

What Is The Effect of Unemployment Insurance on Unemployment Duration?

Unemployment insurance (UI) is a social safety net offered by the state for both social and economic reasoning. In a dynamic economy, littered with uncertainty, most people will at some point in their working lives experience spells of unemployment. Hence the UI payments have a wide spread effect on the citizens enabling consumption smoothing in between employment periods and facilitating voluntary unemployment which if preferred by the individual is not bad in and of itself. On the contrary others view unemployment as bad, for the UI program diverts tax money which could be used on other social programs and reduces the real output. (Bailey 1977:496) On these grounds there exists a constant public debate over the particulars of the program, some may champion extending the UI coverage period for its ability to enable workers to devote time to finding a good job, whilst others assert that UI perversely distorts incentives prolonging unemployment and thus the program should be reduced. Economic theory has sought to answer these policy debates by investigating the implications of unemployment benefits in a formal analysis. Proposed theories include search, intertemporal substitution and the sectoral shift hypothesis. With these ideas policy makers around the world have designed different programs with varying conditions, durations and generosity of payment amount; there has not emerged a consensus over the optimal design of an UI program. I seek to investigate the implications of UI on unemployment duration, using a simple search model, before more precisely focussing on the relationship between UI duration and unemployment duration. Fortunately for investigative purposes countries have a diverse array of institutional structures that have resulted in numerous UI durations, thus lending itself to empirical investigation of the theoretical claims.

I shall begin by explaining the principles and claims of a basic search model, demonstrating two possible conflicting ways that UI affects the escape rate of UI recipients. Following to investigate this relationship further I shall look at the impact of

a finite UI program and the subsequent relationship between UI duration and unemployment duration, in particular highlighting how the reservation wage and search intensity can change as UI payments reach exhaustion. Throughout I shall offer a handful of empirical studies to provide evidence concerning the theoretical points at hand.

Search theory provides a positive explanation of how UI compensation can be a beneficial resource; it facilitates search. Due to imperfect information about job opportunities and uncertainty, workers and firms are not informed who their optimal matches are. It takes time to acquire knowledge about opportunities, and hence make the most appropriate choices. UI compensation provides the unemployed worker with short-term resources to allow them to turn down wages that are not commensurate with their level of skill and to enable them to keep searching until a suitable opportunity has been found. It allows therefore for more efficient job matches in the long run¹, but also a constant, voluntary search/frictional unemployment. (Ehrenberg and Smith, 1988:614). On the contrary nevertheless, there is also the negative affect of UI that needs to be accounted for. Given an individual obtains utility from both income and leisure, and we assume leisure is a normal good, depending on the individuals preferences and budget constraint, it can be shown that it is optimal for an individual UI payments to simply facilitate leisure time. Feldstein, as a critic of the UI system suggests that UI benefits reduce the costs of unemployment, perverting the incentives, hence increasing the duration of unemployment (1973). If the UI program had no expiration for each worker, for some it would be optimal to continue on UI benefits and enjoy funded leisure time, rather than work for income at all. UI compensation from this perspective reduces those in employment, reducing the output of the economy and is an inefficient redistribution of wealth with regards to the overall economy.

¹ See Stigler (1962) for a comprehensive description of search activities UI facilitates.

With both sides of the argument appearing viable, the question arises, does UI subsidize search or subsidize leisure? Ultimately this is an empirical question, but first I shall clarify the analysis by referring to a handful of formal models.

