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David Neumark

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ABSTRACT

The Great Recession has spurred interest in policy efforts to spur job creation. This article surveys existing research on two "direct" job creation policies: subsidies to employers to hire workers ("hiring credits"); and subsidies to individuals to enter the labor market ("worker subsidies"). The research suggests that in the short-term, when recovery from the recession is a priority, hiring credits are likely a more effective policy response. First, hiring credits are likely more cost effective, as long as they focus on the recently unemployed and create incentives for new job creation. Second, in general, worker subsidies better target benefits to low-income families and especially single mothers. At this juncture, however, because the recession fell so heavily on men, a hiring credit focused on the unemployed may target low-income families well, and the usual distributional concern with low-income female-headed households may be less paramount. And third, employment subsidies may not be as effective when there is high cyclical unemployment. In the longer-term, however, when the labor market has recovered more from the recession and the focus can shift to longer-standing employment problems and distributional concerns, greater reliance on worker subsidies may do more to increase employment while shifting the distribution of benefits more toward lower-income households.

David Neumark
Department of Economics
UCI
3151 Social Science Plaza
Irvine, CA 92697
and NBER
and also Public Policy Institute of California
dneumark@uci.edu

I. Introduction

The labor market effects of the Great Recession has, not surprisingly, prompted debate – and some action – regarding policies to spur job creation. The adverse effects of the Great Recession on U.S. labor markets are hardly news. The top-left panel of Figure 1 shows the decline in job creation beginning in 2006 followed by sharp declines in jobs in 2008 and 2009. And the top-right panel shows the corresponding changes in unemployment rates. But the salience of the effects of the Great Recession should not blind us to longer-standing employment problems for particular groups – in particular the substantially higher unemployment rates for blacks and Hispanics documented in the bottom panels of the figure.

Thus, although the scale of the recent job losses and increases in the unemployment rate are striking, policy debate about job creation policies that focuses *solely* on the short-term response to the recession is overly narrow. In addition, the Great Recession was so severe that even the best job creation policies would likely lead only to incremental changes. A substantial revival of job growth will hinge mainly on recovery of the national and international economies, whereas there may be more scope for job creation policies to help address the longer-term problems faced by some groups.

Not surprisingly, the job losses experienced during the Great Recession have led to a wide variety of policies – some enacted, and others proposed – to encourage job creation. At the federal level, aside from stimulative fiscal and monetary policy, the government has enacted specific policies intended to spur hiring (discussed below). And at the state level, a wide array of policies has been proposed. As an illustration, in California the Republican party has pushed sales and use tax exemptions for manufacturing, tax reductions for small businesses, corporate tax reductions and reforms, a tax credit for costs of job training and education, a research and development tax credit, mandated economic impact analysis of new regulations, regulatory

reform, caps on compensatory damages, a homebuyer tax credit, reducing the capital gains tax, lowering sales tax for new cars, state tax deductions for Health Saving Accounts, barriers to establishing cap-and-trade to implement climate-change legislation, creation of another state enterprise zone, repeal of penalties for corporations that understate tax liabilities, and allowing sale of out of state health plans. On the other side, Democrats have advocated development of High Speed Rail, expedited public school construction, distributing federal transportation funds for "shovel ready" projects, promotion of in-state renewable energy resources, repairs of levees and other flood control investments.[1]

Despite this long list of policies purported to have the potential to spur job creation, this review article focuses on what can be described as "direct" job creation policies. In particular, it discusses the two types of policies that likely have the simplest and most direct impact on the number of workers employed – subsidies to employers to hire workers ("hiring credits"), and subsidies to individuals to enter the labor market ("worker subsidies").[2] Hiring credits effectively subsidize wages when employers hire from particular groups of workers. Because these credits lower the cost of labor to firms, they increase the demand for labor.[3] Worker subsidies raise the effective wage that people earn from working, hence encouraging people to work – increasing labor supply. Under normal circumstances either policy should – in theory – lead to higher employment.

At the risk of using an oversimplifying label, we can characterize many of other policies

[1] See http://arc.asm.ca.gov/cajobs/?p=solutions, http://cssrc.us/publications.aspx?id=7554, http://senweb03.sen.ca.gov/focus/agenda2010/legislation.aspx, and http://www.calchamber.com/governmentrelations/pages/jobcreators.aspx (viewed July 29, 2010).

[2] This terminology is related to, but different from, one proposed by Hamermesh (1978). He was discussing only subsidies to employers, but distinguished between hiring credits, which are temporary in that they only offset costs during an initial period of a worker's employment, and worker subsidies, which apply during the entire period of employment (p. 89).

[3] When hiring credits are designed to encourage job creation – that is, net *new* hiring – they are sometimes referred to as "job creation tax credits." This article uses the more generic label "hiring credit," but emphasizes the importance of designing hiring credits to encourage new hiring, rather than simply subsidizing hiring that would have occurred without the credit.

proposed to spur job creation "indirect." Indirect policies change the economic incentives facing businesses or workers. They may increase employment, but in terms of the underlying economics they do not as directly target increases in the aggregate level of employment, and in some cases they may not increase employment at all. For example, place-based policies, such as enterprise zones, target employment growth in particular locations, rather than statewide, and thus may act largely to substitute employment in one place for employment in another, or to substitute employees that make an employer eligible for enterprise zone benefits for other employees; or they may not create jobs at all (Neumark and Kolko, 2010). Policies that subsidize other business activities, such as investment in machinery, may serve to increase employment; but by lowering the price of capital relative to labor such subsidies could also have the opposite effect – leading firms to substitute away from labor. Policies that focus on particular industries of course do not help other industries, and may in some cases reflect political power rather than job creation potential. Policies that favor businesses generally – such as reducing taxes or regulatory costs – should help those businesses become more profitable and expand their workforces; but such policies do not necessarily reduce the relative price of labor, so the cost per job "produced" from such policies may be quite high.

To be clear, the argument is not that hiring credits or worker subsidies are the *only* ways to spur job creation, nor that they *necessarily* are the most cost-effective way to do so. The closest alternatives may be policies that lower other costs associated with the employment of workers – such as taxes, other regulations, or minimum wages. Such policy changes might be expected to have effects in the same direction as direct hiring or worker subsidies. However, their effects on job creation could also be more muted.[4] Without in any way downplaying the

[4] Moreover, in some cases policies that seem to simply reduce the cost of labor can have unintended effects on employment. For example, Cahuc and Zylberberg (2004, Chapter 4) show that a lower overtime premium reduces employment as long as the elasticity of the demand for labor (with respect to the wage) is less than one in absolute

value of increasing labor demand generally (via "hours" or "bodies"), the focus on hiring credits and worker subsidies emphasizes those policies that are likely to be most effective at putting more people to work. However, the limitation of the discussion to hiring credits and worker subsidies is also, frankly, dictated in part by space constraints, so this review should not be read as a comprehensive discussion or evaluation of all policies the federal of state governments might consider to increase job creation.[5]

It is important, at the outset, to clarify what is meant by "job creation." A job created by either a hiring credit or a worker subsidy should not be viewed as permanent. At the same time, some policies can lead to a higher long-run level of employment; for example, even if low-skilled individuals enter jobs that tend to be of short duration, if a policy leads to the creation of more such jobs, or encourages more of these low-skilled individuals to look for work, then the economy will have a higher share of its population employed at any point in time.

Nonetheless, job creation policies typically have more to do with smoothing out troughs in the business cycle. This is true, for example, of a hiring credit policy that encourages employers to hire unemployed workers, because there will be more such unemployed workers during and just after a recession. And it is certainly true of the recent federal stimulus package.

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value, which is the consensus in the empirical literature (Hamermesh, 1993). The intuition is that the overtime premium is a variable cost of labor, and that there are also fixed costs. When the premium falls, variable costs relative to fixed costs fall, so firms make use of fewer workers and more hours. If, however, the demand for labor were highly elastic, then the overall fall in the cost of labor could be enough to increase demand for both hours and workers.

[5] One form of direct job creation policy that is not covered in this article is direct employment by the public sector. There is a history with such programs in the United States, including both countercyclical efforts – most notably the Works Project Administration (WPA) during the Great Depression – and, more extensively, efforts targeting the disadvantaged – such as the Comprehensive Employment and Training Act (CETA), which was in effect from 1974 through 1982. Currently, there are two types of public employment programs in the United States: youth summer employment programs, sometimes funded by federal grants (such as the Summer Youth Employment Program funded by the American Recovery and Reinvestment Act of 2009); and community-service jobs that are funded and required as part of welfare reform, such as Wisconsin's W-2 program. Of course, public employment is expensive. While hiring credits and worker subsidies try to spur job creation by changing the marginal cost of or return to work, public employment requires paying the entire cost of employing the worker. This may explain why there is no movement toward creating public sector jobs as part of either a short-term response to the recession or a longer-term employment strategy, with the exception of youth programs. Fairly recent and extensive reviews of public service employment in the United States are provided by Bartik (2001) and Ellwood and Welty (2000); these reviews suggest that public service employment programs have more merit than commonly thought.

In contrast, the federal Earned Income Tax Credit – the principal worker subsidy discussed in this report – has been maintained continuously since its adoption, and for reasons discussed later, may increase employment over the longer run despite being relatively ineffective at countering recessions. These differences in the timing or "dynamics" of the effects of hiring credits and worker subsidies inform which policy might be viewed as better suited to encouraging job creation, and when.

This review of what we know about hiring credits and worker subsidies has implications for both federal and state policy. At the federal level, we already have an aggressive worker subsidy in the form of the Earned Income Tax Credit (EITC), although many states do not. Thus, policy options include states adopting their own EITC, as well as other changes to the federal or state program. A variety of hiring credits exist at both the federal and state level, but many states do not have hiring credits specifically targeting job creation, and there a numerous issues with regard to whether these credits work and how to make them more effective.

II. Hiring Credits

Hiring credits offer payments (in the form of tax credits) to employers for hiring from particular groups of disadvantaged workers, effectively subsidizing their wages. In the United States in the past, Job Opportunities in the Business Sector (JOBS) targeted hiring of young (and older) disadvantaged workers, and the Work Incentives Tax Credit (WINTC) targeted AFDC recipients. The Targeted Jobs Tax Credit (TJTC), in effect from 1979 through 1994, targeted these groups and others, before being replaced by the Work Opportunities Tax Credit (WOTC), which similarly targets multiple groups.[6] Under the Job Training and Partnership Act (JTPA), temporary wage subsidies went to firms providing long-term employment for recipients of on-the-job training – the key wage subsidy for economically-disadvantaged adults who were not on

[6] There are also similar efforts tied to welfare reform – at the federal level, with the Welfare to Work Tax Credit.

welfare. JTPA was replaced by the Workforce Investment Act (WIA) in 2000, which does not include wage subsidies.

Hiring credits to counter the business cycle have been rarer. In the late 1970s the federal New Jobs Tax Credit (NJTC) was enacted to counter the recession of the mid-1970s; it was unique among federal efforts in that it was "non-categorical," and did not target particular groups.[7] And the recently enacted Hiring Incentives to Restore Employment (HIRE) Act pays a fairly small credit consisting of an exemption from the employer's share of Social Security taxes due for the March-December 2010 period, plus an additional $1,000 tax credit per worker. This credit targets those who have been unemployed or who are entering employment from out of the labor force; however, it does not explicitly target job creation by, for example, rewarding hiring only in growing firms.

Table 1 provides information on current federal hiring credit policies and some examples of current hiring credit programs.[8] There is a wide range of state hiring credits.[9] Some (Florida and Maryland) focus on the unemployed, like the HIRE Act, while others couple hiring credits with requirements to invest in facilities (Delaware) or training (Iowa). Some states tie either eligibility for the credit or the amount of the credit to what the new jobs pay. And most, in some form or another, try to ensure that the credits are paid for new job creation.[10] Only a handful of states (including Maryland, Massachusetts, New Mexico, New York, and Rhode Island) currently have hiring credits targeting the disadvantaged, like those targeted by the WOTC.

[7] However, the NJTC created stronger incentives to hire low-wage workers by applying only to the first $4,200 of wages per employee (in 1977 and 1978).
[8] Consistent with the focus of this article, the table covers only direct and broad-based hiring credits. Many states, for example, also have versions of enterprise zone programs (40 states as of 2008, according to Ham et al., 2009).
[9] Many additional state hiring credit policies are described in an appendix available from the author.
[10] This is done through a number of mechanisms, including tying the credit to the creation of new jobs (e.g., Colorado and Connecticut). Some states have provisions to "recapture" some of the tax credit if net job creation falls below job creation for which credits were received.

Predicted effects

Economic theory predicts that a hiring credit will boost employment. Because a hiring credit reduces the effective wage paid by employers, it shifts the labor demand curve up. The labor demand shift leads to higher employment, and also increases the wages paid to workers (which is why more of them are now willing to work). However, the wage cost to the employer is less than the wage paid to the worker, with the difference exactly equal to the hiring credit.

