

Ups and Downs of Career Paths

Jean Roch Donsimoni & Klaus Wälde
www.macro.economics.uni-mainz.de

1 Background

There are many reasons why understanding the determinants of labour supply is important. Reasons include how to design tax schedules or how to formulate labour market policies such as welfare programmes and social insurances. The current view on labour supply dates back to the 1970s, when the life-cycle model of labour supply was first developed and replaced the earlier static view of labour supply. The life-cycle approach has introduced a saving and borrowing decision as the central mechanism to introduce dynamics into the standard static model of labour supply. While great advances have been made in the field due to this approach, it maintains the assumption of intertemporal separability of leisure and, more importantly, the intertemporal independence of “feeling tired”. That is, the consumption-leisure choice in any period is always a static one. The introduction of savings allows for the price of time at one age to differ from the price of time at another age, unless the time preference rate exactly equals the rate of interest on saving and borrowing. Yet, the introduction of savings is not necessarily the only way to create dynamic consumption and hours worked profiles in the life-cycle model. Indeed, relaxing the assumption of intertemporal separability of leisure naturally changes the price of time at different ages, whether this depends on past or anticipated hours worked. This approach is particularly relevant to understanding life-cycle behaviour of younger workers and workers who face significant borrowing constraints. Understanding the accumulation of hours worked as fatigue (the feeling of “being tired”), thus increases the realism and potency of labour supply theory. This theme is central to Part I on labour supply theory (see below), and helps us understand how fatigue might influence the career paths of individuals as hours worked accumulate over time.

Going one step further in Part II, one may wonder what the effect of “health” in general is on economic decisions, and not just fatigue. Institutions such as the OECD and the UN regularly publish reports on the importance of health and stress at the economy-level and argue that an improvement in healthcare systems could potentially save millions, sometimes billions, of dollars per year. Economists have long suspected that stress in particular can have significant costs attached to it, and have been attempting to model its development over time and its influence on real economic variables. More generally, the field of health economics looks at the influence of various aspects of health on economic decisions; the earliest contribution to the field conducted analysis of a “health stock”, akin to a capital stock, which affects utility and determines the “demand” for good health. More recent developments have been interested in modelling emotions and mental health into economics as a natural next step in understanding the role of “health” in economic modelling.

Modelling emotions and mental states, however, suggests that it would be useful to understand their psychological foundations. To this end, when looking at the effects of stress and fatigue in the workplace, the natural concept that arises in psychology is that of burnout. This is the objective of Part III. The phenomenon of burnout has been known for over forty years in

the psychology literature, with much research being conducted to understand its organisational and social determinants, and to find ways to measure it accurately. However, some aspects of it still elude psychologists, such as its development over time and the role of individuals' decisions in mitigating or fostering its arrival. Some studies have tried to study its evolution over time, surveying the same individuals over periods of several months, but these studies often pursued the traditional view of burnout as an organisational and social phenomenon, rather than one that could be influenced by the individuals concerned. To fill this gap in the literature, we can model burnout as a state and study its impact on optimal behaviour, and understand how it affects individuals' working decision over time, using tools from mathematics well-known to economists: dynamic programming and phase diagram analysis. This analysis will in turn provide a framework with which we can study the movements of workers as they fluctuate between "ups" (periods with high hours worked) and "downs" (periods where hours worked decrease substantially) throughout their career, and what strategies they can employ to avoid those "downs", a subject of particular importance in modern economies where wages are no longer the only determinants of labour supply and workers increasingly value intellectually satisfying and challenging jobs.

2 Topics

2.1 Part 1: Labour supply theory

1. The life-cycle model of labour supply (Mincer, 1962; Becker, 1965)
2. The introduction of savings (Heckman, 1974; Heckman and MaCurdy, 1980; 1982)
3. A new approach to dynamics in labour supply (Donsimoni, 2016)
4. Male labour supply with savings and human capital (Shaw, 1989; Imai and Keane, 2004)
5. Female labour supply with human capital and participation margins (Altug and Miller, 1998; Attanasio *et al*, 2008)

