

DISCUSSION PAPER SERIES

IZA DP No. 10768

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Market Pathways: Bridge or Trap?**

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# Contingent Employment and Labour Market Pathways: Bridge or Trap?

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## ABSTRACT

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# Contingent Employment and Labour Market Pathways: Bridge or Trap?\*

The debate over whether contingent (and typically more precarious) employment acts as a bridge to permanent employment, or as a trap, has tended to focus on transitions rather than longer-run pathways. This approach cannot accurately identify indirect pathways from contingent to permanent employment, and nor can it identify 'trap' pathways involving short spells in other states. It also fails to distinguish between those experiencing contingent employment as a 'blip' and those with longer spells. This article employs a different approach involving sequence analysis. Exploiting longitudinal data for Australian, evidence for the co-existence of pathways that correspond to 'bridge' and 'trap' characterisations of contingent employment is found. Further, in the case of casual employment these two types of labour market pathways are roughly equally prevalent, although for some groups – in particular women, those with low educational attainment, and those with a disability – 'traps' are more likely than 'bridges'.

**JEL Classification:** J41, C38

**Keywords:** casual employment, contingent employment, temporary employment, pathways, segmented labour markets, sequence analysis

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## **Introduction**

Recent years have seen increased interest among researchers and policy-makers alike in the changing nature of work and, in particular, the role played by temporary, casual and other forms of contingent employment. This growing interest appears to have been driven by two related concerns. First, there is a widely held view that temporary and casual jobs are accounting for an ever growing share of total employment, usually argued to reflect employer responses to rising global economic competition and a loosening of regulations governing employment security in many countries (e.g., Di Prete et al. 2006; Kalleberg 2009; Prosser 2016). Second, reflecting both their inherently insecure nature and the lower earnings and lesser access to other employment benefits that is often associated with them, temporary and casual jobs are typically equated with poor-quality jobs (e.g., Kalleberg et al., 2000; McGovern et al., 2004; Nienhüser and Matiaske, 2006; OECD, 2014).

In fact, the available evidence suggests that trends in the share of temporary employment are highly variable across countries, and that when averaged across OECD countries, the rise, at least since 1980, has been relatively modest – from just over 9% of total dependent employment in the early 1980s to only 11.4% in 2015.<sup>1</sup> Nevertheless, in many OECD countries the temporary employment share is very high – notably, Poland (28.0%), Spain (25.1%), Korea (22.3%), Portugal (22.0%), and the Netherlands (20.2%). Further, the focus in the OECD data on jobs with a predetermined end date (i.e., a fixed-term contract) will likely mean that many forms of casual employment are not counted. This makes a big difference in countries like Australia where casual jobs, which can be thought of as particularly precarious given they can be terminated at any time without notice, are the most pervasive type of contingent employment.

But as others have pointed out (e.g., Booth et al., 2002; Gash, 2008; Korpi and Levin, 2001), how concerned we should be about the incidence of temporary and casual employment

depends on the extent to which such employment provides a bridge to more secure, ongoing employment in the future. On the one hand, if contingent jobs typically do not lead to more secure, permanent jobs (i.e., if the dominant labour market pathway for workers in contingent employment resembles a ‘trap’), then changes in employment regulations or other interventions may lead to improvements in social welfare. On the other hand, if contingent employment typically provides a bridge to permanent employment, then arguments for institutional change or other interventions are more difficult to motivate.

Existing evidence on this issue is mixed, with some research suggesting that temporary jobs (and other forms of contingent employment) often serve as entry ports into more permanent jobs (e.g., Booth et al., 2002; Buddelmeyer and Wooden, 2011; de Graaf-Zijl et al., 2011; Gash, 2008), while others conclude that the rate of transition between contingent and permanent jobs is relatively low (e.g., Amuedo-Dorantes, 2000; Güell and Petrongolo, 2007; Watson, 2013), that the risk of experiencing recurrent unemployment is much higher among temporary job holders (e.g., Mooi-Reci and Dekker, 2015), and that in some situations, individuals might be better off waiting for a better, more secure job than accepting the first contingent employment opportunity (e.g., Barbieri and Scherer, 2009; Yu 2012).

A key feature of this literature is its focus on single transitions between employment types or labour market states. This is restrictive given the complexity of employment patterns experienced by many, and in particular by many of those in contingent employment. The overriding question – bridge or trap – is, for many, not about single transitions, but about more complex labour market pathways over extended periods of time. The analysis reported on here thus differs from most previous research by exploiting longitudinal data, tracking a large representative sample of individuals in Australia over a 14-year window, to present a more holistic analysis of labour market pathways than is possible by focussing on single transitions. Further, the relative incidence of ‘bridge’ and ‘trap’ pathways in Australia is

quantified. The study complements an earlier study of Canadian data, which takes a similar pathways approach, but limited to a five-year window and with a sample restricted to those initially in temporary employment (Fuller and Stecy-Hildebrandt, 2015).