There are, however, some potential complicating factors. Dickert-Conlin and Holtz-Eakin (2000) incorporate these issues into the standard analysis to show how these complications can reduce – perhaps substantially – the incentive effects of hiring credits; see also Katz (1998). These complications stem from the two key issues that arise in designing hiring credits to create the right kinds of incentives: the first concerns the inducement for employers to engage in new hiring; and the second concerns targeting of workers eligible for hiring credits.

The goal of hiring credits is to create incentives for employers to create jobs they would not otherwise have created. To have this effect, a hiring credit has to identify and reward net (positive) changes in employment that would not have otherwise occurred. The research literature on hiring credits makes clear, however, that efforts to avoid payments for hiring that would have occurred anyway – referred to as "windfalls" for employers – are largely unsuccessful. Estimates of the amount of wastage – characterized as the share of credits paid for hiring that would have occurred even without the credit, are often well over 90% (Bartik, 2001).

Efforts to design hiring credits that avoid windfalls can lead to unintended consequences that undermine the job-creation goals of these credits. Paying credits for new hires can create incentives for churning employees, continually firing some workers and hiring other ones to collect the credit. One way to avoid creating incentives for churning is to attempt to bar hiring credits to firms that do not retain subsidized workers, which many hiring credits do (Table 1).

However, implementing such a bar can pose a large administrative hurdle. An alternative approach that attempts explicitly to pay the credit for net positive changes that would not have otherwise occurred can eliminate incentives for churning, but imposes the need for a good deal of information from firms and probably a good deal of wisdom on the part of administrators, to try to determine how employment would have changed absent the credit. And this approach could generate incentives for employment variation, since increases are subsidized but reductions are not penalized. A simpler scheme can simply subsidize all employment (perhaps in targeted groups), but this rewards employers in large part for what they are doing already, and hence entails greater expense per job created.

As this discussion suggests, employer-based subsidies are likely to be rather complicated, both in terms of identifying eligible workers and determining the subsidy paid to firms. One consequence of this may be that reporting requirements end up imposing serious costs on firms, potentially discouraging the utilization of hiring credits. Essentially, the administrative cost to firms of obtaining a hiring credit for a new worker reduces the wage subsidy that the hiring credit generates, hence diminishing the impact of the wage subsidy.

The second issue stems from the fact that hiring credits typically target specific groups of workers. Many federal hiring credits have been aimed at disadvantaged workers. The motivation for this targeting is twofold. First, hiring credits, like many other policies, often have distributional goals. And second, less-skilled, more-disadvantaged workers always – in recessions and at other times – have more serious employment difficulties, and because they might be eligible for costly public benefits if non-employed, there is good reason to try to encourage hiring among these groups. The cost of targeting, however, may be that workers who are eligible for hiring credits can become "stigmatized," precisely because their eligibility provides information to employers that they have been unsuccessful in the labor market, which

can lead employers to regard eligible workers as less productive, offsetting the potential impact of the hiring credit.[11]

Evidence

There is a body of empirical research that addresses the overall effects of hiring credits, as well as the importance of potential unintended consequences of hiring credits from distorting firms' incentives, and administrative and stigma costs. Much of the past research on the effects of hiring credits focuses on credits targeting the disadvantaged.[12] However, research on hiring credits used to counter the business cycle – in particular, the NJTC – may be more relevant in thinking about policy responses to the recent recession.

Turning first to the evidence on factors that can diminish the effectiveness of hiring credits, a 2001 GAO report suggested little evidence of such churning, as very few workers receiving subsidies stayed long enough to get the maximum subsidy (at which point it would have paid to fire them and hire new workers), and hiring and training costs appeared to render such a strategy cost-ineffective (U.S. GAO, 2001; Hamersma, 2005).

With regard to utilization, Katz's review emphasizes the fairly small share of potential hiring credits actually claimed by employers under a number of federal programs (JOBS and WINTC), inferring from this that employers were reluctant to pay the administrative costs involved with the paperwork needed to claim hiring credits. Hamersma (2005) also discusses evidence of very low utilization of the WOTC and Welfare-to-Work tax credits, estimating that, nationally, in 1999 participation among eligible workers was between 10 and 33% for eligible

[11] Dickert-Conlin and Holtz-Eakin (2000) model the effect of stigma as a cost imposed on workers, which instead restricts their labor supply, similarly reducing the impact of the hiring credit.

[12] Despite the many state hiring credit programs in existence, the existing research is nearly exclusively about federal programs, and there is very little empirical research evaluating the effectiveness of these state policies. One exception is Bartik and Erickcek's (2010) evaluation of the MEGA Tax Credit Program in Michigan, which is quite different from the other hiring credits. In addition, there are some evaluations of small-scale hiring credit (or "voucher") experiments discussed below. Finally, a very recent and preliminary paper (Chirinko and Wilson, 2010) estimates the effects of state hiring credits, finding some modest evidence of positive effects.

welfare recipients and even lower for other groups. In contrast, other hiring credits (the NJTC, in particular) were more likely to be claimed by employers; according to Bartik (2001, p. 210), under the WINTC program fewer than 15% of hires eligible for the credit resulted in the credit being claimed, versus 50% for the NJTC. One possible explanation for the difference was that the JOBS and WINTC programs were aimed at disadvantaged workers. In contrast, the NJTC was not targeted at particular social or demographic groups and may therefore have represented less administrative burden for employers. Evidence that the NJTC was more effective at larger firms is also consistent with the idea that administrative costs are important; these costs likely have a large fixed component that can be spread over more workers at large firms. This difference between narrowly- and more-broadly-targeted hiring credits also figures in the evidence on the employment effects of the different hiring credits.

A high degree of utilization does not necessarily imply that a hiring credit creates lots of jobs. For example, research on the TJTC (Lorenz, 1995) suggests that a good deal of the claiming was spurred by management assistance companies or consultants that helped employers file claims retroactively for workers they had hired; in terms of the language used earlier, this makes it likely that there were substantial windfalls paid to employers under the TJTC.[13] In and of itself, this does not imply that the credits were ineffective, as the availability of the credit may have spurred extra hiring even if the credit was not always claimed contemporaneously. But it is also reasonable to interpret a high degree of retroactive claiming as reflecting windfalls in the form of credits paid to employers that would have hired without the credit.

There is evidence suggesting that narrow targeting of hiring credits is problematic, stigmatizing the intended beneficiaries and consequently making employers less likely to hire

[13] According to Bartik (2001), to avoid this kind of retroactive claiming, under the WOTC and the Welfare-to-Work tax credits, employers and applicants must both fill out and sign a form on or before the data of hire including information indicating that the hire is probably eligible.

them (or at least dissipating the effects of the subsidies). Katz (1998) discusses an experimental program in Dayton, Ohio, under the TJTC, for welfare recipients. In this experiment, one group received vouchers that they could present to employers for direct cash rebate subsidies. A second group received vouchers that let employers claim hiring credits under one of two existing programs. And a third group was eligible for the same credits, but neither received vouchers to give to employers nor were they told they were eligible. As it turns out, the third group had the most success in finding employment (see Burtless, 1985). Given that this was a randomized experiment, so that the only difference was the information given to employers and workers, it is plausible to interpret the *worse* outcomes for those with vouchers as indicating adverse stigma effects that reduced the effect of the hiring credits. Another randomized experiment similarly found that eligible workers, which in this case included welfare recipients, ex-offenders, and the handicapped, fared worse when they announced their eligibility to employers.[14] These studies pertain to hiring credits targeting narrow groups of workers for whom information on eligibility might convey a substantial amount of negative information. However, Bartik (2001, Ch. 5) cautions against assuming that the strong stigma effects found in these studies necessarily carry over to all hiring credits targeted on the disadvantaged. He claims that, in the Dayton experiment, job applicants were encouraged to advertise that they had a voucher showing eligibility for the credit to all employers, and hence argues that the Dayton experiment "probably maximized stigma effects" (p. 223).

At the end of the day, the key question is whether hiring credits boost employment. Reviews of the evidence point to a few key conclusions. First, the TJTC, which was a long-standing credit in place in the United States from 1979 through 1994 targeting disadvantaged youth, does appear to have boosted employment of disadvantaged youths, but only modestly.

[14] See the discussion in Hollenbeck and Willke (1991, footnote 3).

Katz's (1998) analysis, based on changes in the age groups covered by the TJTC, suggests that it boosted the employment rate of disadvantaged youths by 0.034 (or 3.4 percentage points). He also estimates that this increase reflects a bit under half of the number of jobs for which the TJTC was paid, emphasizing the point that hiring credits can often be paid for jobs that would have been created in their absence. Overall, Katz concludes that the TJTC had "modest positive employment effects" (1998, p. 40) on the target population.

Since 1983, JTPA has been the major federal employment and training program. Under JTPA, employers who receive wage subsidies are supposed to provide long-term employment opportunities for participants (who also receive on-the-job training), and those who fail to do so are intended to lose eligibility for credits. This program tends to target economically-disadvantaged adults who are not eligible for the TJTC. JTPA has been studied through a large-scale, random assignment evaluation (the "National JTPA Study," Bloom et al., 1994). The evidence indicates positive and persistent program impacts for adults (measured in terms of post-program earnings) when the program was combined with job search assistance, although the evidence suggests that the program did not benefit out-of-school disadvantaged youths.

There are also a number of evaluations of other programs, some from much earlier periods. There is some evidence of positive employment effects for disadvantaged youths from the Youth Incentive Entitlement Pilot Projects (YIEPP), which ran from 1978 through 1981 (Farkas et al., 1984). Katz emphasizes that this program included not just a wage subsidy but also efforts by intermediaries to develop jobs for these youths. Perhaps the strongest evidence comes from subsidized employment programs for adult females, yet this positive evidence comes from subsidies coupled with job search assistance and related efforts, whether in the JTPA study, or the earlier National Supported Work Demonstration, which provided extensive job support services (e.g., Gueron and Pauly, 1991).

Some more recent evidence on the WOTC and Welfare to Work (WtW), from Wisconsin, is more pessimistic. In particular, Hamersma (2008) concludes that any employment effects are small, if they exist at all, and are hard to establish based on the existing evidence. She does find positive short-run effects but tends to find no longer-run effects. Her evidence also parallels the earlier discussion regarding utilization, in pointing to low participation. However, these conclusions do not really differ from those summarized above, as the WOTC and WtW programs targeted disadvantaged groups but did not include the supplemental supporting activities that Katz suggests are important for hiring credits to be effective.

There appear to be two main conclusions regarding how hiring credits targeted at the disadvantaged affect employment. First, these credits can be effective at increasing employment for some groups, although they often are not effective. Second, these positive effects tend to arise when the credit is combined with other efforts to help the target population increase employment, through efforts such as job search assistance and job development, which may be in part because of the need to overcome the stigma effects generated by hiring credits. Indeed Bartik (2001, Ch. 1), suggests that these other efforts in support of hiring credit program may be the mechanism that helps to overcome stigma effects, in part by providing some information to employers that the workers are more productive than their "stigmatizing characteristics" might suggest. In a sense, then, these kinds of efforts may provide a counterpoint to simple voucher programs that readily signal disadvantaged status to employers can be particularly problematic.

A third point emphasized in research on hiring credits is that even though, by construction, they target low-wage workers, they may do relatively little to increase incomes of low-income families. Katz (1998) notes simply that the low earnings base for targeted workers implies that these programs are unlikely to move families out of poverty. Dickert-Conlin and Holtz-Eakin (2000) emphasize this point more explicitly, noting that the overlap of low-wage

workers with poor families is often rather weak, because there are many non-poor families with low-wage workers, and because many poor families have no workers. This point about distributional effects is potentially significant in thinking about hiring credits versus worker subsidies.

Although most hiring credits have targeted the disadvantaged, as noted above, the NJTC was more broadly targeted. It was in effect only briefly, from mid-1977 to the end of 1978, to help spur an economic recovery after the recession earlier in the 1970s (Katz, 1998). As such, the experience with the NJTC may be particularly relevant, at least in the short-term, with respect to the current recovery. The NJTC attempted to reward hiring that would not have otherwise taken place in a rather crude way, by paying the credit for firms in which employment increased by more than two percent. There was also a maximum credit of $100,000 per firm. Because the recent federal HIRE Act has a similar flavor to the NJTC, and because state hiring credits adopted to help spur employment growth in the aftermath of the recent recession are also likely to focus on the unemployed, it is worth delving into more detail on the evidence on the effectiveness of the NJTC.

Perloff and Wachter (1979) study variation in the characteristics of firms reporting that they knew about the NJTC, finding that although only about one-third of firms reported such knowledge, large firms were much more likely to do so. They also found that firms that knew about the NJTC had significantly higher employment growth. Their conclusions are (appropriately) cautious, because any inference comes from the relationship between employment growth and knowing about the credit, and knowing about the credit is not random. In particular, as Katz (1998) puts it, "firms with growing employment had a much greater incentive to learn about the program" (p. 31).

