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Earnings and labour market volatility in Britain, with a transatlantic comparison

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HIGHLIGHTS

- New evidence about earnings instability for Britain
- Findings for men and women, employed workers and all workers
- Between 1992 and 2008, earnings volatility was constant for both sexes
- Between 192 and 2008, labour market volatility declined for both sexes
- This decline is related to changes in employment attachment
- British trends differ from their US counterparts

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ABSTRACT

We contribute new evidence about earnings and labour market volatility in Britain over the period 1992–2008, for women as well as men, and provide transatlantic comparisons (Most research about volatility refers to earnings volatility for US men.). Earnings volatility declined slightly for both men and women over the period but the changes are not statistically significant. When we look at labour market volatility, i.e. also including individuals with zero earnings in the calculations, there is a statistically significant decline in volatility for both women and men, with the fall greater for men. Using variance decompositions, we demonstrate that the fall in labour market volatility is largely accounted for by changes in employment attachment rates. We show that volatility trends in Britain, and what contributes to them, differ from their US counterparts in several respects.

1. Introduction

There is a substantial literature for the USA analysing trends in earnings instability using a range of measures and data sets, with a critical issue being whether instability has been increasing in parallel with the well-known rise in cross-sectional earnings inequality. The balance of evidence suggests that, at least for men, earnings instability grew over the 1970s through to the 1990s but levelled off thereafter — which is in contrast to the emphasis on ever-growing instability (and consequential greater income risk) that is emphasized in popular accounts such as those by Gosselin (2008) and Hacker (2008). Earnings inequality in Britain has also increased over the last three decades, for both men and women. For example, the ratio of the 90th percentile to the 10th percentile increased during the 1980s (by 2.4 and 1.9 percentage points per year for full-time men and women respectively) and the 1990s (1.1 and 1.0 percentage points per year), and continued to increase during the 2000s albeit at a decreasing rate (0.7 and 0.3 percentage points per year): see Machin (2011: Table 11.1). However, there is little evidence about what happened to earnings instability in Britain, especially in the 1990s and 2000s. This paper provides a transatlantic perspective on

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earnings and labour market instability and its trends, with new evidence for Britain for the period 1992–2008.

There are several reasons for interest in longitudinal earnings instability (See the reviews by inter alia Gottschalk and Moffitt 2009 and Moffitt and Gottschalk, 2012.). First, information about the longitudinal earnings processes contributes to understanding of the causes of the rise in inequality in the cross-section (more on this in Section 2). Second, the information helps understanding of other aspects of household behaviour. Consumption smoothing is greater in the face of transitory income shocks compared to permanent shocks (Friedman, 1957; Attanasio and Weber, 2010). Third, there is much interest in earnings and income stability from a normative perspective. An increase in instability increases longitudinal mobility (re-ranking in the earnings distribution) and also equalizes lifetime incomes, aspects that are often viewed as welfare-improving (Shorrocks, 1978; Gottschalk and Spolaore, 2002). Fourth, much of the research interest in earnings instability is undoubtedly because of its connection with income risk. This is emphasized in the books by Hacker (2008) and Gosselin (2008) though, as many economists have emphasised, assessments of the welfare consequences of greater instability also need to take into account the extent to which earnings changes reflect voluntary decisions by workers and their families and the extent to which they are insurable in principle and anticipated and insured against in practice. See the caveats expressed by, for example, Celik et al. (2012), Dahl et al. (2011), Dynan et al. (2012), Moffitt and Gottschalk (2012), and Shin and Solon (2011). For structural models aiming to identify income risk, see Blundell et al. (2008) and Cunha et al. (2005).

The substantial body of research about earnings instability about the USA does not exist in the same form for most other countries, and yet cross-national comparisons help benchmark estimates of levels and trends for each country, and raise questions about similarities and differences in labour markets and other institutions. Most of the US research on earnings volatility has been based on the Panel Study of Income Dynamics and matched data from the Current Population Survey (with recent research also drawing on administrative record data). We argue below that the survey data we use, from the British Household Panel Survey, are of high quality and compare well with US survey data. They are therefore a good source for examining volatility for the first time for Britain and also for undertaking transatlantic comparisons.