Mortensen (1977) formulates a basic dynamic search model to illustrate the decision problems facing workers in an economy. Others such as Burdett (1979), Mortensen (1990) and van den Berg (1990, 1994) have also taken this approach. In the model he assumes that the distribution of possible wages is known and the individual searches sequentially. Job offers are independent random selections from the distribution of wages, which occur periodically. The individual will accept the first offer that exceeds a predetermined reservation wage. The reservation wage is derived by equating the marginal cost of generating another job offer, such as the costs of interview preparation and transport as well as the opportunity cost of the time spent searching, with the marginal benefit of waiting another period for the next offer, the next potentially higher wage offer. Concisely, it is the wage at which the individual is indifferent between employment and unemployment. Further the individuals select an intensity of search by equating the marginal future utility gain attributable to the time spent searching and the forgone marginal value of that time in leisure. Thus individuals 'maximize the expected present value of the future earning stream' (Mortensen, 1977). It is assumed that utility is a function of both leisure and consumption and that there are no savings. Mortensen asserts that the escape rate referring to the expected rate at which acceptable wage offers will be found, thus inciting an unemployed worker to make the transition from unemployment to employment. It is proportional to the intensity of search (effort) and the level of the reservation wage, $q = s[1 - F(w)]$. Where s is the intensity of search, w is the reservation wage and $F(\cdot)$ is the distribution of wage offers. (Meyer, 1990:758). The escape rate increases with s , but decreases with w , for if one searches more intently they can increase the rate at which offers are received, hence increasing the probability of finding a good match quicker but if the reservation

wage increases the probability of finding an acceptable offer given the wage distribution decreases. (16)

As assumed above utility is a function of both leisure and income. Hence, when unemployed the worker enjoys utility $U(b, 1-s_t)$, where b is the flow of benefit payments and s_t is the time devoted to searching for employment given the remaining future benefits last for time t . Solving a simple maximization problem, indicates the optimal reservation wage and search intensity. (For the explicit problem please see Mortensen, 1977: 511)

Leisure being a normal good and UI benefits being a form of income, implies that recipients have the incentive to increase $1-s_t$, thus decreasing the probability of receiving an acceptable offer and increasing the duration of the unemployment spell. Mortensen however, adds that UI payments also increase the indirect expected utility function, $U_t = V(t, b, U_t)$, where t is the length of benefits remaining, b is the flow of benefits received and U_t is the benefits received from the next layoff from the next employment position. This effect may offset the disincentive effect, by reducing the costs of future unemployment., hence encouraging the unemployed to seek employment more rapidly.

To answer which affect prevails we have to consult the empirical literature. If the disincentive effect dominates we should expect to see an increase in the duration of unemployment, but if the indirect utility story prevails then we should see a reduction in the duration of unemployment. Empirical work investigating the affect UI payments and UI duration has not to date reached a consensus.² An early survey of the empirical literature focussing on how the generosity of UI payments affected UI duration by Lancaster and Nickell (1980) concluded strongly that a positive effect was a 'firmly established parameter'. Work by for example Narendranathan et al (1985), Carling et al. (1996), concurs with this statement. A further survey by Layard et al. (1991) found that the elasticity of unemployment duration with respect to benefit payment ranged from

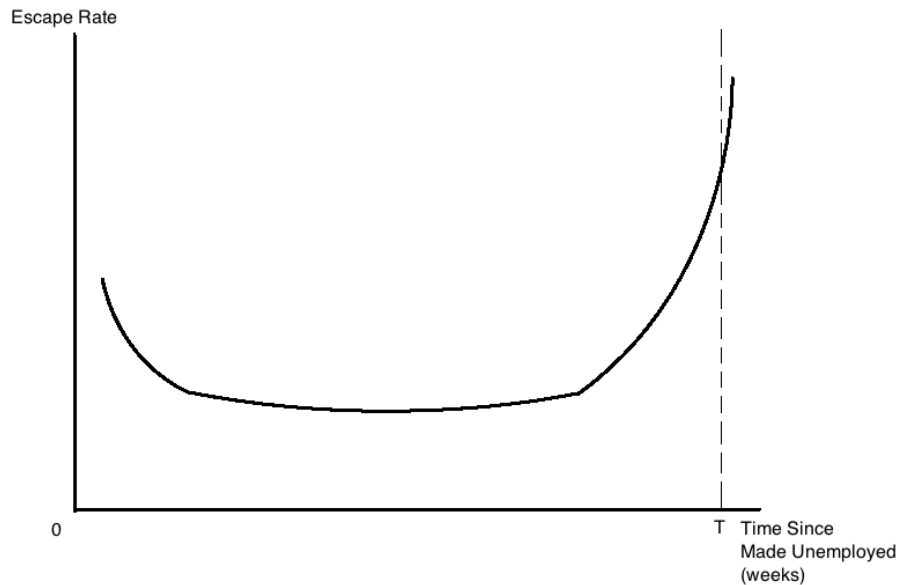
² Empirical studies were found with direction from Holmlund (1997)

