outline presented in Section C is as useful there as in developing countries. But the discussions in Section E about dualism and the size of the modern sector are hardly applicable. What is appropriate is absolutely unclear at this point, since the eventual nature of the more basic economic institutions that will arise is unknown. Nonetheless, the evidence from Western countries can still provide guidelines for choosing program parameters; and the discussion of program goals should force people who make policy to think about their expectations for any UI program that is proposed.

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