Earnings instability has been characterized in three ways in the literature — using transitory variances estimated from parametric models of earnings dynamics or their non-parametric counterparts, or using measures of 'volatility' that summarize the dispersion across individuals of short-run earnings changes (see below for more discussion). In this paper, our evidence for Britain about levels and trends in earnings instability is based on measures of volatility. There are no previous estimates that we are aware of; so our first contribution is this new evidence.

We use multiple measures in order to check the robustness of our estimates of trends. Our headline results are based on the standard deviation (or variance) of two-year earnings changes. In addition to the methodological advantages of this measure (discussed in the next Section), use of this volatility measure leads to the further contributions of our paper.

Second, we examine not only earnings volatility among workers with positive earnings in two consecutive years (as in most previous studies), but also the volatility among all workers, including those gaining or losing a job or remaining without a job. This simply cannot be done if one follows the 'transitory variances' approach to measuring instability literature (see below) because it uses log(earnings) measures which are undefined if earnings are zero. Our research follows Ziliak et al. (2011) who in turn used the volatility measure proposed by Dynan et al. (2012) that allows one to 'include the zeros'. For brevity, we use the term 'earnings volatility' to refer to volatility among workers with positive earnings at the two time points, and we use the term 'labour market volatility' to refer to volatility among all potential workers, i.e. including individuals with zero earnings as well as those with positive earnings.

Third, and related, we provide estimates about volatility trends for women as well as men. This is appropriate given the secular increase in women's employment rates over the last few decades and the growing importance of women's earnings to total household income. Like most US studies of earnings instability of all three types, those using volatility measures have either focused on men only (e.g. Cameron and Tracy, 1988; Celik et al., 2012; Juhn and McCue, 2012; Shin and Solon, 2011; Shin, 2012) or examined household heads (mostly men) and their spouses (Dahl et al., 2011; Dynan et al., 2012). Indeed, Dynan et al. (2012) restrict their attention to household heads belonging to households that do not experience a change in head or residential mobility (they were primarily interested in the volatility of family income rather than of earnings). Only Ziliak et al. (2011) study volatility for US men and women regardless of headship status in a systematic manner. Some comparisons of volatility in the USA and EU countries are presented in an OECD report (2011) and its background working paper (Venn, 2011), but the focus is on a single volatility measure and estimates for men and women are not provided separately.

We show that earnings volatility in Britain declined slightly for both men and women between 1992 and 2008 but the changes are not statistically significant. When we widen the scope to look at labour market volatility, we find that there is a statistically significant decline over the period for both women and men, with the fall greater for men. Using variance decompositions, we demonstrate that the main factor accounting for the downward trend in labour market volatility is a secular decline in the proportions of workers moving into and out of employment combined with greater employment attachment, and suggest a business cycle explanation for this. The flat trend in earnings volatility is not attributable to factors related to job-changing that offset each other, or to changes in part- and full-time working, or secular improvements in educational qualifications. We show that these findings about British trends differ from those for the USA in several respects. In particular there has been no fall in labour market volatility in the USA as there has been in Britain and trends in employment attachment rates are quite different.

2. Methods for measurement of earnings instability

Earnings instability has long been associated with the transitory variance of earnings, and estimated using both parametric model-based and non-model-based methods. There is a long tradition of fitting parametric models of earnings dynamics, from the pioneering research by Lillard and Willis (1978) onwards. Applications of this variance component approach include Abowd and Card (1989), Baker (1997), Baker and Solon (2003), Haider (2001), Guvenen (2009), Hause (1980), Lillard and Willis (1978), Lillard and Weiss (1979), MaCurdy (1982), and Moffitt and Gottschalk (2011, 2012). All this research uses US or Canadian data. Applications to British men's earnings data are Daly and Valletta (2008), Dickens (2000), Kalwij and Alessie (2007), and Ramos (2003). An excellent review of variance component modelling and recent extensions is provided by Meghir and Pistaferri (2011).

To fix ideas, suppose that the dynamics of earnings can be described using the canonical random effects model:

$$y_{it} = u_i + v_{it}. \tag{1}$$

The logarithm of earnings for person i in year t, y_{it}, is equal to a fixed 'permanent' random individual-specific component, u_i, with mean zero and constant variance σ_u^2 (common to all individuals), plus a year-specific idiosyncratic random component with mean zero and variance σ_{vt}^2 (common to all individuals) that is uncorrelated with u_i. Thus, total inequality as measured by variance of log income, σ_t^2, is equal to the sum of the variance of 'permanent' individual differences plus the