## **Theory**

There are several complementary explanations for why different forms of employment contract – at its most simple, permanent and non-permanent employment – might coexist in the same labour market. One is that the coexistence of permanent and non-permanent employment relationships reflects differences between jobs in requirements for general human capital relative to job or firm-specific human capital (Booth et al., 2002). Another is that worker preferences over job characteristics, such as job security and flexibility, may vary, both between workers and within workers over time as their family and other circumstances change (Guest, 2004; Hakim, 2006; Morris and Vekker, 2001). On the demand side, firms may use non-permanent contracts to screen workers (and vice versa) before offering them permanent contracts (Faccini, 2014; Houseman and Polivka, 1999), to enable flexibility when faced with uncertain or volatile product demand (Abraham, 1988; Nickell, 1987; Rebitzer and Taylor, 1991), or to avoid potentially disadvantageous aspects of employment law more generally (Prosser, 2016).

Differences in human capital requirements, information asymmetry, demand volatility, and hiring and firing costs can all generate segmentation in labour markets, with one or more core sectors characterised by high quality and secure jobs (e.g., permanent contracts, high wages, training, career prospects) and one or more peripheral sectors characterised by low quality and insecure jobs (e.g., casual or temporary contracts, low wages, limited access to training, limited prospects for career progression) (see Doeringer and Piore, 1971; Piore, 1971; Rebitzer and Taylor, 1991). In such labour markets, mobility between the core and

periphery is limited; for example, because secondary sector workers are unable to acquire sufficient human capital to move into the primary sector, or because secondary sector jobs may be scarring if employers treat them as a signal of low productivity (Boyce et al., 2007). In contrast, greater mobility between sectors would be expected if non-permanent employment is used as a screening device.

Even in the absence of other social forces, these arguments imply that not all individuals are equally likely to find themselves in non-permanent employment and not all individuals in non-permanent employment will face the same barriers to subsequently accessing permanent employment. For example, the use of contingent employment contracts as screening devices is likely to be skewed towards younger, inexperienced workers, who may themselves be more willing to accept such jobs as they acquire information about suitable matches (Booth et al, 2002; Faccini, 2014). Conversely, scarring may be more likely for workers who employers might typically expect to be in permanent employment; e.g., prime-age men (Mooi-Reci and Wooden, forthcoming).

By describing the full range of long-run labour market pathways actually observed in the Australian labour market, by quantifying the relative prevalence of ‘bridge’ versus ‘trap’ pathways, and by examining the characteristics of workers who follow the different types of pathways, this paper contributes to our understanding of the degree to which labour markets are segmented between permanent and contingent employment, and for whom.

## **Data**

### *Sample*

The data used come from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, a longitudinal study that has been following members of a nationally representative sample of Australian households since 2001 (see Watson and Wooden, 2012).

The initial sample of respondents comprised 13,969 individuals, aged 15 years or older, from 7682 households. A population refreshment sample was introduced in wave 11 (2011), which added a further 2153 responding households. Sample sizes vary each survey wave reflecting deaths, non-response and changes in household composition (interviews are sought with all persons aged 15 years or older who are co-residing with an original sample member).

Consistently high response rates mean that, even without the refreshment sample, the sample size in wave 14 was very similar to that in wave 1 (13,633 respondents).

For this analysis, data from waves 1 to 14 (2001 to 2014) are used. Two restrictions are made. First, because our interest is in long-run labour market pathways, only individuals who are observed for at least ten waves are retained. (This minimum wave requirement is varied in a sensitivity analysis.) Second, in order to focus on labour market pathways among working-age individuals (broadly defined), only those who are aged 59 years or less in the first wave in which they are observed are retained. The maximum age at which an individual can be observed in the sample is therefore 72 years. This provides an unbalanced sample comprising 118,920 observations from 8,702 individuals.

The HILDA Survey collects extensive information about each individual's labour market state at the time of interview and, for those in work, about the jobs held at the time of each annual interview, including the nature of the employment contract. The survey also collects detailed information on individual and household socio-economic circumstances and characteristics. Table 1 presents sample means for the subset of variables used in this analysis. Selection of variables reflects factors cited by Kalleberg (2009) as being important in vulnerability to precarious work and frequency of use in existing studies of contingent employment using HILDA Survey data. Given the sample restrictions, the characteristics of the analysis sample diverge to some extent from that of the full, pooled HILDA Survey sample for 15-72 year olds. In particular, the analysis sample is more concentrated in the 25-

59 years age range because new survey members, who are predominantly young, can only enter prior to wave 5 (given the requirement for them to be observed for at least ten waves), and because we restrict to those aged 59 years and under in the first observed wave. Further, as the analysis sample ages over the 10-14 year period, the proportion of the sample in temporary and casual employment also falls, and the proportions self-employed and not working rise, relative to those in the corresponding waves for the full HILDA sample. This is to be expected in a longitudinal sample if there is a ‘bridge’ phenomenon for at least some temporary or casual workers, although it may also in part reflect non-random attrition (see below). Averaged over the full 14 waves, however, differences in sample proportions in labour market state and other variables appear small.<sup>2</sup>

#### *Classifying labour market state and employment type*

At each observed wave, respondents are classified into one of six mutually exclusive and exhaustive labour market categories. The sample is first divided into two groups based on their labour force status: the employed and the non-employed (pooling the unemployed and the inactive). All respondents who were employed at any time in the week prior to interview are asked whether, in their main job, they worked for an employer for wages or salary (employees), in their own business (the self-employed), or without pay in a family business. Employees are then asked to choose one among four categories that best describes their current contract of employment in their main job. The options are: (i) employed on a permanent or ongoing basis; (ii) employed on a fixed-term contract; (iii) employed on a casual basis; or (iv) employed under some other arrangement (for example, persons remunerated on a commission basis). The answers to (i)-(iii) are used to define permanent, fixed-term and casual employment respectively. The self-employed, those working unpaid in a family business, and employees in category (iv) above, are aggregated into a catch-all

‘other employed’ category. Those employed on a permanent contract are then subdivided into those employed full-time (35 hours or more per week) and those employed part-time. To keep the number of states manageable a similar distinction is not made for the remaining employed categories, although most of those in casual jobs work fewer than full-time hours.

