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Job Creation Tax Credits: Still Worth Consideration?

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The economic wreckage from the Great Recession has been cleared away from many sectors of the economy. The stock market has risen to record highs, corporate profit margins have rebounded smartly, and housing markets have recovered in many parts of the country. Yet progress in the labor market remains unacceptable. Although the unemployment rate has declined from 9.6 percent at the depths of the downturn to 6.3 percent at the time of this writing, it is still historically high for this stage of an expansion, and it masks the stubbornly low employment rate of 59.1 percent.

In addition to monetary and fiscal initiatives to stimulate the economy and job creation, the Obama administration in 2011 advanced a job creation tax credit (JCTC) designed to directly stimulate labor demand. While there are many varieties of JCTCs, the common element is that, by undertaking certain hiring decisions, a firm receives a credit that lowers its tax bill. In 2010, a JCTC was part of the Hiring Incentives to Restore Employment (HIRE) Act. Only jobs created from the pool of unemployed workers qualified for this narrow-based credit of 6.2 percent of wages paid over 52 consecutive weeks of employment. (The HIRE Act also contained a Social Security tax exemption for employers.) Discussions continued in the midst of the slow recovery in the labor market. A second JCTC was part of President Obama's 2011 proposed American Jobs Act. This policy initiative offered a tax credit of $4,000 for hiring long-term unemployed workers. Bartik and Bishop argued in 2009 that a "well-designed temporary federal job creation tax credit should be an integral part of the effort to boost job growth." Blinder (2013) wrote that "[v]irtually since the Great Recession began, many economists have suggested offering businesses a tax credit for creating new jobs. While details

matter, the basic idea is straightforward: Offer tax breaks to firms that boost their payrolls."

Such discussions lead to two questions: 1) are JCTCs of the sort proposed by President Obama likely to be effective in reducing unemployment, and 2) are they likely to be efficient in terms of the cost to the government for creating a new job?

The Experiences of U.S. States

While JCTCs can take many forms, we are interested in a "broad-based" tax credit, in the sense that it applies to employers in a wide range of industries without substantial non-employment-based requirements. Broad-based JCTCs have been tried only once before at the U.S. federal level: the New Jobs Tax Credit, from 1977 to 1978. Although

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the federal government's experience with these JCTCs is quite limited, many states have pursued this policy. Our research uses the states' experiences to shed light on the two questions about the effectiveness and efficiency of JCTCs.

Nearly half of the states have enacted permanent, broad-based JCTCs over the past 20 years. The first of these credits was adopted in late 1992 and, by August 2009, 23 states had adopted such a tax credit (see Figure 1). The plurality of JCTC states are in the eastern United States, but there are also many in the Midwest and the South.

The design of these JCTCs varies among states. Three will be noted here. First, JCTCs are described by two key dates: the signing date on which the legislation is signed into law by the state's governor, and the qualifying date

on and after which net new hires by an in-state employer qualify for the credit. For some states, the dates are very close together or the qualifying date is before the signing date. We label such states as *immediate* states. Alternatively, when the qualifying date occurs after the signing date, we label these states as *delayed* states. This distinction is important if we are to get the "true" response to a JCTC.

Second, tax credits are intended to subsidize net job creation by businesses by expanding a business' total level of employment. With all but one of the state JCTCs examined in this study, a firm can only claim the credit if the number of jobs and/or total wages associated with new jobs are above specified thresholds. (There may be other requirements, such as providing health insurance.) Moreover, in order to target net job creation instead of gross job creation, the thresholds are defined in terms of a "rolling base." For example, if a firm has had 100 workers on its payroll over the past year, its threshold is 100. If it now hires an additional worker, a tax credit is given for this one hire. Next year, the threshold rises to 101, and tax credits will be extended if the number of employees equals 102 or greater.

Third, the monetary value of the JCTCs varies substantially among states. A particular challenge to our research was "translating" the enabling legislation into an economic variable amenable to traditional economic analysis, which we discuss next.

Lessons from Theory

Using the traditional tools of economic analysis, we analyze how a firm interested in maximizing profits will react to a JCTC. This analysis yields three hypotheses:

1) The following channels of influence link the legislation to employment: enabling legislation ➔ creation of a JCTC ➔ economic value of the JCTC ➔ lower wage costs ➔ more employment. Thus, during months at and after which firms qualify for the JCTC, we would expect employment to increase.

2) For firms in states with a delayed JCTC, the rolling base initially creates a perverse effect. Employers can perfectly anticipate the forthcoming decline in the net-of-tax-credit wage and hence have an incentive to initially decrease employment and meet sales by drawing down inventories before the qualifying date. Inventories will be replenished and hiring resumed after firms qualify for the credit in subsequent months. We refer to this potential negative effect on employment during the implementation period as an "anticipatory dip."

