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Does Labor Supply Matter During a Recession?

by: Casey Mulligan

September 14, 2010

During the recession of 2008-9, the federal government took a number of steps to help citizens and the economy, including expansion of food stamps and unemployment insurance, helping financially distressed homeowners refinance their mortgages, and offering tax credits to poor and middle class persons buying homes. The stimulus potential from these and other programs is said to derive from their redistribution of resources to persons with a high propensity to spend, but the same programs also implicitly raise marginal income tax rates because eligibility for them falls with the potential recipient's income.

High marginal income tax rates by themselves "normally" reduce economic activity to some degree, rather than increase it, although there is plenty of room to debate the magnitude of incentive effects. For the same reason, social safety net programs are not expected to increase employment in the long run. But a number of economists believe that recessions are those rare instances when labor supply does not matter, and might even affect the aggregates in the opposite direction as usual (Eggertsson, 2010a). Thus, it is possible that government spending programs like unemployment insurance could stimulate economic activity during a recession, even while they eroded labor supply incentives, and even while those programs had very different effects in non-recession years.

The hypothesis that, as compared to non-recession years, demand matters more and supply matters less for determining aggregate employment and output at the margin in a recession, is also the intellectual basis for Keynesian models of the business cycle (Eggertsson, 2010b, p. 2). Yet this hypothesis has not been the subject of much empirical testing, even though it is logically possible that supply matters at the margin just as much during times of severe labor market distortions as it does "normally." The purpose of this paper is to examine the seasonals in the monthly U.S. data dating back to the 1940s to attempt to measure the degree to which labor supply and demand differentially affect employment and unemployment during recession periods than during non-recession periods.

The seasonal cycle has several analytical advantages. As Jeffrey Miron (1996, p. 17) explains, "The seasonal fluctuations are so large and regular that the timing of the peak or trough for any year is rarely affected by the phase of the business cycle in which that year happens to fall." For example, Barksy and Miron (1989, Table 2) found that GNP falls 8 percent more than normal from Q4 to Q1. In a $14 trillion/year ($3.5 trillion/quarter) economy, that's a sudden reduction of $280 billion, which is a larger change than even the largest year-to-year change in government spending created by the American Recovery and Reinvestment Act of 2009 (Congressional Budget Office, 2009, Table 2), and larger than other peacetime government spending shocks (Alesina and Ardagna, 2009; Auerbach and Gorodnichenko, 2010; Barro and Redlick, 2009).

Many economic fluctuations are not easily partitioned into "demand" or "supply," but the seasonal cycle features an obvious demand change – Christmas – and an obvious supply change – the availability of teenagers for work during the summer. Moreover, these two seasonal impulses (measured as percentage changes from the previous and subsequent seasons – more on this below) react little to the business cycle, and thus provide the opportunity to measure different effects between recessions and non-recessions of a similar impulse. Finally, the seasonal cycles have occurred many times: there have been 12 summers and 12 Christmases during U.S. recessions since 1948. Even during the present recession – arguably different from many of the previous ones – Christmas and summer each occurred at least twice (depending on when the recession is deemed to have ended).

Previous work on the seasonal cycle has featured quarterly data, which had the advantage that the Bureau of Economic Analysis used to report seasonally unadjusted quarterly national accounts. However, unlike the labor market series used in this paper for which the raw data are seasonally unadjusted, much of the national accounts are built from seasonally adjusted inputs, and seasonally "unadjusted" national account series were obtained by attempting to remove the seasonally adjustments that had been implicitly introduced via the ingredients. More important, the supply and demand shifts of interest here do not coincide exactly with calendar quarters. The seasonal labor supply surge is seen already in June, which is part of the second quarter, and concludes in September, which is at the end of the third quarter. Obviously, Christmas is in

December, and some of its activity spills into November, both of which are part of the fourth quarter, but the monthly data permit me to use October as a benchmark for Christmas, rather than the third quarter which would differ from the fourth - not only in terms of Christmas demand but also in terms of summer labor supply.

Section I of this paper takes for granted that recessions are appropriately characterized as times of severe labor market malfunctions, and briefly shows that a couple of familiar theories predict that labor demand matters significantly more at the margin, and labor supply matters significantly less, during recessions than during non-recession years. However, other theories of labor market distortions predict that the incidence of supply and demand shifts would be no different during recessions than they would be during non-recessions, so these incidence questions must ultimately be answered with empirical evidence.

I find that the summer seasonals for teen employment, teen unemployment and total employment are large and in the direction to be expected if labor supply had shifted significantly more than labor demand. However, the seasonal cycles for recessions and non-recessions are not significantly different from each other.

The Christmas seasonals seem to be essentially the same in recession years as in non-recession years.

Even the 2008 and 2009 summers and Christmas' looked a lot like summers and Christmas' in nonrecession years.

These findings contradict the view – which is the basis for much fiscal policy and business cycle analysis – that labor supply shifts have little (or even perverse) effects on aggregate employment during a recession, and contradict the view that demand shifts encounter significantly fewer supply constraints during a recession than they normally would. Admittedly, recessions are times when the labor market does not function well, but nonetheless labor supply and demand seem to operate on the margin during recessions in much the same way that they do during non-recession years.

The Christmas cycle is at least as large as the high frequency peacetime government spending changes that have been observed in U.S. history, so my results might imply that fiscal demand shocks would have much the same employment effects in a recession as they would in non-recession years. Of course, the seasonal results by themselves do not rule out the possibility that a fiscal demand increase significantly increases employment regardless of whether or not it were a recession (although see Alesina and Ardagna, 2009 and Barro and Redlick, 2009, on this point).

It is possible that the labor market has different mechanisms to adapt to various supply and demand shifts, and that certain types of fiscal policy might be different from Christmas in this regard. The seasonal cycle is also easily anticipated.

Either case raises the question of how, exactly, fiscal policy might be different from Christmas, why government spending might encounter fewer supply constraints than Christmas does, and how that information can be used to better design fiscal policy during recessions.