To account for potentially non-random attrition from the survey a non-response state is also created. Waves in which an individual is out of scope or otherwise cannot respond are treated as missing observations. In practice this means there is some variation in the length of the labour market pathways analysed, although all are at least 10 years in duration and most are 14 years in duration.

Summary statistics describing the distribution of the working-age population by labour market state for the period covered by the data are provided in Table 2. On average, 14% of the Australian working-age population (or 22.7% of all employees) were employed on a casual basis, and a further 5.7% (or 9.3% of employees) were employed on a fixed-term contract. The incidence of casual employment was particularly pronounced among young people (31% of all persons aged under 25 years) and was more common among women than men (16% vs. 12%). By international standards, the proportions in temporary and casual employment are high. According to the OECD statistics website (<http://stats.oecd.org>), for example, permanent employment in OECD countries has, over this same period (2001 to 2014), averaged around 90 to 91% among employees aged 25 to 54. The most comparable estimate from the HILDA Survey is just 75%. The only Western European nation with a lower incidence of permanent employment is Spain.

### *Transitions between labour market states*

Table 3 shows the average year-to-year transitions between labour market states. In most cases the majority of those in a particular state at time  $t$  are in the same state at time  $t+1$  (the

exceptions are fixed-term employment and non-response). Looking at the off-diagonals, however, the five most common transitions (marked in bold) are, in descending order: from not employed to casual; from fixed-term to full-time permanent; from full-time permanent to fixed-term; from casual to not employed; and from casual to full-time permanent. Fixed-term employment is the most common entry point to full-time permanent employment. Casual employment is both the most common entry point to, and exit point from, non-employment, and the second most common entry point to full-time permanent employment. In short, and in line with a previous analysis of these data (Buddelmeyer and Wooden, 2011), transitions are observed that appear consistent with temporary and casual employment acting as a bridge into permanent employment, but also transitions in the other direction; transitions between contingent (particularly casual) employment and non-employment in both directions, and persistence in contingent employment. What such an analysis does not reveal, however, is whether the individuals making the initial transition from not employed to casual employment subsequently go on to permanent or other forms of employment (i.e., casual employment as a bridge), or remain casual or cycle between casual employment and non-employment (casual employment as a trap). Similarly, it is unclear whether those moving from fixed-term to full-time permanent employment remain in that state or churn back and forth between different forms of employment. To answer these questions a more holistic look at labour market pathways over a longer period is required.

## **A typology of labour market pathways**

### *Sequence analysis*

In common with the growing literature which applies sequence analysis to labour market data (e.g., Aassve et al., 2007; Brzinsky-Fay, 2007; Fuller and Stecy-Hildebrandt, 2015; McVicar and Anyadike-Danes, 2002), each individual's longitudinal record of labour market states is

treated as a string. It is these strings – sequences – that capture labour market pathways, and in what follows the sequence, rather than individual elements of sequences (i.e., observations for particular waves), is the unit of analysis. The most common sequence – followed by just 5.5% of the sample – is a labour market pathway consisting of 14 waves of full-time permanent employment.<sup>3</sup> But there are a myriad of pathways, and two thirds of sample members follow unique sequences; i.e., strings of labour market states that are followed by no one else in the sample. Many of these unique sequences are very similar to one another, with common ordering of labour market states but different durations in one or more of these states, or with labour market states varying in only a small number of waves. To make further progress in describing the labour market pathways followed by the sample, and ultimately to classify these labour market pathways in a way that can be used for further analysis, requires a method which first quantifies how similar different observed sequences are to one another and then groups similar sequences into ‘types’. Following the studies cited above optimal matching (OM) followed by cluster analysis is used for this purpose.

OM is an algorithmic approach to measuring the distance between two strings of categorical states (in our case labour market pathways) by asking the question: “How could we turn one string into another with the least possible cost?” This cost is a measure of the minimum combination of elementary operations (substitutions, insertions, or deletions of sequence elements) required to achieve such a transformation. Following recent convention, substitution costs are defined as inversely proportional to transition probabilities in the data and insertion/deletion (or indel) costs are specified high enough so that indels are never used in place of a single substitution but may be used to align similar but misaligned sequences or to align sequences of different lengths (see Brzinsky-Fay et al., 2006).<sup>4</sup> The resulting output from the OM analysis is a 6,426 by 6,425 matrix containing the distances between every pair of observed sequences in the data.<sup>5</sup>

### *Cluster analysis and classifying labour market pathways*

The distance matrix from the OM analysis forms the input for a cluster analysis of labour market pathways from which a typology is constructed. Again following the convention in the literature, Ward's hierarchical agglomerative method, which works from the bottom up by combining 'similar' sequences, proceeding until all the observations belong to the same group, is used. A typology based on a seven-cluster solution is derived. Seven clusters is the smallest number that differentiates between (groups separately) casual workers who, by and large, go on to full-time permanent employment and casual workers who remain in casual employment or churn in and out of casual employment. Further aggregating to six clusters merges the 'casual to full-time permanent' cluster with the 'full-time permanent to exit or churn' cluster, which obscures the differences between these pathway types. Stopping the agglomerative process earlier – selecting a higher number of clusters – retains a small fixed-term employment cluster (n=171) that would otherwise merge with the exit from full-time permanent and churn cluster.