0.2- 0.9. (Holmlund, 1997:3) A more recent investigation by Meyer (Quasi) utilizing the different periodic increases in UI benefits as a natural experiment, finds that unambiguously UI payment increases the duration of unemployment for both the temporary and permanently unemployed. Woodbury and Spiegelman (1987) seeking to determine whether UI is more precisely benign or distortionary, conducted an interesting experiment offering one off payments to unemployed workers who found a new job in one in Illinois, to the employer who hired the unemployed worker in another group, they also observed a control with neither party receiving a one off payment to compare their results. The study found a strong result, with a larger proportion of those in the claimant benefit group taking advantage of the incentive, with a lower rate of unemployment for this group at every stage of the experiment. This they account for by potential benefits increasing the intensity of search, hence the search theory dominates. However the result remains tentative for there was no difference found between the accepted wages of the claimant group and the control group. One would have believed that if the bonus was increasing the incentive to search more efficiently, then higher wages would have been accepted, indicating perhaps an increase in the efficiency of matches, rather than just an increase in the rate of finding a match. Nevertheless the incentive was not distortionary either thus the net benefit is questionable. (528) It should be acknowledged that a number of studies such as Pedersen and Westergaard Nielsen (1993) have been unable to find any significant relationship at all.³

An additional factor emerges when one views UI programs across the world. In the vast majority of countries UI benefits are only available for a finite period of time., for example in the US UI is limited to 26 weeks in most states. What are the implications on the analysis of limiting the access to the UI benefits and do the effects remain constant through time? Empirical work by Card, Chetty and Webber (2007), Lalive

³Katz and Meyer (1990) have ascribed the lack of results to the offsetting impact of the entitlement effect which shall be explained fully below.

(2007), Carling et al. (1996), Nickell (1997) and Meyer (1990) has found that the hazard rate is not constant across an unemployment spell with finite UI compensation, but takes the shape of figure 1:



Where time T refers to the exhaustion point.

Meyer finds that in a UI program which lasted 54 weeks, initially between 54 and 41 weeks until expiration the hazard rate is 32 percent, this is ascribed to a high number of recalls. Through 41 weeks to 6 weeks until exhaustion the hazard rate dips and plateaus, but there is a sharp rise with under 6 weeks to go the exhaustion rate increases to 67 percent, before reaching 97 percent with one week to go. With such movement in the escape rate one would suppose that there must be underlying changing incentives.

What theoretical explanations have been offered? Mortensen (1977) postulates that UI payments do not have a constant affect but that the balance of the two affects, disincentive and indirect utility, changes through time. To analyse the affects it is necessary to disaggregate the population into three groups, the newly unemployed, unemployed who are approaching exhaustion of their UI payments and the ineligible.

One course of explanation refers to the implications of a varying reservation wage on the duration of unemployment, another on the changing intensity of search that can be seen in the shape of the hazard function. I shall refer to both.

The first group I shall consider is the newly unemployed. For those who have recently been fired and are according to other constraints imposed⁴, are eligible for UI compensation, the normal search analysis prevails as referred to above as if UI coverage does not terminate, UI facilitates search, leisure or a combination of both. In this case the indirect expected utility is not very large, for the present value of the stream of the income from the current UI is large, for the coverage lasts a relatively long time. Thus Mortensen (1977) and Van den Berg (1990) have shown that if b increases, the marginal return from search decreases and the reservation wage increases. Thus, the disincentive effect dominates, resulting in a reduction of the escape rate for the newly unemployed workers.