Evidence from Bishop (1981) suggests that the NJTC increased employment in

construction, trucking, retail trade, and wholesale trade by about 400,000 jobs, or about 0.5 percent of economy-wide employment, a sizable increase. Bishop suggests that these industries are particularly sensitive to hiring credits (or changes in input prices generally), because capital equipment depreciates quickly and labor turnover is high (p. 210); this suggestion is worth keeping in mind given that the current recession has been characterized by dramatic declines in construction employment. Bishop also uses knowledge about the NJTC as the "treatment" variable, but rather than individual firm variation, it uses a common variable applied to all firms that captures the time-series variation in the proportion of firms reporting knowledge of the NJTC. As such, the effect of the NJTC is hard to distinguish from other time-series changes.

Based on the evidence, Katz (1998) argues that it is difficult to sort out the effects of the NJTC from other factors, but overall suggests that the evidence supports the conclusion that this kind of "temporary, noncategorical, incremental employment subsidy has some potential for stimulating employment growth" (p. 31).[15] The conclusions in the original papers are quite cautious as well. Perloff and Wachter (1979) conclude that "the New Jobs Tax Credit may have shifted the distribution of the rate of growth of employment" (p. 178). And they note that, because "most firms either did not know of the program or were not influenced by it," the short-run NJTC was "an imperfect countercyclical tool" (p. 179). Bishop (1981) is firmer in drawing conclusions, but does not really disagree with Katz's assessment, noting that "Perhaps the NJTC variable is capturing other exogenous forces that are inducing contemporaneous employment increases … in the sectors studied" so that "the conclusion that NJTC is having major effects on employment and prices must remain tentative until better data or more periods of observation become available" (p. 240).

In more recent writing about proposals for a federal hiring credit to counter the current

[15] The term "employment subsidy" in this quote is the same as the term "worker subsidy" used throughout the report. We use the term "worker subsidy" to clarify that the subsidy is paid to the worker.

recession, Bishop (2008) and Bartik and Bishop (2009) interpret the evidence as unambiguously indicating strong positive employment effects of the NJTC, arguing that "Tax credits for new jobs have been tried before, and they worked well" (Bartik and Bishop, 2009, p. 9), and that "the NJTC probably generated at least a million jobs by the end of 1978 (Bishop, 2008, p. 5).[16] Based on the evidence, however, the more cautious summary of the evidence along the line of Katz's is more defensible.[17] Moreover, since the NJTC occurred over 30 years ago, one must recognize the considerably greater uncertainty from extrapolating results from that experience to the present. Finally, it should be emphasized that none of the existing evidence comes explicitly from state hiring credit policies – despite the fact that many states have them, and many have had them for a long time. There is no obvious reason that results from national policies should not apply to the state level, but, again, this adds to the uncertainty in projecting the existing evidence to predict the effects of a state-level hiring credit.

Nonetheless, it is important to emphasize that the relatively pessimistic conclusions about the effectiveness of hiring credits applies to programs targeting the disadvantaged. In contrast, there is reason to believe that broader hiring credits focused on the unemployed and intended to counteract a recession may be more effective.

Costs (and benefits) of creating jobs via hiring credits

It is exceedingly difficult to weigh the costs and benefits of hiring credits, and the information available is more a combination of a number of untestable assumptions and back-of-the-envelope calculations than of rigorous evidence. As a consequence, thinking through these costs and benefits is useful mainly for developing rough estimates rather than definitive answers

[16] In this, they echo Hamermesh's earlier summary of the same evidence, concluding that "The evidence on the effect of the NJTC on employment growth is both positive and convincing" (1993, p. 192).
[17] Indeed, Bartik and Bishop have earlier described the evidence more cautiously. Bishop's (1981) reservations were noted above. And Bartik (2001) wrote that "The NJTC *may have* created as many as 700,000 new jobs" (p. 226, emphasis added).

about benefit-cost ratios.

Some parts of the cost side of hiring credits are simple to calculate, such as the amount of hiring credits paid. Other components of costs are trickier to assess, such as the value of other public services that may be reduced if tax revenue is diverted to pay for hiring credits, or the costs of tax increases if these are used to finance the credits. Another difficult and substantively important part of the cost calculation relates to the issue of how hiring credits are structured to create incentives for new job creation. While it is easy to ask how many dollars have been paid out in credits under a given program, the right question is how much has been spent to create jobs that would not have been created absent the hiring credit.

Even in the context of a very positive assessment of a hiring credit program in Michigan, the estimate is that the credit is decisive in 8% of cases (Bartik and Erickcek, 2010). In other words, 92% of credits are paid for jobs that would have been created anyway, and the authors suggest that, more typically, the corresponding numbers are 4% and 96%. So we need to multiply the hiring credit cost per worker who receives the credit by 12.5 to 25 (depending on whether we use the 8% or 4% figure) to arrive at the cost per job created.[18] As an example, California's current New Jobs Credit pays a credit of $3,000 per worker, for a worker employed all year. Adjusting this figure for the windfall rates above yields a cost per job created of $37,500 to $75,000; and of course that presumes that this particular credit creates jobs at a rate consistent with the windfall rates that Bartik and Erickcek view as typical.

In a high unemployment economy with little aggregate job growth, these numbers might be lower if it is easier to create incentives for new hiring (and hence avoid windfalls), because a

[18] In a discussion of a proposed hiring credit to counter the recession, Bartik and Bishop (2009) estimate a higher rate of created versus credited jobs – 22% in 2010 and 12% in 2011. They get this figure from comparing an estimate of the jobs that would be created because of the credit incentives to an estimate of growth that would have occurred otherwise. For the latter, they use estimated job growth at existing establishments. However, a great deal of job growth also comes from new establishments, and it is unclear why they exclude this source of job growth.

smaller number of firms would be growing absent the credit. However, no matter where we are in the business cycle, the U.S. Bureau of Labor Statistics Job Openings and Labor Turnover Survey shows that many firms are growing and many firms are shrinking. Nonetheless, to illustrate the sensitivity of costs to windfalls, Bartik's (2001) very positive assessment of the NJTC claims that the windfall wastage rate under this program was around 67%. Applying that rate to the $3,000 per worker under California's NJC would substantially lower the cost per job created to about $9,100. Other figures Bartik reports suggest the actual cost under the NJTC could have been as low as $13,500 per job created (in 1998 dollars, or $17,765 in 2009 dollars), in part because the maximum credit was larger (up to $5,250 in 1998 dollars, or $6,908 is 2009 dollars); this is based on an upper bound estimate of job creation as a result of the NJTC of 700,000. Finally, in a recent proposal for a new hiring credit that would equal 15% of additions to taxable payroll (subject to Social Security taxes), Bartik and Bishop (2009) estimate a cost per job created of about $28,000 – quite a bit higher than some of these other estimates.

These figures are gross costs of creating jobs through hiring credits. The net costs would be lower if the increased employment from hiring credits lowered other government costs, and increased economic activity. The most obvious offsets to costs from jobs created by a hiring credit reductions in government costs associated with unemployed workers (Unemployment Insurance) and increases in tax receipts. These offsets are likely to be only a fraction of the cost per job created – but likely not a trivial fraction. A second source of benefits comes from the potential economic multiplier effects of a hiring credit. Of course the credit is financed by taxes, which reduce someone else's income. But to the extent that such a policy transfers income to those who spend a higher share of their income on current consumption (a higher "marginal propensity to consume out of income"), a hiring credit can have stimulative effects, and that in

turn can increase government revenues and decrease government expenditures.[19]

The considerable uncertainty associated with these effects makes it impossible to pin down how much lower the net costs of hiring credits are compared to gross costs – although clearly they are lower. Nonetheless, Bartik and Bishop's (2009) calculations are noteworthy – at least as an illustration that the gross cost numbers could overstate many-fold the actual cost of hiring credits once these other offsets are taken into account. Combining what is likely too high a success rate in creating jobs (discussed above), with the other estimates they make of extra GDP and hence government revenue produced by their hiring credit, the net cost per job created falls to a range of $4,700-$6,300. Even if these figures should be two to four times higher, they would still be well below some of the gross cost figures cited above, more so if a hiring credit when the unemployment rate is high is particularly effective at creating net job growth.

The research literature also discusses other potential benefits from the increased employment from hiring credits. One is the potential for longer-run beneficial effects of the employment induced by hiring credits on affected individuals' employment and earnings, through the accumulation of labor market experience and skills. The previous section touched on the more limited evidence on whether hiring credits have effects that persist, although typically the focus is only on a fairly short period; the evidence is ambiguous, with some studies finding persistent effects on employment, and others not.[20] Thus, there is probably little

[19] Bartik and Bishop (2009) estimate very large effects via this channel that offset more than 75% of a proposed hiring credit, based on assuming that each new job created generates an addition to GDP equal to the economy-wide average labor compensation ($62,000). The rationale for using average compensation to get this multiplier is unclear – as opposed to a lower level of compensation more likely for those who benefit from hiring credits.

[20] Bartik (2001, Ch. 5) stakes out a much stronger position on the potential for long-run increases in employment and earnings based on temporary increases in labor demand (whether from hiring credits or other policies he discusses). But these stronger conclusions come mainly from evidence other than that generated by hiring credits (such as the fact that there is a positive effect of experience on the wage). Thus, although the *direction* of the effect on longer-run labor market outcomes is likely positive, there does not seem to be sufficient empirical basis for strong conclusions that there are long-run effects on the order of 10-20%, as he suggests (p. 148). Indeed the only hiring credit program from which estimates like this emerge is the Supported Work Program (studied by Couch, 1992). But this program involved far more extensive kinds of supports (mentoring, counseling, training, etc.) than a

justification for assuming large gains from longer-term effects that extend past the time a worker is employed because of a hiring credit, but the effects are almost surely in this direction.

III. Worker Subsidies

In contrast to hiring credits, worker subsidies entail supplementing workers' labor market earnings with additional income to encourage work. At the federal level, the EITC subsidizes employment of workers in low-income families. The top panel of Table 2 presents the parameters of the federal EITC program, as of 2010. In 2010, the federal credit rate for a family with two or more qualifying children was as high as 40%. The range over which the subsidy rate stays constant, and hence the overall EITC benefit increases, is called the "phase-in" range. However, the subsidy is capped, so that it does not grow without bound as a family's income increases. For a family with two children, in 2010 the maximum benefit level was $5,036 for families with two children. There is therefore a "plateau," or an income range over which the maximum benefit remains fixed. And finally, so that all earners do not receive EITC payments, there is a "phase-out" range over which the credit is reduced at a 21.06 percent rate (the "phase-out rate"), until, at an income level of $40,363, benefits have been eliminated. For families with one child, the incentives are weaker, and there is a very small EITC available to those without children.[21] The different parameters for families with three or more children are temporary measures included in the American Recovery and Reinvestment Act (ARRA).

Many states have their own EITC's, which typically specify a percentage supplement to the federal EITC that is provided to families by the state, although state EITC's can differ along

typical hiring credit program would – and probably especially if the program focused on the unemployed rather than the disadvantaged. (Indeed Couch describes the Supported Work Program as an employment training program.)

[21] For purposes of exposition, the phrase "without children" means that there are not children that qualify the family for the higher EITC payment; this is based on what parent the child lives with for how much of the tax year. Similarly, the text often refers to those eligible or ineligible for the EITC based on whether they have children; this is also a short-hand, as the ineligibles are often (as long as they are between ages 25 and 64) eligible for the very small EITC.

a number of dimensions. The states with their own EITC as of 2009 are listed in the bottom panel of Table 2; the number of such states increased sharply in recent years (Neumark and Wascher, forthcoming). In addition, a few localities – San Francisco, New York, and Montgomery County, Maryland have local EITC's (and Denver used to have one).

Predicted effects

The EITC has the potential to create jobs by encouraging those who would otherwise choose not to work to enter the labor market, because of the higher effective wage they face (the market wage supplemented by the EITC subsidy). Increasing the supply of labor to the market can – just like a hiring credit – increase employment. The worker subsidy shifts the labor supply curve out and to the right; since workers receive a subsidy from the government for working, more of them are willing to work at any given market wage than they were in the absence of the EITC. At the new intersection of labor supply and labor demand, employment is higher. Note that the market wage declines, owing to increased number of people working, which is why employers are willing to hire more workers. But the worker's "take-home" wage – defined as the market wage plus the worker subsidy, is higher than the initial wage. Thus, the EITC acts just like a hiring credit, lowering labor costs to employers and increasing employment (and increasing workers' pay).

However, the EITC also entails complications that can undermine this prediction. These arise from the more subtle and potentially ambiguous labor supply incentives created by an EITC. When the wage a person can earn increases – and it does not matter whether this is the wage paid by employers or is a wage subsidy from the government because of the EITC – one result is the substitution effect, which gives the individual an incentive to increase how much they work. But for an individual working a given number of hours, the increase in the wage means they have more income, and they likely respond to this income effect by working less.

When we think about the effect of the EITC on the decision whether or not to work, there is no ambiguity. For someone not working, a higher effective wage generates a positive substitution effect; staying away from work now entails sacrificing more income. But there is no income effect; if they are initially working zero hours, the higher wage does not in and of itself give them more income. Indeed, the main reason for the popularity and increasing generosity of the EITC in recent decades is probably this pro-work incentive that the EITC generates, which, along with welfare reform, was intended to shift the nation's income-support policies towards those that encouraged work, rather than discouraging it (see Blank et al., 2000). (And, as discussed below, the EITC has good properties in terms of redistributing income to poor and low-income families.)