Table 4 labels the clusters in the resulting typology and presents summary information on their labour market state composition. There are two clusters dominated by full-time permanent employment: one – the largest cluster – groups together those who are consistently in full-time permanent employment (Cluster 3), and the other groups together those exiting from full-time permanent employment (Cluster 1). Casual workers are found across all seven clusters but are particularly concentrated in two contrasting clusters: one that groups together casual workers who mainly go on to full-time permanent employment (Cluster 2) and one that groups together casual workers who remain persistently in casual employment or churn in and out of casual employment (Cluster 5). These two clusters are of similar size, each containing around 7.5% of the sample. Even once one considers those in other clusters who

pass through casual employment, these two types of pathway appear similarly prevalent. There are distinct clusters for pathways dominated by part-time permanent employment (Cluster 4) and by other employment (Cluster 7). Finally, there is a large, distinct cluster dominated by non-employment (Cluster 6). Because transitions between fixed-term and full-time permanent employment are relatively common (and therefore substitution costs are relatively low), there is no distinct fixed-term employment cluster at this level of aggregation. The highest density of fixed-term employment, however, is in cluster 1, most commonly combined with one or more spells in full-time permanent employment. A graphical representation of the clusters – sequence index plots – is provided in Figure 1.

*Cluster (pathway type) 1: exits from full-time permanent employment and churn* ( $n=1,132$ ). Almost all (96.6%) individuals in this cluster have at least one spell (of varying length) in full-time permanent employment. These are preceded or followed by spells in all five other labour market states, and often churning between other states, with not working being the next most prevalent state and the most common destination state in the latter waves. This is the cluster with the highest concentration of fixed-term employment, most commonly followed by and/or preceded by full-time permanent employment, but again tending towards non-employment in the latter waves. The modal sequence type is a single spell of full-time permanent employment followed by a single spell of non-employment.

*Cluster 2: casual to full-time permanent* ( $n=672$ ). This cluster is dominated by pathways from casual employment to permanent full-time employment, in some cases with a short intervening state in another type of employment or in non-employment, and by pathways from non-employment to permanent full-time employment via a spell in casual employment. This cluster, which accounts for 7.7% of the total sample, groups together individuals for whom casual employment acts as a bridge or stepping stone to permanent full-time employment. So there is evidence from a pathways perspective that is consistent with the

argument in the transitions literature that contingent jobs – in this case casual jobs – can serve as entry ports into more permanent jobs. However, and very different to the literature, such transitions are shown to be both direct and indirect, casual ‘bridge’ spells are often quite long, and the full-time permanent employment destination tends to persist until the point of right-censoring. Note that, for this cluster, real hourly wages grow by an average of 20% between the first and last observed wave in employment.

*Cluster 3: persistent full-time permanent (n=2,315).* The largest cluster groups together pathways that are dominated by persistent full-time permanent employment, which accounts for 80.5% of all the wave-individual observations in the cluster. The modal sequence is full-time permanent employment throughout. Casual, permanent part-time, other employment and non-employment are all virtually absent from this cluster. Fixed-term employment is there in proportion to the overall sample, typically in the form of a short spell followed directly by permanent full-time employment.

*Cluster 4: part-time permanent employment (n=704).* Pathways in this cluster are dominated by part-time permanent employment, which accounts for just over half the total wave-individual observations. There is a mix of long spells and shorter spells, with some pathways showing churn into and out of part-time permanent employment. Spells of part-time permanent employment often follow short spells in casual, full-time permanent employment and non-employment. There are also examples of short spells of casual employment acting as a bridge from non-employment to permanent part-time employment. The most common destination state following a spell in part-time employment here is non-employment (the modal sequence).

*Cluster 5: persistent casual and casual churn (n=651).* Labour market pathways in this cluster are dominated by casual employment, which accounts for over half the total wave-individual observations. Spells of casual employment tend to be relatively long or, where

shorter, recurring. All other labour market states can be found within the casual churn pathways, or following long spells of casual employment, but non-employment is most common. The modal sequence type is casual employment throughout. In other words this cluster, which accounts for 7.5% of the total sample, groups together individuals who are persistently casual or churning in and out of casual employment; i.e., it closely corresponds to the view of casual employment as a ‘trap’. In contrast to the transitions approach, however, the pathways approach helps to demonstrate the churn in and out of casual employment and other labour market states in this cluster. Note that, for this cluster, real hourly wages fall by an average of 5% between the first and last observed wave in employment.

*Cluster 6: not working (n=1,895).* The second largest cluster is dominated by not working – the modal sequence is non-employment throughout – with all other labour market states under-represented. The partial exception to this is casual employment, which occurs in just under half the pathways as, typically, a single short spell preceded and/or followed by non-employment. In simple transitions-focussed studies this would be indistinguishable from the transitions between casual employment and non-employment found in cluster 5, although they are found in very different pathways. In particular, it is difficult to think of these pathways as contingent employment traps, although casual employment is clearly not acting as a bridge to permanent employment here either. Not all labour market pathways containing contingent employment can be straightforwardly characterised as bridges or traps.