3) A consequence of the anticipatory dip is that firms in states with delayed JCTCs will have a larger employment gain in the month in which firms qualify for the tax credit than firms in states with immediate JCTC. This difference is due to the need of firms in the delayed JCTC states to replenish inventories and rebuild the workforce that was reduced because of the anticipatory dip. An important consequence of this pattern is that, in order to estimate the "true" incentive effect of the JCTC, we should examine the results for firms in states with immediate JCTCs.

Our theoretical analysis yields several other results. The most important insight for our empirical analysis is that the rolling base feature of JCTCs dramatically reduces the impact of the tax credit program. The JCTC is based on the salary in the first year; however, the programs require that position be held for a long period of time. In making hiring decisions, the firm compares the one-time incentive from the JCTC program to the wage bill over a long time horizon. If the time horizon is sufficiently long, a 10 percent tax credit, for example, is dramatically reduced by a factor of 20 to only 0.5 percent. This latter effect is what influences firms and enters our empirical analysis, to which we now turn.

Empirical Results

The empirical work reported here is based on monthly, seasonally adjusted employment data for private nonfarm businesses for the period January 1990 to December 2007.[1] We analyze our state panel data as an event study, where the event is the month in which firms in a given state can receive the tax credit. The analysis takes into account various factors that might influence employment.

Our empirical results are largely consistent with our three hypotheses. We begin by representing the effect of the JCTC as an indicator (dummy) variable, taking a value of 1 in those months where we expect a JCTC effect and 0 in other months. We find that immediate JCTC states have a positive and statistically significant response to the tax credit. However, for delayed JCTC states, the overall effect is surprisingly negative.

These results are sensitive to the length of the interval after the qualifying date over which we evaluate the JCTC. When this interval is lengthened from two to four years, the cumulative responses become much larger and positive, though still statistically insignificant. Thus, we have weak evidence for Hypothesis 1 and stronger evidence that it takes a significant period of time for firms to respond to the tax incentive. Regarding Hypothesis 2, we document an anticipatory dip in

> **The rolling base feature of JCTCs dramatically reduces the impact of the tax credit program.**

delayed states. For firms in these states, employment falls during the months on or after the legislation is signed but before firms are qualified to receive tax credits. The data also support Hypothesis 3. For the month in which firms are qualified to receive tax credits, the response in delayed states is twice as large as for immediate states.

These results treat each JCTC equally, an assumption that is not warranted given the variation in the size of the JCTC incentives by different states. We reexamine these relations multiplying the JCTC indicator variable by a measure of the economic impact of the stimulus, which accounts for both the size of the legislated rate and the adjustment needed to reflect the rolling base. After undertaking other analyses to explore the effects of some factors that may lead to different interpretations of our empirical results, our general conclusion is that, for immediate states, JCTCs matter for employment growth.

Figure 1 States That Have a JCTC as of 2009
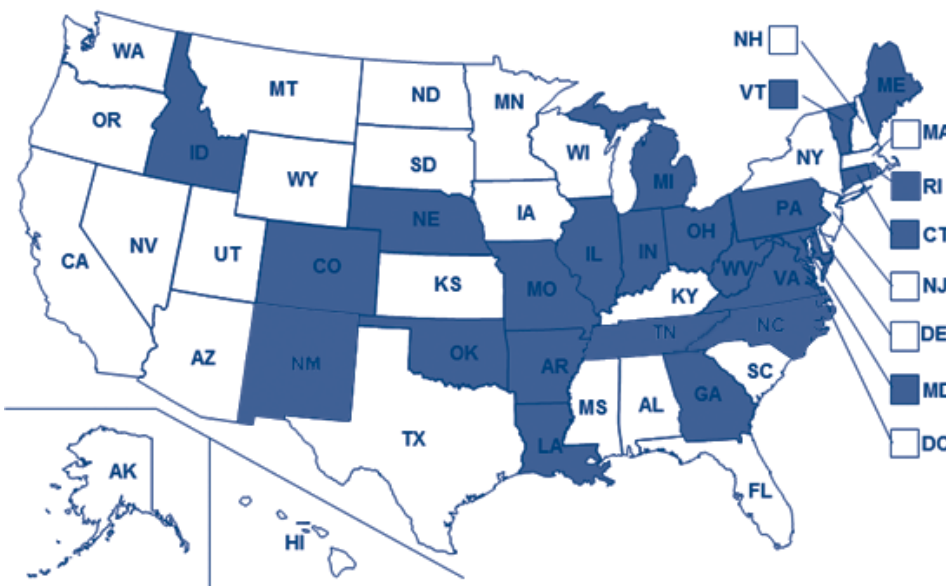
As mentioned earlier, we believe that the immediate states provide the best "experiments" for assessing the JCTC. Our empirical results can be summarized in terms of an elasticity, the percentage change in employment for a 1 percent change in the net-of-tax-credit wage rate induced by a JCTC. Our preferred elasticity estimate is 0.30, a figure that is very much in line with estimates in other parts of the labor economics literature.