Finally, if the countervailing employment and hours effects were the entire story, from the narrow perspective of job creation we might conclude that the EITC in fact has clear and unambiguous effects. If more people choose to enter the labor market, while some of those already working reduce their hours, then the overall number of people working – or equivalently of jobs held – would increase. However, once we take account of the fact that people can be in families with multiple workers, an EITC could conceivably lead one spouse to leave the labor force in response to the higher income earned by the other spouse.

The complex effects of the EITC reflect the fact that it is not intended as a pure job creation policy. Rather, the EITC is intended to increase the likelihood that low-income single women work. For this population there is a clear prediction that employment will increase, and more generally the EITC will increase incomes in low-income families. But because EITC benefits have to be phased out as income rises, there is no way to avoid the incentives the EITC creates for those already employed (or for secondary workers) to work less, and to avoid phasing out benefits too quickly EITC benefits inevitably go to a large number of people who would be

employed regardless. The payment of these benefits parallels the problem of windfalls in hiring credit programs – that is, costs of the program that do not contribute to increased employment.

Evidence

The labor supply effects of the EITC have been studied extensively, and reviewed recently by Hotz and Scholz (2003) and Hoffman and Seidman (2003). Much of the empirical research has focused on single mothers, for two reasons. First, because the EITC is intended to increase income in the hands of low-income families, female-headed households with children are important, as they are much more likely to be poor than other types of households; for example, in 2008 the poverty rate for all families was 10.3 percent, versus 28.7 percent for female-headed households with no husbands present.[22] Second, for this group the EITC is most likely to increase employment, because many of these women might not work, especially if their children are young. Because single mothers with young children likely place a high value of time with their children, and face high costs of working owing to child care expenses, the substantial subsidy to earnings generated by the EITC could have particularly large employment effects for this group. If we did not find evidence of substantial employment-enhancing effects of the EITC on the subpopulation of single mothers, it is probably relatively unlikely that an EITC would increase employment overall.

There is overwhelming evidence that a higher EITC does, in fact, increase employment of single mothers (Hotz and Scholz, 2003; Hoffman and Seidman, 2003). Most of this evidence focuses on the effects of changes in the generosity of the federal EITC, although some of it (for example, Neumark and Wascher, forthcoming) studies the effects of more generous state supplements to the federal EITC.[23] The estimated elasticity of increases in employment among

[22] See http://www.census.gov/hhes/www/poverty/poverty08/table4.pdf (viewed June 20, 2010).
[23] This conclusion that the EITC increases the employment of single mothers emerges from a number of different types of research strategies, including difference-in-differences, inferences from labor supply studies, and structural

this group with respect to the net income provided by the EITC is generally in the 0.7 to 1.2 range.

The existing research has also studied potential labor supply reductions among those already working, and in particular secondary workers in families. Here, the conclusions are more ambiguous. Much of the work tends to find at most modest negative labor supply effects (e.g., Eissa and Hoynes, 1998), and sometimes no effect at all (Eissa and Liebman, 1996). In contrast, Hoffman and Seidman (2003) suggest that there are sizable disemployment effects for married women in the phase-out range, and also some decrease in hours for both married men and women.

To get some idea of a comparison of the magnitudes of the effects, Hoffman and Seidman consider the many studies that focused on the major 1993 expansion of the EITC, which raised the phase-in rate for families with one child form 18.5% to 34%, and for families with two more children from 19.5% to 40%.[24] I focus on the evidence from the "reduced-form" analyses of this expansion.[25] The evidence suggests that, as a result of this policy change, the employment rate of low-skill single mothers rose by 18-23 percentage points (Ellwood, 2000), and the employment rate of single mothers overall rose by about 6 to 7 percentage points (Meyer and Rosenbaum, 2000). In contrast, the employment rate of less-educated married men increased very slightly, while the employment rate of less-educated married women declined by just over 1 percentage point (Eissa and Hoynes, 2004). Note that although this latter effect is smaller, it applies to a much larger group. These should not be viewed as definitive estimates of the

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models of labor supply and EITC participation. A partial listing of the relevant literature on the federal EITC includes Meyer and Rosenbaum (2001), Eissa and Liebman (1996), and Keane and Moffitt (1998). Evidence on state EITC's is reported in Neumark and Wascher (forthcoming). The only exception to the evidence of positive employment effects is Cancian and Levinson (2005), who do not find evidence that the increase in Wisconsin's EITC for families with three children increased employment of single mothers in this group.

[24] This is also when the small credit for families with no children was first implemented.

[25] Hoffman and Seidman also review evidence from some simulation studies that is broadly consistent with this evidence (although some of the magnitudes of course differ), but is also more dependent on model assumptions.

magnitudes involved, and they come from a particular period and policy change. As a counterexample, in looking at state EITC's, Neumark and Wascher (forthcoming) find small and statistically insignificant effects of the EITC in reducing employment or hours of married women. On the other hand (as discussed more below), they find negative consequences for other groups who may compete with single mothers for employment. But the strongest evidence, paralleling the literature just reviewed, is that the employment of single mothers increases sharply. Perhaps the most important conclusion from this body of literature, then, is threefold: first, that there is quite a bit of evidence consistent with the predicted labor supply effects of the EITC; second, that the group most likely to increase employment in response to the EITC – single mothers – does so strongly; but third, that there are trade-offs inherent in the EITC, encouraging employment for some groups and discouraging it for others.

The research also studies hours effects, but these are less central to the question of employment creation that is the focus of this article. Of perhaps greater interest is the net effect of the conflicting influences of the EITC on labor supply. Existing studies find that the EITC increased overall hours of work among women studied (Keane and Moffitt, 1998; Dickert et al., 1995; and Meyer and Rosenbaum, 2001), so the employment gains more than offset any hours (or employment) reductions among others.[26] Moreover, Dickert et al. estimate total labor supply effects of the EITC expansion in the 1990s, and find that the overall hours effect was positive, although not a large net effect relative to total labor input (about 20 million hours; see their Table 5). In addition, Blank et al. (2000) look at evidence on increases in annual weeks worked among

[26] One suggested reason for the strong positive employment effects but weak hours disincentive effects is that it is easy for a potential EITC recipient to perceive the positive incentive to work, but much more complicated to calculate how the EITC affects labor supply incentives for those already working, especially, perhaps, because most people receive their EITC payments at the end of the tax year after which the relevant labor supply decisions have been made (Hotz and Scholz, 2003; Liebman, 1997). In addition, the labor supply research literature generally finds that the extensive margin (whether or not to work) is much more sensitive to economic incentives than the intensive margin (how much to work conditional on working); see, e.g., Heckman (1993), Hoffman and Seidman (2003), and Meyer (2002).

single women with children, and find that when the federal EITC expanded sharply between 1993 and 1998, their weeks worked rose substantially relative to married women with children and single women without children. This latter evidence is not only consistent with the positive employment effects for single mothers noted above, but also suggests that, for women, the employment effects outweigh any negative hours effects among those who were already working.

Overall, then, there is a strong consensus that the EITC has positive job creation effects – increasing the *number* of people employed. If that is the main or the only goal of policy, then the reductions in hours among those already working is unimportant. However, the combined evidence suggests that even if these reductions in hours are taken into account, the EITC increases the total amount of labor supplied to the market. And finally, although the is more sparse, it appears that this conclusion applies at least as strongly to state EITC's as to the federal EITC.

There is, however, a potentially important caveat to much of the evidence underlying this conclusion – one that implies generally to difference-in-difference types of analyses of policy effects. The research just discussed tends to focus on groups most likely to be affected, such as single women with children, and to estimate how the EITC affects their labor supply relative to other groups that should not be affected. In that sense, the conclusions come from *relative* comparisons between, say, single mothers and other women. There is always, therefore, a leap in going from the kind of evidence reviewed here to conclusions about how a particular policy would affect overall employment. If we believe, for example, that the taxation necessary to fund the EITC (or, for that matter, hiring credits) distorts the labor supply of other individuals in such a way as to offset the labor supply increases among those who benefit directly from the EITC, then the overall employment effects need not be positive, and all we could conclude definitively

is that relative labor supply increased among the targeted group. Different types of studies are needed to assess how policy affects overall employment in an economy.

Of course programs can also be funded by the reallocation of existing tax revenue from other programs, in which case we might be able to come up with a more definitive answer on the likely aggregate effects. Looking at the recent history of welfare and anti-poverty programs generally, it might be more accurate to view expansions of the EITC as having been financed in part by reductions in other programs intended to provide income support to disadvantaged families, which had created strong disincentives to work. And it seems fairly clear that, under this perspective, government spending has been reallocated from programs that more likely discouraged work to programs that encourage it.[27]

The EITC has the added benefit of raising incomes of poor and low-income families. Hotz and Scholz (2003) discuss evidence indicating that the EITC targets low-income families well; for example, one study they cite (Scholz and Levine, 2001) indicates that over 60% of EITC benefits go to taxpayers in families below the poverty line. And Neumark and Wascher (2001, forthcoming), focusing in particular on state EITC programs, find that higher state EITC's not only lift families out of poverty, but help families *earn* their way out of poverty (or extreme poverty, defined as one-half the poverty line).[28] Of course adding in the EITC payment, the distributional effects are even more positive for low-income families.

On the other hand, recent research has highlighted some potential negative consequences of the EITC for other groups. Rothstein (2008) and Leigh (2007) point out that the EITC boosts

[27] Blank (2002) writes: "[T]hese changes constitute a revolution in public-assistance programs within the United States over this past decade. Federal dollars available to support *working* low-income families increased from $11.0 billion in 1988 to $66.7 billion in 1999. Dollars paid in cash welfare support to (largely non-working) families headed by non-elderly, nondisabled adults rose from $24 billion in 1988 to $27 billion in 1992, then fell to $13 billion by 1999 (all numbers in 2000 dollars)" (p. 1108).

[28] Evidence on other worker subsidies discussed in Blank et al. (2000) point to more specific findings of this nature, with family income rising by substantially more than cash assistance for some programs, especially for SSP and New Hope, for which the multiples of income increases to cash assistance are two to one or higher (p. 399).

employment among those who would not work in its absence, which should increase competition with those already in the labor market and reduce the market wage for low-skilled workers. Evidence in their studies points to wage declines among less-skilled adults without children, and additional evidence in Neumark and Wascher (forthcoming) suggests they experience employment declines as well, presumably as a labor supply response to the lower market wage.

Bartik (2001) discusses evidence suggesting that these "displacement" effects in programs like the EITC range from 1/3 to 2/3 of the gross employment effect (p. 69). However, it is difficult to estimate these displacement effects directly, and Bartik largely relies on simulations. Evidence on the effects of state EITC's (Neumark and Wascher, forthcoming) suggests that the positive employment effect for less-educated single mothers with children is about six times as large as the negative employment effect for less-educated individuals without children, and about 2.4 times as large as the negative employment effect for less-educated, childless blacks and Hispanics.[29]

In sum, then, worker subsidies in the form of an EITC have two benefits. They induce people to take jobs, increasing employment. And in doing so, they increase incomes among poor and low-income families. And although negative consequences for workers who compete with the main beneficiaries need to be included in the costs and benefits of the EITC, the positive effects for the main beneficiaries are far stronger.

Costs (and benefits) of creating jobs via worker subsidies

What does the evidence suggest about the costs of worker subsidies relative to their employment benefits? As with hiring credits, the evidence is only suggestive because we do not have quantifiable measures of many of the costs and benefits. In addition, important unique

[29] The employment declines among the latter groups are unlikely to be as large as the employment increases among single mothers, because those without children are likely to find work more attractive to non-work even at low wages.

complexities of the EITC arise because of the potential for negative labor supply effects, and for many families to reap benefits without changing their behavior. As a result of these complications, the estimated cost ranges per job created via an EITC are even wider than for hiring credits.

To begin, consider the strongly negative assessment offered by Bartik (2001). He argues that "the EITC does not usually provide an effective work incentive … Twenty million households receive EITC benefits. Under all these estimates, the labor force participation of more than 95 percent of these people are unaffected by receiving the credit" (p. 78). Bartik summarizes the evidence on employment effects of the EITC, as of the time of his work, as creating between 170,000 and 405,000 jobs for single mothers (based on Eissa and Liebman, 1996). And he notes that the largest negative estimated effect of the EITC on married women implies that 161,000 of them leave employment (based on Eissa and Hoynes, 2004). If we simply use these employment change estimates, coupled with the $30 billion cost of the (federal) program in 1998 that Bartik cites, then the cost per job created ranges from $123,000 to $3.3 million dollars. (The latter number occurs using the 170,000 estimate of jobs created, which, coupled with the 161,000 decline among married women implies a very small net increase.) Clearly if these are the right numbers, then the EITC – as a job creation strategy – is likely far inferior to hiring credits.