*Cluster 7: other employed (n=1,325).* The final cluster is dominated by other employment (predominantly self-employment). In most cases spells in other employment are long – the modal sequence type is other employment throughout – but they are often preceded by spells in other labour market states, most commonly permanent full-time employment. There are very few transitions from other employment into states other than non-employment or non-

response. In Australia once you make the transition to self-employment you are very unlikely to transition back into other forms of employment.

### *Sensitivity analysis*

The matching and clustering exercise is repeated first with alternative substitution and indel costs, then with three different sets of sample restrictions (dropping under 19s to omit those most likely to still be in full-time schooling, dropping over 55s to omit those most likely to be retirees for all or most of the analysis period, and relaxing the requirement to be observed in 10+ waves). In each case agglomeration proceeds until arriving at the smallest number of clusters where both a ‘casual bridge’ and a ‘casual trap’ cluster are separately identified; this varies between seven and 13 clusters. In all cases the key conclusion remains the same; casual bridge and casual trap pathways appear similarly prevalent.<sup>6</sup> Finally, because those in the two casual-dominated clusters spend comparatively more of the analysis period in full-time education (around 20% in each case compared to an overall analysis sample average of 6%) the sizes of clusters in the existing typology are examined when those ever observed in full-time education in the first three or five waves are dropped. In both cases both casual clusters fall in size, by slightly more in the case of the casual bridge cluster than the casual trap cluster. Students are an important source of those following both types of pathway, and a particularly important source of those following casual bridge pathways; but not the only source.

### **Who follows what pathway?**

The final step in the analysis is to describe how these clusters map on to the rich set of individual and contextual characteristics listed in Table 1. Because many of these observed characteristics are correlated with one another, a multivariate regression model for labour

market pathway type is estimated. This enables the quantification of associations between pathways and particular characteristics holding all other (observable) factors constant.<sup>7</sup> Given the unordered categorical nature of the dependent variable (the cluster), a multinomial logit model as in McVicar and Anyadike-Danes (2002) is employed. Results are presented, in Table 5, in both coefficient and relative risk ratio form. Discussion focuses on the casual trap and casual bridge clusters.

Other (observable) things being equal, and compared to the reference pathway of persistent full-time permanent employment, the relative risk of following one or other of the casual pathways is higher for females, single persons and migrants from non-English speaking countries, and for those outside the 25-49 age range, with comparatively low qualification levels, with lower cognitive ability, more willing to accept financial risk, with higher openness to experience scores or lower conscientiousness scores, with a long-term health condition or disability, with pre-school or school-aged children, with less labour market experience, and in local labour markets with higher unemployment rates. These associations are mostly in accordance with expectations.

Of most interest are those characteristics that are differentially associated with the two casual clusters; i.e., that disproportionately affect how likely an individual is to follow a casual trap pathway compared to a casual bridge pathway. The two standout characteristics in this respect are gender and education. Women are three times as likely as men to follow a casual bridge pathway but more than six times as likely to follow a casual trap pathway. Those that have not completed high school (i.e., Year 12) are more than twice as likely to follow a casual trap pathway as those that have, but are no more likely to follow a casual bridge pathway. Other characteristics that disproportionately lead to casual trap pathways include low cognitive ability and having a long-term health condition or disability, and for casual bridge pathways include migrant status from a non-English speaking country and lack

of labour market experience. Just as interesting are the characteristics that do not appear to substantially differentiate between the two clusters, which include age, the presence of children, and the local unemployment rate.

Although this approach does not enable the acceptance or rejection of any particular underlying behavioural mechanism as driving these patterns, the results do have some implications for how such mechanisms might operate in this context. If the co-existence of casual bridge and casual trap pathways reflects heterogeneous preferences among workers, then pathway choice appears to be determined more by gender and health than by the presence of children. If it reflects screening it is those with characteristics likely associated with lower productivity – low educational attainment, poor health, lower cognitive ability – who are being screened out of permanent employment. If it is scarring, it appears to be women not men, and those without positive educational signals, who are more at risk.

## **Conclusions**

With the exception of Fuller and Stecy-Hildebrandt (2015), the ongoing debate about the extent to which contingent employment acts as a bridge or trap has focused on transitions rather than longer-run pathways. Among other things, this approach can misdiagnose both indirect pathways from contingent to permanent employment (or vice versa) and ‘trap’-type pathways with short spells in other states, and can struggle to distinguish between those experiencing contingent employment as a ‘blip’ in an otherwise stable labour market trajectory and those with more significant contingent employment spells. Building substantially on Fuller and Stecy-Hildebrandt (2015) – which is limited to five-year pathways for a sample restricted to those initially in temporary employment – a pathways approach is used which reveals evidence of labour market pathways that correspond to both ‘bridge’ and ‘trap’ characterisations of contingent employment. Further, in the case of casual employment

in Australia, these types of labour market pathway are found to be roughly equally prevalent, although for some demographic groups, in particular women, those with low educational attainment and those with a long-term health condition or disability, ‘traps’ are more likely than ‘bridges’. Inasmuch as this is consistent with a segmented markets view of the Australian labour market, it is one that appears only partially segmented between contingent and permanent jobs in general, but much more segmented for key groups of workers.