2.2 Part 2: Health economics

6. Institutional stance and reports on health and work (OECD, 2012; 2014)
7. Analysing the cost of stress: data and theory (Buddelmeyer *et al*, 2015; Hamermesh and Lee, 2007)
8. Modelling health in economics (Grossman, 1972)
9. Emotions and mental health in economics (Caplin and Leahy, 2001; Krieger and Wälde, 2016)

2.3 Part 3: Insights from psychology

10. Burnout: theory and measurements (Maslach, 1976; Maslach and Jackson, 1984)
11. Burnout dynamics over time (Lee and Ashforth, 1993; Dunford *et al*, 2012)
12. Analysing the effects of burnout on labour supply (Donsimoni and Wälde, 2016)

References

- Altug, S., and R. Miller (1998): “The Effect of Work Experience on Female Wages and Labour Supply,” *Review of Economic Studies*, 65(1), 45–85.
- Attanasio, O., H. Low, and V. Sanchez-Marcos (2008): “Explaining Changes in Female Labor Supply in a Life-Cycle Model,” *American Economic Review*, 98(4), 1517–52.
- Becker, G. (1965): “A Theory of the Allocation of Time,” *Economic Journal*, 75, 493–517.
- Buddelmeyer, H., D. Hamermesh, and J. Lee (2015): “The Stress Cost of Children,” NBER Working Paper Series.
- Caplin, A., and J. Leahy (2001): “Psychological Expected Utility Theory and Anticipatory Feelings,” *Quarterly Journal of Economics*, 116(1), 55–79.
- Donsimoni, J. (2016): “Accumulated Hours Worked and Labour Supply,” mimeo Gutenberg University Mainz.
- Donsimoni, J., and K. Wälde (2016): “Labour Supply under Burnout Risk,” mimeo Gutenberg University Mainz.
- Dunford, B., A. Shipp, R. Boss, I. Angermeier, and A. Boss (2012): “Is burnout static or dynamic? A career transition perspective of employee burnout trajectories,” *Journal of Applied Psychology*, 97(3), 637–50.
- Grossman, M. (1972): “On the Concept of Health Capital and the Demand for Health,” *Journal of Political Economy*, 80(2), 223–55.
- Hamermesh, D., and J. Lee (2007): “Stressed out on Four Continents: Time Crunch or Yuppie Kvetch,” *Review of Economics and Statistics*, 89(2), 374–83.
- Heckman, J. (1974): “Life Cycle Consumption and Labor Supply: An Explanation of the relationship between Income and Consumption Over the Life Cycle,” *American Economic Review*, 64(1), 188–94.
- Heckman, J., and T. MaCurdy (1980): “A Life Cycle Model of Female Labour Supply,” *Review of Economic Studies*, 47(1), 47–74.
- (1982): “Corrigendum on A Life Cycle Model of Female Labour Supply,” *Review of Economic Studies*, 49(4), 659–60.
- Imai, S., and M. Keane (2004): “Intertemporal Labor Supply and Human Capital Accumulation,” *International Economic Review*, 45(2), 601–41.
- Krieger, D., and K. Wälde (2016): “A Theory of Mental Health,” mimeo Gutenberg University Mainz.
- Lee, R., and B. Ashforth (1993): “A Longitudinal Study of Burnout among Supervisors and Managers: Comparisons between the Leiter and Maslach (1988) and Golembiewski et al, (1986) Models,” *Organizational Behavior and Human Decision Processes*, 54, 369–98.
- Maslach, C. (1976): “Burn-Out: the loss of human caring,” *Human Behavior*, 5, 16–22.
- Maslach, C., and S. Jackson (1984): “Burnout in organizational settings,” *Applied Social Psychology Annual*, 5, 133–53.

- Mincer, J. (1962): “Labor Force Participation of Married Women: A Study of Labor Supply,” In *Aspects of Labor Economics*. Princeton: Princeton University Press, pp. 63–106.
- OECD (2012): “Sick on the Job? Myths and Realities about Mental Health and Work, Mental Health and Work,” Paris: OECD Publishing.
- (2014): “Making Mental Health Count: The Social and Economic Costs of Neglecting Mental Health Care,” *OECD Health Policy Studies*. Paris: OECD Publishing.
- Shaw, K. (1989): “Life-Cycle Labor Supply with Human Capital Accumulation,” *International Economic Review*, 30(2), 431–56.