However, these high estimates are potentially misleading for a number of reasons. First, the 161,000 figure Bartik cites is, as he acknowledges, the largest negative estimate. There are also estimates suggesting no negative employment effect for married mothers – or at least not one that is statistically detectable. If we assume no disemployment effect for married mothers, then the calculation above leads to much lower costs per job created, ranging from $74,000 to $176,000 – estimates that are substantially lower, but still very high compared to most estimates

of the costs per job created via hiring subsidies.

A second reason the number may be too high is that the estimated employment changes come from *expansions* to the program, so we should be dividing the cost of the expansion by the number of jobs created, rather than dividing the cost of the entire program by the number of jobs created. Estimates of the employment effects of the EITC tend to cover the expansions in the EITC between 1984 and 1996 (e.g., Eissa and Liebman, 1996; Eissa and Hoynes, 2004; Meyer and Rosenbaum, 2001), with different papers using different periods. For example, the Eissa and Hoynes and Meyer and Rosenbaum studies refer roughly to the 1990-1996 period, when federal EITC expenditures increased by about $21 billion (in 1999 dollars); see Hotz and Scholz (2003, Table 3.3, p. 155). Using this increase instead of the overall spending figure ($30.6 billion in 1999 dollars in 1996), but otherwise making the same assumptions in the previous paragraph, reduces the cost per job created by about one-third, to about $50,000 to $117,000.[30]

The range of these estimates is very large, indicating that it is difficult to arrive at a precise judgment about the cost effectiveness of the EITC with respect to creating jobs. Perhaps the most important lesson, then, is that the cost *could* be very high. Of course the other potential benefits of increased employment that were discussed with respect to hiring credits apply here as well, and would have to be offset against these costs.

[30] Alternative estimates can be derived from Neumark and Wascher (forthcoming), based solely on the variation in EITC payments stemming from state programs. The estimates from this study indicate increases in employment of single mothers, and decreases in employment of married mothers and less-skilled minority men. However, the implied range of estimates of cost per job created is very large. As an illustrative example, I estimated the number of people in these demographic groups, and the state cost of a percentage add-on to federal EITC dollars flowing into the state (Avalos and Alley, 2010). Then using both significant estimates (for single mothers with children) and insignificant estimates (e.g., for married mothers), and using the difference-in-difference-in-differences estimates between those with and without children to identify the causal effects (assuming that the estimated coefficients for the childless capture other sources of correlation between state EITC's and labor market outcomes), the estimated cost per job created is $207,000. But using only the significant estimate for single mothers with children, the cost is about $12,000. (A spreadsheet documenting these calculations is available upon request.)

IV. Hiring Credits vs. Worker Subsidies

Both hiring credits and worker subsidies can spur job creation. The evidence generally suggests that both policies accomplish this goal, although their cost-effectiveness may differ. This section synthesizes the existing evidence to consider the arguments in favor of each policy. This discussion suggests that which policy is preferable may depend on whether we are considering the short-term response to the recession and its aftermath, or longer-term efforts to increase employment and reduce unemployment.

In theory, there is no difference

Economic theory demonstrates that, at least in simple, stylized cases, the *quantitative* effects on employment (and wages) are the same whether we subsidize employers (with a hiring credit) or employees (through an EITC or something like it). This point is illustrated in Figure 2. Panel A illustrates an employer subsidy (a hiring credit) equal to c; that is, the government pays a credit equal to c percent of the wage. The employer subsidy shifts the demand curve out to D', because the credit reduces the cost of labor to employers.[31] This shifts employment from E to E', so that the hiring credit creates jobs. Because labor demand has increased, the wage paid to workers increases from w to w', although the total cost of labor to employers (w'(1−c)) declines.

Panel B instead illustrates a worker subsidy. In this case labor supply shifts out because workers earn more per hour of work (recall that this comes from entry of workers into the labor market), resulting in an increase in employment from E to E''. Because in this case labor supply shifts out, the market wage paid by employers fall from w to w'' – and it is this decline in the market wage that helps explain why a worker subsidy increases employment. But workers earn a higher wage because they get w'' *and* the subsidy, or, in the figure, a wage of w''(1+e). Thus,

[31] Note that the figure simplifies in that there is a constant percentage of the wage paid as a hiring credit, rather than, as is typical, some percentage of the first few thousand dollars of wages. A similar simplifying assumption is made regarding the worker subsidy. These simplifications do not change the basic point that either policy can increase employment.

the figure shows that both policies increase employment. In fact, for a value of e equal to c/(1−c), the employment increase (as well as the effective wage cost to employers and wage received by workers) is *identical* in the two cases.[32] Hence, in this simple case there is no difference between employer and employee subsidies.

The figures also illuminate some other points about the employment and wage responses to hiring credits or worker subsidies – in particular, how they vary with the elasticities of labor demand and supply. Panel A of Figure 2 suggests that when labor supply is more elastic, the employment effect of a hiring credit is bigger and the wage effect is smaller. And Panel B suggests that that when labor demand is more elastic, the employment effect of a worker subsidy is bigger and the wage effect is smaller. Since we know that the employment effects are the same whether employers or workers are subsidized, the implication is that the employment effects of either kind of subsidy will be larger when either labor demand or labor supply (or both) are more elastic.

Arguments favoring worker subsidies over hiring credits

Although in the simplified world depicted in the preceding figures there is no difference between trying to spur employment via hiring credits or worker subsidies, in reality there are a number of possible reasons why one type of policy may be preferable to the other. Two of the potential arguments in favor of worker subsidies (and against hiring credits) come from the research described earlier highlighting problems with how hiring credits work in practice. First, hiring credits can create negative stigma effects – at least when they are narrowly targeted. In contrast, the EITC does not have stigma effects, since the employer typically has no idea whether

[32] To see this, note that labor demand will be identical in the two cases when w'(1−c) = w'' (in which case the labor cost to firms is the same), and labor supply will be identical in the two cases when w''(1+e) = w' (in which case the effective wage earned by workers is the same). These equations hold simultaneously when e = c/(1 – c).

an employee is eligible for or receiving the EITC.[33]

Second, hiring credits may pose substantial administrative and compliance costs for employers that deter participation and make the program ineffective (although holding down both benefits *and* costs of the program). As already noted, these costs can be substantial, and some research suggests that they have deterred the use of hiring credits by employers. The EITC, on the other hand, is easily administered through the tax code. This is particularly true at the state level, where it is a simple matter to "piggyback" on the federal EITC calculation on the federal tax return in order to administer a state EITC that is a simple percentage of the federal EITC, which almost all of them are (Table 2).[34] In contrast, as the earlier discussion of hiring credits showed, there has not been a federal hiring credit focused on the unemployed generally except for the very recent HIRE Act. Moreover, states have chosen very heterogeneous hiring credits, and there appear to be no state hiring credit programs that function as add-ons to federal credits. As a consequence, there is no link between a business filing for state hiring credits and federal tax forms that are already being filed by the business. Rather, employers have to certify eligibility for credits with state tax authorities, no doubt entailing higher administrative costs.

Worker subsidies like the EITC also do more to help poor and low-income families. The one existing study that presents a thorough comparison of the two types of policies emphasizes the beneficial effects of the EITC on the income distribution (Dickert-Conlin and Holtz-Eakin, 2000, p. 269). This study comes down on the side of using worker subsidies for job creation, concluding that, although hiring credits "have the potential to raise the employment levels of the targeted groups … low participation implies that the size of an employer-based subsidy must be

[33] Many researchers have noted that most EITC recipients choose to take their payment as a lump sum at the end of the year rather than in each paycheck. This may be to avoid stigma effects.

[34] This is reflected in quite simple state tax forms for claiming state EITC's, which just require a few items from the federal tax form and the federal EITC calculation. For example, for New York, Iowa, and Maryland, see http://www.tax.state.ny.us/pdf/2009/fillin/inc/it215_2009_fill_in.pdf, http://www.iowa.gov/tax/forms/1040AShortBooklet09.pdf, line 19, and http://forms.marylandtaxes.com/current_forms/resident_booklet.pdf, p. 9 (viewed August 3, 2010).

quite large to be equivalent to an employee-based approach" (p. 291). However, this conclusion regarding the ineffectiveness of hiring credits ("employer-based subsidies") is based on evidence on the effects of hiring credits on employment of disadvantaged workers, for which, as discussed earlier, hiring credits *are* quite ineffective. The evidence suggests that a non-categorical hiring credit like the NJTC – focused more on the unemployed, and responding to a recession – has greater potential to create jobs.

Arguments favoring hiring credits over worker subsidies

Despite these arguments, at least in the short term hiring credits may be a more effective job creation policy. In the short term, the overriding concern of policymakers is surely putting more people back to work after the Great Recession, and lowering the unemployment rate. As a result, any state effort to enhance or broaden hiring credits would focus on the unemployed, rather than narrower disadvantaged groups.

A hiring credit focused on the unemployed could substantially mitigate the stigma effects and administrative costs that have diluted the effectiveness of past hiring credit programs. With national unemployment hovering near 10%, eligibility for a hiring credit based on current unemployment may not send employers much of a bad signal; everyone understands that many people have become unemployed in the current downturn through no fault of their own. As a result, hiring credits that focus on the unemployed (or are non-categorical), and are concentrated on labor market recovery from the recession, seem unlikely to entail substantial stigma effects.

Second, in a period when employment has largely been falling, it should be easier to reward hiring that would not have occurred but for the credit, reducing windfalls for firms that would be hiring anyway. For example, in the current environment, making eligibility based simply on whether a firm's employment is growing might pose acceptable windfall costs, and such a simple rule for establishing eligibility would impose smaller costs on firms, making the

credit more effective. Similarly, a credit targeting the recently unemployed should be administratively simple, as it is easy to verify unemployment status.

Another reason to favor hiring credits in the short-term pertains to distributional effects. Although the greater concentration of benefits on poor and low-income families generally favors worker subsidies, in the near-term such priorities may merit less emphasis. A striking feature of the Great Recession is its substantially greater adverse effects on men than on women. Figure 3 shows that employment growth slowed and the unemployment rate rose much more sharply for men than for women after 2007. Correspondingly, the unemployment rate for men has increased substantially more, from approximate equality in 2007 to gaps of over two percentage points in 2009. This is attributable to substantial employment declines in industries with a large share of males, in particular construction and manufacturing, in which the combined employment decline was about as large as the overall decline (based on CPS data 2006 to 2009). Thus, in the near-term a policy that directs more of the benefits towards men would help those who have been hit hardest by the Great Recession, and in many cases families whose incomes are temporarily quite low because of an unemployed male. A hiring credit focused on the unemployed would have this flavor.

Finally, macroeconomic considerations likely favor hiring credits over an expanded EITC in the short-term. The question of the nature of economic recessions is a deep and long-standing question in macroeconomics. The puzzle is that if labor markets clear like other markets, then how do we end up with high unemployment? What prevents wages from getting bid down by the pressure of workers competing for jobs? Putting things (too) simply, one view is that even though in a period like the current one unemployment is very high, labor markets are in fact in equilibrium, but because of shocks that have hit the economy worker productivity is sufficiently low that at the low wages currently offered workers choose to be unemployed (Lucas and

Rapping, 1969). The implication is that policies that shift out the labor supply curve would increase employment. That is, in this interpretation the types of analysis depicted in Figure 2 are appropriate for thinking about the alternative policies, because the labor market is in equilibrium, with wages and employment determined by the intersection of the labor demand and the labor supply curves.

However, the alternative (and more widely-held) view of recessions is that they are caused when aggregate demand in the economy declines, and there are rigidities that prevent wages from falling to clear the labor market. In this case, pushing out the labor supply curve, as an EITC or other worker subsidy would do, will do nothing to increase employment, since the employment increase from such a policy is ultimately generated because the labor supply increase lowers wages paid by employers, and if wages cannot adjust downward this does not happen.[35] To help illustrate this point, note that the same argument applies to any other feature of the labor market that prevents wages from falling. Thus, for example, if we are considering the application of hiring credits or worker subsidies to a population whose wages are constrained by the minimum wage, then only a hiring credit would be effective. Another way to think of this is that firms could hire all the workers they want at the going wage, because of excess supply, which implies that the supply of labor can be thought of as infinitely elastic (perfectly horizontal) (Katz, 1998, p. 25). In this case, a worker subsidy has no effect. In contrast, hiring credits have their maximal effect, because wages do not get bid up from the increased demand for labor.

Of course, in reality wages are not fixed. But they may be slow to adjust downward in nominal terms. Thus, in the short-term, it is fair to say that there is less certainty that worker subsidies will be as effective at increasing employment as the research record indicates, or that there is less scope for worker subsidies to have this effect. Of course the converse of this –

[35] More accurately, pushing out the labor supply curve will do *less*. In an efficiency wage model, for example, higher labor supply will raise the unemployment rate, lowering the efficiency wage.

which is important to keep in mind thinking about the longer-term – is that hiring credits may be quite ineffective at increasing employment, and instead mainly result in higher wages, when labor markets are much tighter and unemployment is low, if, in such situations, labor supply is highly inelastic (more vertical).