### **Endnotes**

<sup>1</sup> Source: OECD Employment and Labour Market Statistics database (Labour Market Statistics – Employment by permanence of the job: incidence); doi: [10.1787/ifs-lms-data-en](https://doi.org/10.1787/ifs-lms-data-en).

<sup>2</sup> Further details about the representativeness of the sample can be found in a Supplementary Appendix available on request from the authors.

<sup>3</sup> The Supplementary Appendix presents further information on common sequences.

<sup>4</sup> See the Supplementary Appendix.

<sup>5</sup> We used the Stata SQ-ado files described in Brzinsky-Fay et al. (2006) for the OM analysis and Stata’s `clustermat` command for cluster analysis.

<sup>6</sup> Although still prevalent, both types of pathway are less commonly observed in the sample where we drop under 19s. Further details of all sensitivity analyses are presented in the Supplementary Appendix.

<sup>7</sup> See the Supplementary Appendix for descriptive statistics on characteristics by cluster.

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**Table 1.** Variable definitions and sample means: analysis sample

Variable	Definition	Mean
Full-time permanent	Employed full-time on a permanent contract	0.32
Part-time permanent	Employed part-time on a permanent contract	0.07
Fixed-term employment	Employed on a fixed-term contract	0.05
Casual employment	Employed on a casual basis	0.15
Other employed	Employed on some other arrangement (mostly self-employed)	0.12
Not employed	Not employed	0.28
Male	Gender is male	0.47
Indigenous Australian	Born in Australia and of indigenous origin	0.02
Born overseas / ESC	Born overseas in one of the main English-speaking countries	0.10
Born overseas / NESC	Born overseas in a non-English-speaking country	0.11
Year 12	Completed high school (i.e., Year 12)	0.14
Certificate / Diploma	Attained certificate level III or IV or a diploma	0.34
Tertiary qualification	Completed tertiary education	0.27
Father occupation missing	Father's occupation missing*	0.12
Father manager	Father's occupation was Manager when respondent aged 14*	0.22
Father professional	Father's occupation was Professional when respondent aged 14*	0.14
Father trades	Father's occupation was Technician or Trades Worker when respondent aged 14*	0.21
Father personal service	Father's occupation was Community or Personal Services Worker when respondent aged 14*	0.03
Father clerical & admin	Father's occupation was Clerical or Administrative Worker when respondent aged 14*	0.06
Father sales	Father's occupation was Sales Worker when respondent aged 14*	0.04
Father machine operator	Father's occupation was Machinery Operator or Driver when respondent aged 14*	0.09
Father high school	Father completed high school*	0.05
Father post-school educ.	Father completed post-secondary qualification*	0.55
Openness to experience	Mean score on 6-item trait descriptive adjective index (1-7 scale)	4.28
Conscientiousness	Mean score on 6-item trait descriptive adjective index (1-7 scale)	5.04
Extroversion	Mean score on 6-item trait descriptive adjective index (1-7 scale)	4.45
Agreeableness	Mean score on 4-item trait descriptive adjective index (1-7 scale)	5.37
Neuroticism	Mean score on 6-item trait descriptive adjective index (1-7 scale)	5.10
Cognitive ability (backward digits span)	Ability to recite sequence of digits backwards (0-7 scale)	3.98
Cognitive ability (symbol digit modalities)	Ability to match symbols to numbers (correct number of responses within 90 seconds)	50.14
Attitude to financial risk	Attitude to financial risk (1-4 scale)	3.59
Age <19	Aged <19 on 30 <sup>th</sup> June preceding interview	0.14
Age 19-24	Aged 19-24 on 30 <sup>th</sup> June preceding interview	0.10
Age 50-59	Aged 50-59 on 30 <sup>th</sup> June preceding interview	0.17
Partnered	Married or de facto	0.66
Long-term health condition	Has a moderate or severe work-limiting health condition	0.12
Pre-school child present	Has children aged 0-5 years in the income unit	0.12
School-age child present	Has dependent children aged 6-18 years in the income unit	0.24
Labour force experience	Years spent in employment since leaving full-time education	16.00
Local unemployment rate	Unemployment rate at the SA4 level	6.82

Notes: The sample is all those observed for at least ten waves between wave 1 and wave 14, initially aged 15-59. Sample means are for observations from the first available wave, except in the case of education variables, where the last available wave is used.

\* If father was missing or did not give a valid response, then information given about the mother was used instead.

**Table 2.** Labour market state by sex and age (% of working-age population), 2001-14

<i>Sex / Labour market state</i>	<i>Age group (years)</i>			
	<i>15-24</i>	<i>25-54</i>	<i>55-64</i>	<i>15-64</i>
<b>Persons</b>				
Permanent full-time employee	20.4	42.0	21.9	34.5
Permanent part-time employee	5.8	8.4	6.8	7.6
Fixed term contract employee	5.2	6.5	3.2	5.7
Casual employee	31.0	10.0	7.0	14.0
Other employed	2.1	13.0	14.6	10.9
Not employed	35.5	20.1	46.5	27.3
Total	100.0	100.0	100.0	100.0
<b>Men</b>				
Permanent full-time employee	23.5	54.4	28.0	43.8
Permanent part-time employee	4.3	2.1	2.8	2.7
Fixed term contract employee	5.8	6.5	3.5	5.9
Casual employee	28.2	7.7	6.8	12.0
Other employed	2.8	17.4	20.3	14.7
Not employed	35.4	11.9	38.6	20.9
Sub-total	100.0	100.0	100.0	100.0
<b>Women</b>				
Permanent full-time employee	17.2	29.8	15.8	25.2
Permanent part-time employee	7.3	14.6	10.8	12.5
Fixed term contract employee	4.6	6.5	2.9	5.6
Casual employee	33.9	12.2	7.3	16.0
Other employed	1.3	8.7	8.9	7.2
Not employed	35.7	28.2	54.3	33.6
Sub-total	100.0	100.0	100.0	100.0

Note: Cross-sectional population-weighted estimates for the pooled HILDA Survey sample, waves 1-14.