Assessing the Effects of a JCTC

With this estimated elasticity, we are now in a position to address the question of whether a JCTC is likely to be effective and efficient. In particular, we assess the impact of the 2011 Obama proposal of a $4,000 federal JCTC for long-term unemployed workers. For the average worker, this corresponds to about a 10 percent reduction in one year's wages. However, the effective JCTC is the product of this change, the adjustment for the rolling base aspect of the state JCTCs in our sample (0.065), and eligibility of firms for the JCTC program (0.94). Thus, the effective decline in wage costs is 0.6 percent. Multiplying this figure by our elasticity of 0.30, we obtain an increase in employment of 0.2 percent, which corresponds to about 280,000 workers, or a reduction in the unemployment rate of 0.2 percentage points; for example, from 6.3 to 6.1 percent. Comparable calculations indicate that the employment rate would rise by only 0.1 percentage point. The likely outcome might be a bit larger, since the average wage for the long-term unemployed is probably less than the average wage for all workers, thus boosting the impact of the credit upward from 10 percent. Nonetheless, the estimates suggest that the JCTC proposal is not likely to be effective in markedly lowering the unemployment rate or raising the employment rate.

An important factor in determining this modest effect is that the policy initiative is relatively small because of the rolling base feature or, equivalently, because a reduction in one year's wages is very small when compared to the total wage cost over the expected

employment relationship. Moreover, the cost to the government of creating these new jobs will be small as well. To explore this cost-per-job, we use our estimated elasticity of 0.30, set aside any considerations of multiplier effects, and make some additional assumptions: the number of jobs that generate tax credits even though they would have been created without the JCTC (the smaller this "inframarginal" job growth, the lower the cost per job); and the percentage of eligible firms that use the tax credit (the lower this take-up rate, the lower the "leakage" of subsidies to inframarginal job growth). Our computations suggest that the cost-per-job will be about $27,000.[2] This figure is much lower than many found in the literature. For example, most estimates of the cost-per-job created by federal spending policies during the Great Recession exceed $100,000.

Conclusion and an Interesting Exception

Our study has explored the effectiveness and efficiency of adopting a federal JCTC through the lens of the experiences of U.S. states. Based on our analysis, we conclude that the program would not be very effective in lowering the headline unemployment rate or raising the less noticed employment rate. We have identified a reason for this modest effect—the rolling base feature of the JCTC substantially lowers the subsidy to employment, but it also lowers the cost to government. On balance, JCTC would appear to be efficient in terms of the cost per job ranging from $21,000 to $27,000. All states but one have adopted a rolling base in implementing their JCTCs. For the period 1995–1997, Rhode Island adopted a temporary JCTC with a fixed base, which removes the dampening effect with the rolling base identified in our theoretical work. The temporary nature of the credit forces firms to accelerate any hiring plans. Given that we have only one data point for this special case, we can just report that the tax credit of 20 percent was associated with an employment elasticity of 0.9, three times larger than the one reported in our results

for other states. The cost per job created is $9,000. Relative to the permanent credits studied above, the Rhode Island JCTC is both more effective and more cost efficient.

Bartik and Bishop (2009) have undertaken a detailed simulation exercise of a temporary JCTC valued at 15 percent of the wage cost of new employment in 2010 and 10 percent in 2011. They conclude that this JCTC program would create 5.1 million jobs over the two-year period at a cost per job of $37,000 without spillover effects and $5,400 when the resulting higher tax revenues and lower spending are considered. These calculations, coupled with the Rhode Island experience, are tantalizing and surely deserve further consideration from policymakers.

Notes

The views expressed in this article remain the sole responsibility of the authors, and the conclusions do not necessarily reflect the views of the Federal Reserve Bank of San Francisco or the Federal Reserve System.

1. The earlier date is the first month in which these data are published. The latter date is chosen to attenuate the effects of the Great Recession.
2. If the take-up rate is lowered from an unreasonably large value of 100 percent to 80 percent, the cost-per-job becomes $21,000.

References

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