More generally, the arguments favoring hiring credits over worker subsidies are more germane to the short-term response to the Great Recession. With the recovery of industries in which men are over-represented, policymakers would likely be more inclined to refocus attention on assuring adequate income for female-headed households with children. And finally, with labor market equilibrium restored, and both aggregate labor demand *and* labor supply determining employment, the relative effectiveness of worker subsidies would likely increase.

Costs and benefits

Whether either policy is worth pursuing – and, if so, which one – hinges in part on the cost per job created. The cost calculations discussed earlier suggest that there is a strong likelihood that the cost of creating jobs via an EITC could be much higher than the cost of creating jobs via hiring credits. This conclusion should be tempered, however, because there is simply less rigorous evidence on the effects of hiring credits on employment, and some of the cost estimates of hiring credits are based on strong conclusions about the positive job creation effects of a previous anti-recessionary hiring credit program that may not be justified. Nonetheless, there are – in principle at least – ways to structure hiring credits to create incentives for new employment. With the EITC, in contrast, because payments have to be phased out there seems no way to avoid the equivalent of large-scale windfalls. Of course this less favorable view of worker subsidies with regard to costs per job created reflects fact that, at its core, the EITC is not a job creation policy per se. Instead, it is best viewed as a combination of an income-support program and an income-redistribution program.

This perspective, in turn, highlights the point that simple cost comparisons might not be the only criterion by which to choose a policy. Although some of the benefits of alternative job creation policies – such as multiplier effects on the macroeconomy – may not differ much between hiring credits and worker subsidies, others may differ substantially. The beneficial distributional effects of the EITC, and perhaps also the case for targeting more benefits towards adult males in the wake of the recent recession, highlight this point. Nonetheless, on a pure cost-per-job-created basis, hiring credits appear more efficient.

V. Putting the Potential Effects of Job Creation Policies in Perspective

The Congressional Budget Office estimates that, as of the end of the second quarter of fiscal year 2010 (September, 2010), $570 billion of the total ARRA stimulus funding will have been spent, and estimates that as of that same quarter employment was higher by 1.4 to 3.6 million, compared to what would have occurred absent the stimulus (CBO, 2010). Measured this way, these figures imply costs per job created of $158,000 to $407,000.[36]

The discussion above suggested that the range of estimates per job created using worker subsidies is $50,000 to $117,000 (although possibly more), and the range for hiring credits focused on the unemployed was $9,100 to $75,000, with the costs perhaps much lower if we take account of multiplier effects (which the CBO estimate does). These ranges suggest that it is very likely that the costs of creating jobs via hiring credits are *much* lower than the costs of job

[36] See http://cboblog.cbo.gov/?p=1326 (viewed September 26, 2010). The $570 billion figure comes from the report's estimate that 70% of the total $814 billion impact will be spent by the end of fiscal year 2010, which ends in September 2010. And the employment figures come from the report's Table 1, which shows employment created through the third quarter of 2010 (that is, September, 2010) of 1.4 to 3.6 million. There is some ambiguity regarding how to count the jobs created by the stimulus (putting aside issues of how to estimate these effects). Since jobs are not permanent, some jobs created by the stimulus would already have ended by September, 2010, in which case these estimates of costs per job created by the stimulus are too high because they divide the cost of the stimulus by the employment differential at a point in time, and do not include jobs that were created but already ended. A report from the President's Council of Economic Advisers (CEA, 2009) tries to account for this issue by estimating job creation as the sum of the employment differentials in each quarter in the President's first term (which roughly coincides with the period in which the stimulus is expected to have an impact). This lowers the estimate of cost per job created. However, since the job creation effects of hiring credits and worker subsidies were calculated based on employment at a point in time, rather than the cumulative effects over many periods, the best comparison to the job creation costs of the stimulus is with the CBO estimates.

creation via the federal stimulus. This is likely also the case for worker subsidies, although here the ranges overlap so this is less clear unless one is confident that the costs of job creation via worker subsidies are at the lower end of the range. Based on midpoints of the estimated costs per job created, using the alternative policies yields costs of $290,000 via stimulus spending, $110,000 via worker subsidies, and $42,000 via hiring credits. That is, hiring credits – which appear most effective – are about 6.9 times more effective than stimulus spending, and possibly more.[37] One might argue that the stimulus delivers other benefits, such as rebuilding infrastructure, and that is no doubt true. But there probably also are beneficial effects of the jobs created via hiring credits and worker subsidies, although comparing the benefits is likely fruitless, given that they fall on different people.

At the federal level, these rough calculations suggest that hiring credits, in particular, could be an important part of efforts to spur job creation. In principle, the same applies at the state level. However, one must keep in mind that the fiscal resources of the federal government, because of its ability to borrow vast sums, far outweighs the fiscal resources of state governments – even in the best of times, let alone during the current budgetary difficulties.

To put this in perspective at the level of a particular state, consider the state of California as an illustrative example. If we simply assume that the range of employment-creation effects estimated by the CBO was distributed to California in proportion to its population (12%), the job creation effects at a point in time range from 168,000 to 396,000. Using these estimates, and assuming no other changes, the implication is that absent the federal stimulus, the unemployment rate (in November, 2010) would have been from 13.3% to 14.6%, compared with the actual rate

[37] Another issue is whether we are comparing similar jobs created by the alternative policies – for example with respect to how long jobs last. However, given that less-skilled workers have much higher unemployment rates than more-skilled workers, it is probably best to think about the stimulus as to a large extent targeting similar sets of workers to those targeted by hiring credits and worker subsidies, at least when hiring credits focus on the unemployed.

of 12.4%.[38] However, the same proportional distribution of federal stimulus funds to California would imply extra federal spending of over $68 billion. Thus, to get an equivalent job creation effect to that created by the federal stimulus, spending via hiring credits in California would have to total $9.9 billion (the estimated federal stimulus spending in California, divided by 6.9), and there is likely no possibility of the state spending anything near that amount – nor of other states spending similar amounts, adjusted to their size.

More realistically, suppose California spent one-tenth of this amount, or approximately $1 billion. Using the midpoint of the hiring credit estimates of costs per job created, this would lead to about 24,000 more jobs, which would lower the most recent 12.4% unemployment rate to 12.26%, a decline of less than two-tenths of a percentage point. If we instead took the low estimate of the cost of creating jobs via hiring credits ($9,100), then the spending of $1 billion would create 110,000 jobs, lowering the unemployment rate to 11.8%, or a decline of six-tenths of a percentage point. Thus, even under a low-cost estimate of the cost of creating jobs via hiring credits, a state's ability to significantly impact the labor market is limited. The ability of federal policy to counter the cycle is far greater, and of course the ability of the economy itself to create jobs, as it recovers, swamps the effects of either state or federal policy.

VI. Policy Considerations and Options

In addition to providing evidence on the effects of hiring credits and worker subsidies, the existing literature points to a number of ways that these policies might be made more effective. There is less direct evidence on some of these considerations, and the discussion in this section presents a blend of research-based findings and conjecture.

[38] For the November 2010 numbers, see http://www.edd.ca.gov/About_EDD/pdf/urate201011.pdf (viewed December 3, 2010). The assumption of no other changes is not completely realistic. Typically when job growth strengthens some people who had previously given up looking for work re-enter the labor force and look for work, in which case the unemployment rate would decline by less than would be predicted simply by the growth in jobs. Nonetheless (and for this reason), growth in the number of jobs is a better gauge of economic recovery than is the change in the unemployment rate. (See Kwok et al., 2010.)

Hiring credits

The evidence on hiring credits focused on the disadvantaged is fairly bleak, likely because of stigma effects. In contrast, a broader hiring credit that is either non-categorical or focused on the recently-unemployed would likely be more effective, by avoiding or reducing stigma effects; this is certainly consistent with the stronger evidence of beneficial effects of the NJTC in the late 1970s.

The issue of narrow versus broad targeting of hiring credits also bears on the potential for displacement. Either because of explicit targeting of the low-skilled, or offering a credit for a given, relatively low amount of earnings, either type of hiring credit lowers the cost of less-skilled relative to more-skilled labor. We would expect employers' responses to be larger when it easier to substitute low-skilled for higher-skilled workers. When a hiring credit is narrowly targeted, it may (putting aside stigma concerns) be relatively easy for employers to hire from the eligible group, displacing others who are not eligible (Katz, 1998). There may be distributional reasons why policymakers are willing to accept this tradeoff, but the potential adverse effects on non-targeted groups mitigate job creation effects. In contrast, when hiring credits are more broadly based, the scope for substitution is weaker, making *net* positive employment effects more likely.

A fundamental challenge for hiring credits is creating incentives for new job creation, reducing windfalls. However, more complex schemes designed to get these incentives right likely also raise administrative costs that can deter firms from taking advantage of hiring credits. No matter where the economy is in the business cycle, some windfalls are inevitable. However, because these windfalls are less likely when job growth is low or negative, hiring credits would

probably prove most cost effective during and soon after recessionary periods.[39] In addition, avoiding retroactive filing for hiring credits will probably increase the likelihood that hiring credits are paid for hiring that was induced by the credit, rather than simply rewarding firms for hiring in the past that might have been done regardless of the credit.

There are some other issues with regard to structuring hiring credits that deserve mention. First, to the extent that hiring credits are intended to be a countercyclical policy, there is a general consensus that they would be more effective if they are temporary, as a policy that reduces the cost of hiring for a short, predefined period is more likely to shift hiring *into* that period – exactly the goal of countercyclical policy.[40] Second, hiring credits have sometimes focused on smaller employers. The rationale for this may be that smaller firms contribute disproportionately to job growth.[41] However, this fact does not imply that small firms are more responsive to hiring credits than are large firms. Indeed the evidence suggests that it is primarily large firms that take advantage of hiring credits (Perloff and Wachter, 1979), perhaps because administrative costs deter small firms. Second, recent research shows that the disproportionate contribution of small firms to job growth comes solely from newer firms (Haltiwanger et al., 2009), so targeting small firms per se may not be effective.

Finally, research on the political economy of hiring credits suggests that it is important to ensure not only that the *design* of the hiring credit minimizes windfalls to employers, but that the longer-term *implementation* of the credit is not distorted so as to increase windfalls to employers. Lorenz (1995) discusses the case of the TJTC, which was intended to minimize windfalls by

[39] Of course a hiring credit that kicks in only when a firm has positive employment growth will do nothing to slow job losses are at firms that are not growing, and could even encourage job losses in the short-term so that the firm can earn the credit for subsequent job growth. In principle, it would be ideal to compare actual employment growth to the unobserved counterfactual employment growth that would occur without the credit, but this ideal is unattainable – which is one of the reasons there will always be windfalls.

[40] One potential qualifier, however, concerns the possibility that part of the explanation for low utilization of hiring credits in the past stems from lack of knowledge about the credits (Perloff and Wachter, 1979).

[41] For recent evidence of this, see Neumark et al. (2011).

mandating ongoing program evaluation with reporting to Congress on the credit's effectiveness in increasing employment among targeted groups. Lorenz argues, however, that, via the oversight process, interest groups distorted the credit into "a windfall for businesses that hire large numbers of low wage workers" (p. 270). Of course the incentive for businesses is to get the credit applied to as many workers as possible, in contradistinction to the policy goals of hiring credits. Keeping hiring credits temporary and focused on anti-recessionary efforts may help to avoid the transformation of these credits into general tax relief.

Worker subsidies

A number of options for modifying the EITC have been proposed. One proposal is to enhance the now-trivial EITC for individuals or families without children (Berlin, 2007; Gitterman et al., 2007; Scholz, 2007), to offset some of the effects of the long-run decline in wages for less-skilled men. Aside from reducing the incentive of these men to work (Juhn 1992), the wage declines may have had other social consequences that could be mitigated by an expanded EITC. For example, Berlin suggest that declining earnings of less-skilled men has made them less attractive marriage partners and led to lower marriage rates and higher rates of out-of-wedlock childbearing and childrearing. In other words, the focus of the EITC on single mothers – typically rationalized on the basis of its distributional effects – may have unintended adverse distributional consequences via effects on family structure.

Berlin's argument is in large part speculative, although there is some indirect evidence to suggest it could have some validity. For example, Scholz (2007) refers to ethnographic evidence that, among poor women, "having a good job" is among the most important characteristics of potential marriage partners (Edin and Lein, 1997). Scholz also discusses a number of studies indicating that higher wages and lower unemployment reduce crime, and evidence he characterizes as "limited" (p. 17) suggesting that higher earnings may promote marriage.

There are, though, some potential problems with expanding federal or state EITC's in this fashion. First, the evidence of positive employment effects stems from single mothers. Employment effects for childless men may be much weaker, because these men do not face the employment barriers posed by children. An EITC would still likely increase income, but the overall effect is likely to be weaker, especially on the extensive margin. Second, in communities with low marriage rates, men who owe child support who are not working (or working off the books) may be reluctant to work and file a tax return to get the EITC, because their child support payments may be garnished from their wages – although for some men the higher income may make them more likely to pay their child-support obligations (Gitterman et al., 2007). Wheaton and Sorensen (2009) discuss a variant of the EITC that addresses this by targeting non-custodial parents who make full child-support payments, but still leave the individual with more income after receipt of the EITC and payment of child support (implemented in New York and the District of Columbia).