**Table 3.** Average year-to-year transitions: unweighted analysis sample (%)

Labour market state at t	Labour market state at t+1						Non-response	Total
	Perman't FT	Perman't PT	Fixed term	Casual	Other employed	Not employed		
Permanent full-time	27.82	1.06	<b>1.72</b>	0.99	0.75	1.29	0.83	34.46
Permanent part-time	1.09	4.95	0.42	0.66	0.20	0.66	0.18	8.15
Fixed term	<b>2.00</b>	0.46	2.17	0.36	0.19	0.36	0.16	5.69
Casual	<b>1.48</b>	0.87	0.63	6.23	0.46	<b>1.66</b>	0.29	11.62
Other employed	0.57	0.19	0.21	0.47	9.75	0.81	0.30	12.31
Not employed	0.82	0.66	0.41	<b>2.10</b>	0.70	19.20	0.59	24.48
Non-response	0.68	0.13	0.13	0.26	0.24	0.54	1.31	3.29

**Table 4.** Typology of labour market pathways (7-cluster solution)

	Cluster size	Modal sequence type	Average % of waves (% of individuals experiencing) in state						
			FTP	PTP	FXT	CAS	OE	NE	NR
(1) Exits from full-time permanent and churn	1132	1→6	41.0 (96.6)	14.1 (52.0)	13.2 (50.4)	9.6 (49.5)	2.1 (18.5)	17.2 (67.5)	2.7 (21.5)
(2) Casual to full-time permanent	672	6→4→1	45.3 (100)	5.0 (37.9)	8.2 (52.7)	19.7 (88.8)	1.5 (14.0)	15.7 (74.4)	4.6 (32.7)
(3) Persistent full-time permanent	2315	All 1s	80.5 (100)	1.9 (16.5)	6.0 (41.1)	2.7 (24.4)	2.3 (15.0)	2.6 (23.4)	3.8 (26.6)
(4) Part-time permanent	704	2→6	8.4 (49.6)	50.3 (99.9)	6.2 (41.2)	9.9 (56.7)	2.7 (17.3)	19.6 (71.9)	2.7 (23.9)
(5) Persistent casual and casual churn	651	All 4s	11.4 (60.8)	8.0 (46.4)	5.7 (39.8)	55.1 (99.8)	2.3 (18.3)	13.5 (71.9)	4.1 (27.6)
(6) Not employed	1895	All 6s	3.0 (23.3)	2.3 (19.1)	1.8 (14.2)	10.2 (47.9)	3.2 (20.0)	76.1 (100)	3.2 (23.6)
(7) Other employed	1325	All 5s	10.9 (45.2)	1.9 (14.8)	2.6 (19.7)	5.6 (33.1)	65.7 (100)	9.2 (43.9)	3.9 (28.3)
Overall sample	8702	All 1s	34.2 (67.4)	8.2 (32.1)	5.7 (34.0)	11.4 (47.3)	12.2 (29.8)	24.7 (60.4)	3.6 (25.8)

Key: FTP=Full-time permanent; PTP=Part-time permanent; FXT=Fixed-term; CAS=Casual; OE=Other employment; NE=Not employed; NR=Non-response.