The second group, the exhaustees, does not experience the same affect. It is shown that as a recipient approaches expiration of eligibility for the UI program, their reservation wage actually decreases. Reasoning by Mortensen (1977) attributes this to the increase of direct cost due to approaching termination of UI payments (510). Logically, in the knowledge that in the not too distant future an individual will receive no income, they would reduce your reservation wage and/or suddenly increase their intensity of search, in order to maintain a flow of income. Danforth (1978) alternatively suggests that the motivating factor is the decumulation of savings and assets through time is what incites individuals to reduce their requirements of employment.⁵ Through either mechanism the escape increases as termination approaches. Thus it appears 'UI payments have an adverse incentive effect on the short-term unemployed but a positive

⁴ In the US for example, in most cases, individuals have to have been in their last place of employment for a minimum period and have had a cooling off period since dismissal in order to be eligible.

⁵ Kiefer and Neuman (1979) have modelled how through time reservation wage decreases when UI benefits are dispersed for a finite period.

incentive effect on the long-term unemployed' (Burdett, 1979). Feldstein (2005) ascribes this spike as indicative of the distortionary affects of UI payments.

The final group to consider are unemployed but ineligible⁶. If UI payments are introduced or as many studies investigate, increase in size, then it creates the 'entitlement effect'. The entitlement effect refers to the work by Burdett (1979) and Hamermesh (1980). Intuitively it follows that the increase in UI increases the indirect utility of employment due to the decrease of being laid off in the future. This increases the incentive of the worker to enter into a spell of employment with increased haste. In essence, in order to make themselves eligible for the increased UI payments they have to become employed, and then if they get laid off in the future they will benefit. An ineligible worker will decrease their reservation wage and increase their intensity of search in order to find employment more readily, (Barron, McAfee and Speaker (1986)). Some have asserted that this same logic can be further used to also explain the action of the exhaustees whom very soon face ineligibility. The entitlement effect it should be noted can have broader affects for the economy by increasing the labour force. The possible reduction in the reservation wages of nonparticipants due to the decreased risk of employment makes it optimal for a greater number to re-enter the labour pool, in search for employment to take advantage of the increase indirect utility. Thus this should also increase the escape rate further. The social benefits of a larger participation rate are well known.

The dynamic theory the escape rate postulated above have yielded empirically mixed results. Concerning the reservation wage, both studies by Feldstein and Porterba (1984) as well as Harkman et al (1997) established a positive significant relationship. The

⁶ An individuals eligibility varies across jurisdictions, nevertheless common reasons for ineligible status are new entrants to the labour market, quitting last employed position, not being employed in your last position for a specified minimum period as well as exhausting ones benefit period so that they are no longer eligible; in the US for example this was until the recent extension, 26 weeks.

work concerning search intensity such as Jones (1989) and Harkman et al (1997) have not yielded any conclusions; results range in direction of effect and also detection of any effect at all. Empirical work on the entitlement affect has gained some traction. Recently, Hamermesh (2007) questioned whether the participation enhancing aspect of UI outweighs the negative disincentive affect. Using data of a sample of married women from Sweden in 1971, he finds that an increase in UI benefits has a positive and significant entitlement effect; women enter into the labour force that otherwise would have remained nonparticipants.

In conclusion, investigation into the effect of UI benefits on unemployment duration has produced a broad spectrum of work. Search theory has been a key investigative path many academics have used to frame the question. Proponents of search theory justify UI payments for its ability to reduce the marginal cost of search and hence resulting in more efficient labour market matches, whereas opponents cite the disincentive affects of UI payments subsidizing leisure as a reason to reform current programs. A key finding in the literature is the non- uniformity of the hazard rate. This suggests that the affect on the worker depends on how much longer they are eligible for UI payments affecting both their effort in search and reservation wage. The spike at the time of exhaustion has crucial policy implications, particularly in times of recession as we are currently experiencing.

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