Third, increasing EITC benefits for unrelated individuals would increase the extent to which they compete with single mothers. This could reduce some of the beneficial distributional effects of an EITC that mainly rewards work among families with children, and policymakers may – for reasons unrelated to job creation per se – prefer to direct resources toward the latter. Evaluated solely in terms of job creation effects, an expanded EITC for unrelated individuals might increase overall employment, by lowering the market wage for more workers, and having a greater effect on the "first" affected unrelated individual than the "last" affected single mother. Thus, there are a number of unanswered questions regarding the potential benefits of implementing an EITC that extends substantial incentives to adults without children.

There have also been proposals to restructure the EITC to improve targeting of benefits and reduce labor supply disincentives. EITC payments go to families well above the poverty

line, to avoid phasing out benefits too quickly. In addition, individuals with high wages but low hours worked can be eligible for the EITC, and there is little reason for policies to transfer income to higher-wage individuals. MaCurdy (2004) discusses two options: a "wage-based" EITC that pays a share of the maximum EITC benefit based on the share of full-time work in a family; and a "wage-subsidy" EITC that pays the difference between a target wage and the worker's market wage (when it is lower), multiplied by hours worked (averaged for the family). In the context of state add-ons to the federal EITC (in data for California), his simulations suggest that the wage-based policy provides similar incentives and benefits for low-wage workers, but greater work incentives for higher-wage workers, while lowering expenses by reducing benefits for families with high-wage and part-time workers; and the wage-subsidy policy targets families with low-wage workers and provides stronger work incentives. As MaCurdy notes, however, these alternative EITC programs pose greater administrative challenges, because they require measuring family labor supply.

There are also other ways to create pro-work incentives. Blank et al. (2000) review evidence on experimental programs in the United States that focused on the welfare eligible population, but shared the common feature of the EITC of strengthening work incentives in a couple of key ways, including: increasing the basic welfare grant if the person became employed; and reducing the extent to which welfare benefits were reduced as earnings increased (equivalent to reducing the phase-out rate for the EITC). The evidence generally indicates that these programs strengthened work incentives, increasing employment as well as earnings.

Blank et al. also consider two programs that imposed a minimum hours of work requirement (30 or more hours per week). A minimum hours requirement should encourage full-time work and reduce the incentive for employed people to reduce their hours, but it can also weaken employment effects among those for whom only part-time employment is feasible. On

net, the evidence points to positive employment effects.

The Self-Sufficiency Project (SSP), which focused on the welfare population in two Canadian provinces, had large effects on employment and full-time employment, consistent with its very strong incentives. In addition, SSP's minimum hours constraint (along with its focus on longer-term welfare recipients appears to have vastly reduced the number of people who received the benefit without changing their behavior. While Bartik suggests that for the EITC, perhaps only one in 20 of those receiving benefits enter employment because of the program, for SSP the ratio is one in two. Clearly a sizable increase in the ratio of the number of beneficiaries that change their behavior relative to the number that get the benefits of the program without changing their behavior can radically lower costs per job created. Of course if a program is narrowly targeted there could be greater displacement of ineligible workers, and less scope for large-scale employment effects.

The second program was New Hope, an experiment in Milwaukee that applied more broadly to non-welfare recipients, and also offered supplements to single men, a group of interest in light of the discussion above about extending the EITC. New Hope generally produced positive effects on employment, earnings, and family income of men, even up to five years after the program, although many of the estimated effects are not significant (Duncan et al. 2007). This evidence suggests that worker subsidy programs targeting unrelated individuals can increase their employment; and the minimum hours constraint may be key to generating positive employment effects for these individuals. However, it may not be accurate to characterize New Hope as solely a worker subsidy program. New Hope also offered temporary job placements, like past public-sector employment programs, and it offered work supports such as job search assistance, which have sometimes accompanied hiring credit programs. Thus, we should be cautious in attributing the effects to the financial work incentives, and indeed Duncan et al.

(2008) suggest that the job placements may have been responsible for much of the employment effect. To some extent this echoes the evidence on hiring credits targeting the disadvantaged, which appear to be effective mainly when they are combined with other supports.

Incentivizing employment vs. hours

One important issue with regard to hiring credits is whether they should subsidize new employment, or also increases in hours for existing employees. To consider this question, it is important to understand how the slope of the supply curve influences the effects of a hiring credit.[42] To take an extreme case, suppose supply is fixed, so that the labor supply curve is vertical. Clearly in this case when the labor demand curve shifts there is *no* employment increase, and only a wage increase. Workers' wages increase by the full amount of the credit, and firm's labor costs are unchanged. In this case, the "incidence" of the hiring credit falls on existing workers – because the effect of the hiring credit is to increase the price they earn for their labor. Thus, when labor supply is relatively rigid, hiring credits result mainly in higher wages for existing workers, and do not create many jobs. In contrast, when labor supply is very responsive to wages, a hiring credit pushes out the labor demand curve against a relatively flat labor supply curve, generating a large employment increase but not much wage increase, so the incidence of the hiring credit is on firms, because the effect of the hiring credit is to reduce their labor costs.

A large research literature on labor supply largely concurs with the finding that labor supply on the intensive margin is quite inelastic, while labor supply on the extensive margin is more elastic (Heckman, 1993, and Meyer, 2002). As a consequence, a policy that does more to subsidize the extensive margin will lead to larger effects on total hours of work, because it

[42] This discussion could be couched in terms of the effects of worker subsidies. But the issue of incentivizing employment versus hours is prominent with regard to hiring credits. In addition, the slope of the labor demand curve also has implications for the effects of the two kinds of subsidies. But the discussion in this sub-section has to do with labor supply.

encounters more responsive labor supply than does a policy that subsidizes hours. This implies that even if we are agnostic about the merits of creating more "full-time equivalent employment" through employment of more people, or increased hours, a hiring credit that creates incentives on the extensive margin – i.e., for new employment – is likely to be more effective.[43]

VII. Conclusions

It is difficult to make definitive statements about hiring credits and worker subsidies as job creation policies. We do not know with absolute certainty whether either of these policies (or other policies) will work, in the sense of creating significant numbers of new jobs at reasonable cost, and we do not know definitively that one policy or the other creates jobs at lower cost. Moreover, we do not have a comparison with the nearly infinite set of indirect policies. Nonetheless, with an appropriate understanding of the potential limitations of the evidence, two key conclusions emerge. First, both hiring credits and worker subsidies likely create jobs and increase employment, although the evidence of the employment-creating effects of worker subsidies is more rigorous. And second, hiring credits almost surely cost less (and possibly much less) per job created.

In terms of responding to the current high unemployment rates stemming from the Great Recession, hiring credits that focus on the unemployed or are non-categorical are likely to be most effective. Such credits would avoid the stigma effects that have plagued hiring credits targeting the disadvantaged. Hiring credits are also likely more effective during an economic downturn. And finally, although in more normal times the criticism that hiring credits do a worse job at targeting poor families may be more germane, in the aftermath of a recession that fell very heavily on men, the short-run effects of a hiring credit focused on the unemployed

[43] This contrasts with some of the specifics of the hiring credit proposed by Bartik and Bishop (2009), which is intended to create incentives to increase hours and employment. And note that this conclusion parallels the evidence discussed in the previous sub-section – that worker subsidies with minimum hours constraints, which do more to incentivize employment than hours changes, have larger labor supply effects.

would likely deliver a substantial share of benefits to low-income families. Hiring credits would likely be more cost effective if they are temporary and focus on the recently unemployed, if they create incentives for new employment rather than increases in hours of existing employees, and if they use simple rules and a relatively low hurdle for employers to claim the credit. Moreover, there is no reason to believe that hiring credits would not be as effective, or even more effective, at large firms as compared to small firms.

In the longer term, however, when the focus can shift back to boosting employment among less-advantaged groups, workers subsidies have more to recommend them. Hiring credits are less effective at increasing employment among these groups, and are likely to become less effective as the labor market tightens. In addition, traditional distributional concerns with low-income and often female-headed households will become more paramount. In states without an EITC, the simplest thing to do is to adopt an add-on to the federal EITC. However, other options, such as rewarding full-time work via minimum hours constraints, may enhance the employment effects. And there are some arguments for creating EITC's that are more generous to those without children; such an EITC might do less to increase employment, although it could have other payoffs.

Finally, federal and state governments would likely be better prepared to counter future recessions if they enacted hiring credits that remain on the books permanently, but which more aggressively reward hiring unemployed workers during economic downturns, and "turn off" during better economic times. A countercyclical hiring credit, like other "automatic stabilizers," could help cushion the blow from future recessions.

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Table 1: Hiring Credits, 2010

A. Federal		
HIRE Act	Exemption from employer share of Social Security taxes (6.2%) for March-December 2010; $1,000 tax credit per worker; for workers unemployed or not employed (more than 40 hours total) in 60 days prior to hire; for hires into new positions or existing positions if previous worker left voluntarily or for cause	
WOTC	Varying maximum credit amounts for long-term and other TANF recipients, Veterans, SNAP recipients, residents of designated communities, summer youth, disabled, ex-felons, SSI recipients, Katrina "employees," disconnected youths hired for two-year period; credit is percentage of qualified wages, which are capped (percentage and cap vary by group)	
B. States (examples, excludes enterprise zone credits)		
Connecticut	New Jobs Creation Tax Credit	Discretionary tax credit up to 60% of the income tax for taxpayers that create and maintain at least 10 full-time new jobs
Delaware	Blue Collar Job Act	Credits up to 50% of firm's tax liability for eligible businesses that are engaged in a qualified activity, hire five or more qualified employees; and invest at least $200,000 ($40,000 per qualified employee) in a qualified facility; also $400 corporate income tax credit per employee and per $100,000 investment
Florida	Jobs for the Unemployed Tax Credit Program	Tax credit of $1,000 for every employee, for new hires that were previously unemployed for a minimum of 30 days, and that remain employed after a 12-month period at an average of 36 hours per week
Georgia	Quality Jobs Credit	Credit of $2,500-$5,000 per job per year, for up to five years, for companies that create at least 50 jobs with salaries of at least 110% of the county average; credit rises with ratio of salary to county average, from $2,500 for 110%-120% of county average to $5,000 for 200% or more of county average
Illinois	Small Business Job Creation Tax Credit	$2,500 tax credit for employers with 50 or fewer total employees who hire new, full-time Illinois employees, for new, full-time jobs sustained for at least one year; job must pay at least $25,000 per year
Iowa	New Jobs Tax Credit	Credit for businesses entering into jobs training agreement with a community college, and increasing base employment level by at least 10%; credit is 6% qualifying wages
Maryland	Job Creation and Recovery Tax Credit	Credit up to $5,000 for hiring individuals receiving unemployment insurance benefits or who exhausted benefits in the previous 12 months and are not working full time immediately preceding the date of hire; hiring into full-time positions that are new or have been vacant for at least 6 months
Rhode Island	Hiring of Unemployed or Low income Residents	Credit of 40% (up to maximum of $2,400) for newly-hired state residents previously unemployed or receiving public assistance; worker must have been unemployed for a period of at least 26 consecutive weeks prior to hire and either received public assistance for at least 1 year or have received unemployment benefits at any time during the prior 52 weeks
West Virginia	Corporate Headquarters Credit	Tax credit offsetting up to 100% of tax liability for companies that relocate corporate headquarters to West Virginia and create 15 new jobs (including relocations employees)

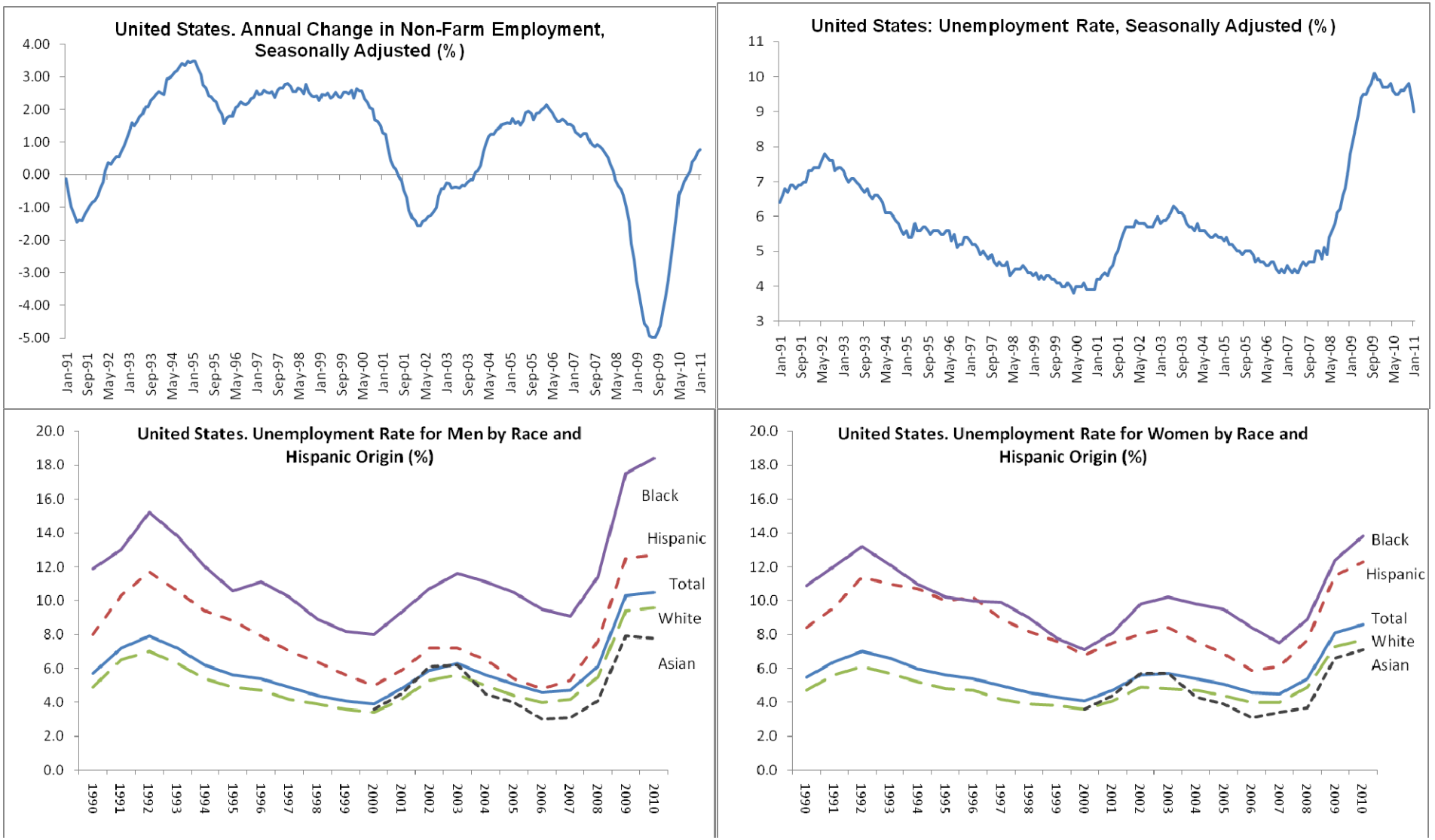
Table 2: The Federal Earned Income Tax Credit and Selected State Programs, 2010

A. Federal EITC (2010)				
	3 or more children	2 children	1 child	No children
Phase-in rate (% subsidy to earnings)	45%	40%	34%	7.65%
Maximum credit	$5,666	$5,036	$3,050	$457
Income at which maximum credit reached	$12,590	$12,590	$8,970	$5,980
Income at which phase-out begins	$16,450	$16,450	$16,450	$7,480
Phase-out rate (% reduction in credit with additional earnings)	21.06%	21.06%	15.98%	7.65%
Income at which credit eliminated	$43,352	$40,363	$35,535	$13,460

B. State EITC's (2009)	
	% of federal EITC
Delaware	20% (non-refundable)
District of Columbia	40%
Illinois	5%
Indiana	9%
Iowa	7%
Kansas	17%
Louisiana	3.5%
Maine	5% (up to $125 refundable for joint files)
Maryland	50% non-refundable or 25% refundable
Massachusetts	15%
Michigan	20%
Minnesota	Varies with number of children, averages 33%
Nebraska	10%
New Jersey	25%
New Mexico	10%
New York	30%
North Carolina	5%
Oklahoma	5%
Oregon	6%
Rhode Island	25% (non-refundable, but 15% of amount is refundable)
Vermont	32%
Virginia	20% (non-refundable)
Wisconsin	4% (1 child), 14% (2 children), 43% (3 or more children)

Notes: The separate credit for 3 or more children is a temporary measure for the 2009 and 2010 tax years, after which the numbers for families with 2 children apply to families with 2 or more children. Numbers shown are for those filing singly. Phase-in and phase-out rates are the same for those filing jointly; incomes at which phase-out rate begins and incomes at which credit is eliminated are higher by $5,010 for those filing jointly. In Panel B, if not noted state EITC is refundable. The dollar amounts are indexed.
Sources: Tax Policy Center, Urban Institute and Brookings Institution (http://www.taxpolicycenter.org/briefing-book/key-elements/family/eitc.cfm, viewed July 20, 2010); State EITC Online Resource Center (http://www.stateeitc.com/map/index.asp, viewed July 20, 2010).

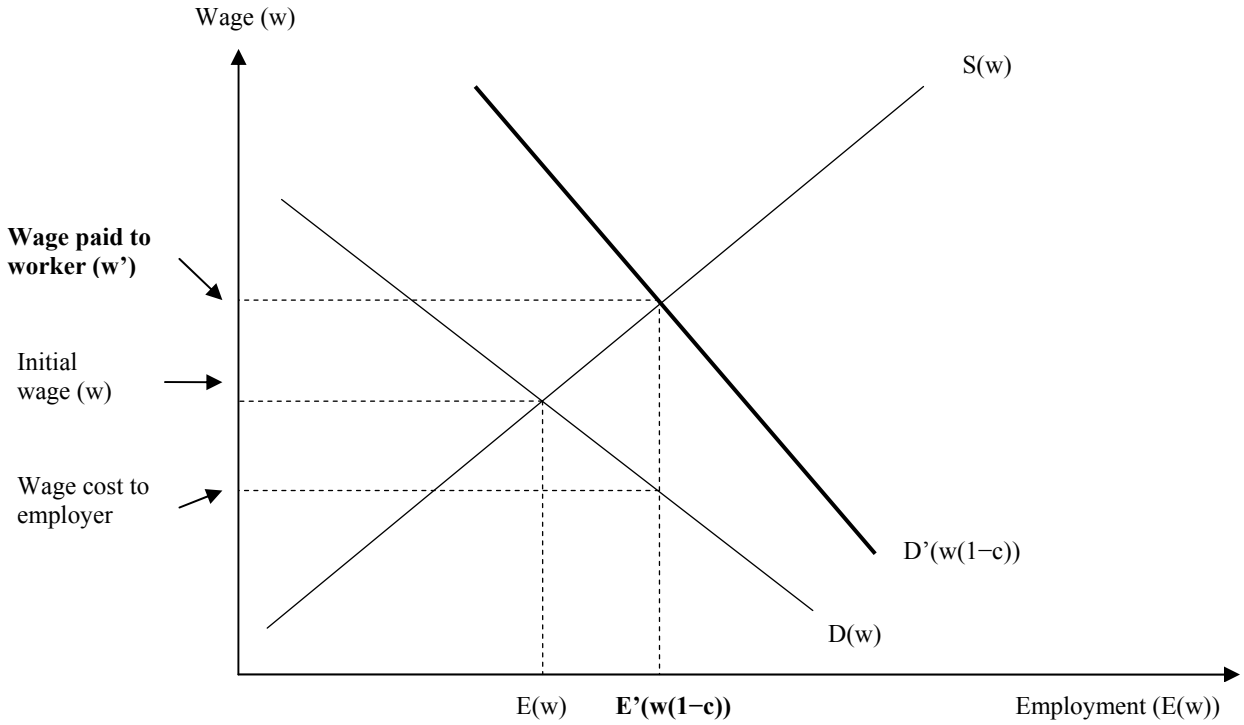
Figure 1: Changes in Employment and Unemployment, and Demographic Differences in Unemployment, in the United States



Source: The top-left panel is based on the Current Employment Statistics payroll survey, and the other panels on the Bureau of Labor Statistics Current Population Survey.

Figure 2: The Effects of Employer vs. Employee Subsidies

A. Employer Subsidy (c)



B. Employee Subsidy (e)

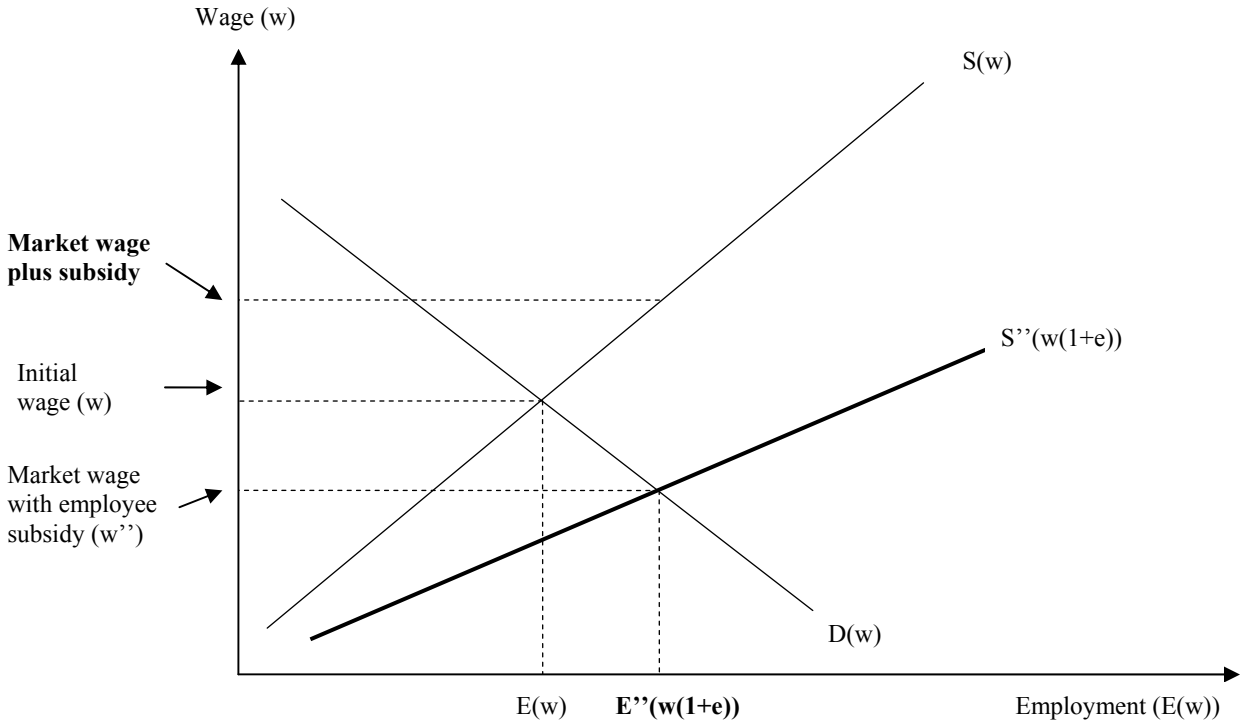
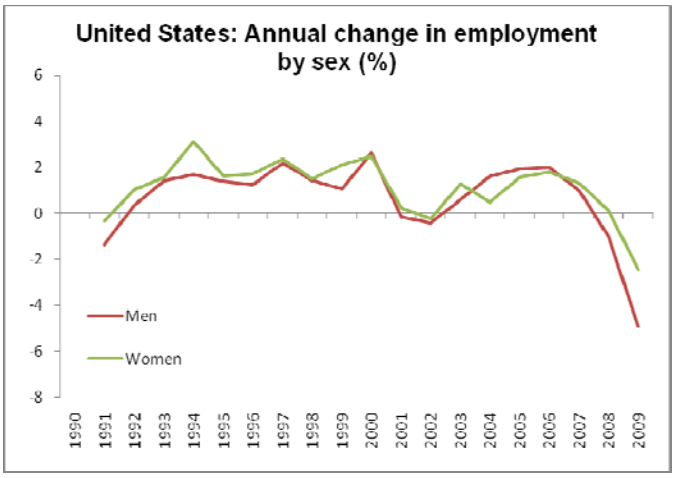
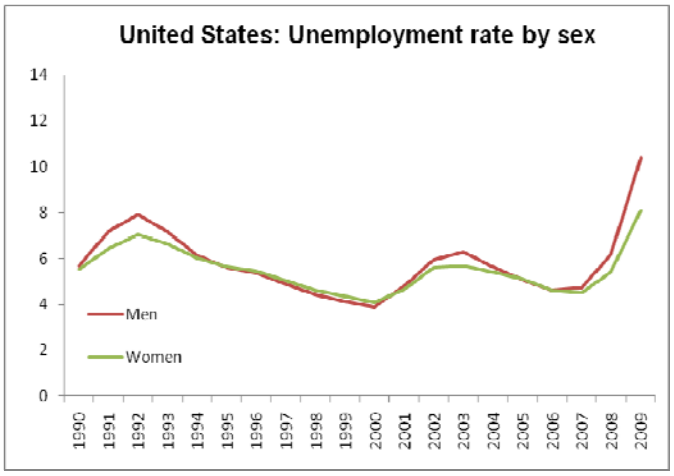


Figure 3: Employment Change and Unemployment of Men and Women





Source: Bureau of Labor Statistics Current Population Survey, Annual Averages.