**Table 5.** Factors predicting cluster: MNL estimates (coefficients, standard errors, and relative risk ratios)

Variable	C1 vs C3	C2 vs C3	C4 vs C3	C5 vs C3	C6 vs C3	C7 vs C3
Male	-1.630*** (0.093) [0.196]	-1.030*** (0.126) [0.357]	-3.699*** (0.182) [0.025]	-1.933*** (0.132) [0.145]	-2.145*** (0.100) [0.117]	-0.589*** (0.089) [0.555]
Indigenous Australian	-0.461 (0.374) [0.631]	0.136 (0.380) [1.146]	0.012 (0.390) [1.012]	-0.085 (0.412) [0.918]	0.554** (0.280) [1.740]	-0.513 (0.397) [0.599]
Born overseas / ESC	0.090 (0.132) [1.094]	-0.039 (0.235) [0.962]	0.042 (0.169) [1.043]	-0.277 (0.227) [0.758]	0.105 (0.141) [1.110]	0.100 (0.121) [1.105]
Born overseas / NESC	-0.013 (0.139) [0.987]	0.538*** (0.172) [1.712]	-0.114 (0.178) [0.892]	0.235 (0.189) [1.265]	0.603*** (0.131) [1.828]	0.170 (0.126) [1.186]
Year 12	-0.029 (0.161) [0.971]	-0.335 (0.217) [0.715]	-0.309 (0.191) [0.734]	-0.760*** (0.202) [0.468]	-0.566*** (0.145) [0.568]	-0.337** (0.146) [0.714]
Certificate / Diploma	-0.091 (0.124) [0.913]	-0.189 (0.178) [0.828]	-0.123 (0.142) [0.884]	-0.669*** (0.150) [0.512]	-0.878*** (0.112) [0.416]	-0.360*** (0.108) [0.698]
Tertiary qualification	0.190 (0.133) [1.209]	-0.121 (0.192) [0.886]	-0.282* (0.158) [0.754]	-0.952*** (0.174) [0.386]	-1.475*** (0.134) [0.229]	-0.811*** (0.124) [0.445]
Father high school	-0.119 (0.206) [0.888]	-0.041 (0.275) [0.960]	-0.129 (0.263) [0.879]	-0.088 (0.299) [0.915]	-0.062 (0.215) [0.940]	0.075 (0.188) [1.078]
Father post-school educ.	-0.154 (0.094) [0.857]	0.092 (0.134) [1.097]	-0.174 (0.116) [0.840]	0.111 (0.130) [1.118]	-0.009 (0.095) [0.991]	-0.144* (0.087) [0.866]
Openness to experience	0.079* (0.046) [1.082]	0.220*** (0.064) [1.247]	-0.033 (0.056) [0.968]	0.123** (0.063) [1.131]	0.334*** (0.047) [1.396]	0.311*** (0.044) [1.365]
Conscientiousness	-0.083* (0.045) [0.920]	-0.138** (0.062) [0.871]	-0.100* (0.056) [0.905]	-0.185*** (0.061) [0.831]	-0.162*** (0.046) [0.850]	-0.162*** (0.043) [0.850]
Extroversion	-0.008 (0.040) [0.992]	0.066 (0.057) [1.068]	-0.096** (0.049) [0.908]	-0.047 (0.055) [0.954]	-0.104** (0.041) [0.901]	0.098** (0.039) [1.103]
Agreeableness	-0.059 (0.055) [0.942]	-0.043 (0.075) [0.958]	-0.005 (0.070) [0.995]	0.037 (0.075) [1.038]	-0.135** (0.055) [0.874]	-0.083 (0.051) [0.920]
Neuroticism	0.021 (0.044) [1.021]	-0.005 (0.060) [0.995]	0.071 (0.056) [1.073]	0.056 (0.059) [1.058]	0.063 (0.044) [1.065]	0.159*** (0.043) [1.172]
Cognitive ability (backward digits span)	-0.022 (0.030) [0.978]	-0.060 (0.043) [0.942]	-0.042 (0.038) [0.959]	-0.007 (0.043) [0.993]	-0.079** (0.032) [0.924]	-0.012 (0.029) [0.988]
Cognitive ability (symbol digit modalities)	-0.017*** (0.005) [0.984]	-0.010 (0.006) [0.990]	-0.012** (0.006) [0.988]	-0.028*** (0.006) [0.972]	-0.047*** (0.005) [0.954]	-0.015*** (0.004) [0.985]

Attitude to financial risk	0.037 (0.049) [1.037]	0.181*** (0.067) [1.199]	0.094 (0.062) [1.098]	0.160** (0.067) [1.173]	0.316*** (0.050) [1.371]	-0.310*** (0.045) [0.734]
Age <19	0.449** (0.219) [1.566]	1.684*** (0.229) [5.387]	0.592** (0.271) [1.808]	2.027*** (0.238) [7.590]	0.548*** (0.199) [1.731]	-0.407 (0.257) [0.666]
Age 19-24	0.403*** (0.148) [1.496]	0.347* (0.198) [1.415]	-0.345* (0.207) [0.708]	0.362* (0.216) [1.437]	-0.485*** (0.159) [0.615]	-0.773*** (0.179) [0.462]
Age 50-59	1.418*** (0.165) [4.131]	1.043*** (0.359) [2.839]	1.719*** (0.197) [5.579]	1.355*** (0.241) [3.875]	3.212*** (0.165) [24.833]	1.227*** (0.155) [3.411]
Partnered	0.045 (0.102) [1.046]	-0.621*** (0.164) [0.537]	0.360*** (0.137) [1.433]	-0.445*** (0.155) [0.641]	0.310*** (0.108) [1.364]	0.318*** (0.103) [1.374]
Long-term health condition	0.417** (0.165) [1.518]	0.578** (0.228) [1.783]	0.849*** (0.190) [2.338]	0.982*** (0.194) [2.671]	1.940*** (0.136) [6.958]	0.567*** (0.149) [1.763]
Pre-school child present	-0.323** (0.143) [0.724]	0.308 (0.197) [1.361]	0.277* (0.147) [1.319]	0.377** (0.181) [1.458]	0.274** (0.130) [1.315]	0.207* (0.109) [1.230]
School-age child present	-0.316*** (0.109) [0.729]	0.578*** (0.179) [1.782]	0.028 (0.125) [1.028]	0.418*** (0.157) [1.518]	-0.251** (0.110) [0.778]	-0.059 (0.093) [0.942]
Labour force experience	0.004 (0.006) [1.004]	-0.061*** (0.010) [0.941]	-0.015** (0.007) [0.986]	-0.015* (0.009) [0.985]	-0.072*** (0.006) [0.931]	-0.001 (0.006) [1.000]
Local unemployment rate	0.035* (0.019) [1.035]	0.098*** (0.025) [1.103]	0.062*** (0.023) [1.064]	0.126*** (0.025) [1.135]	0.094*** (0.019) [1.098]	0.060*** (0.017) [1.062]

Notes:

N=7354.

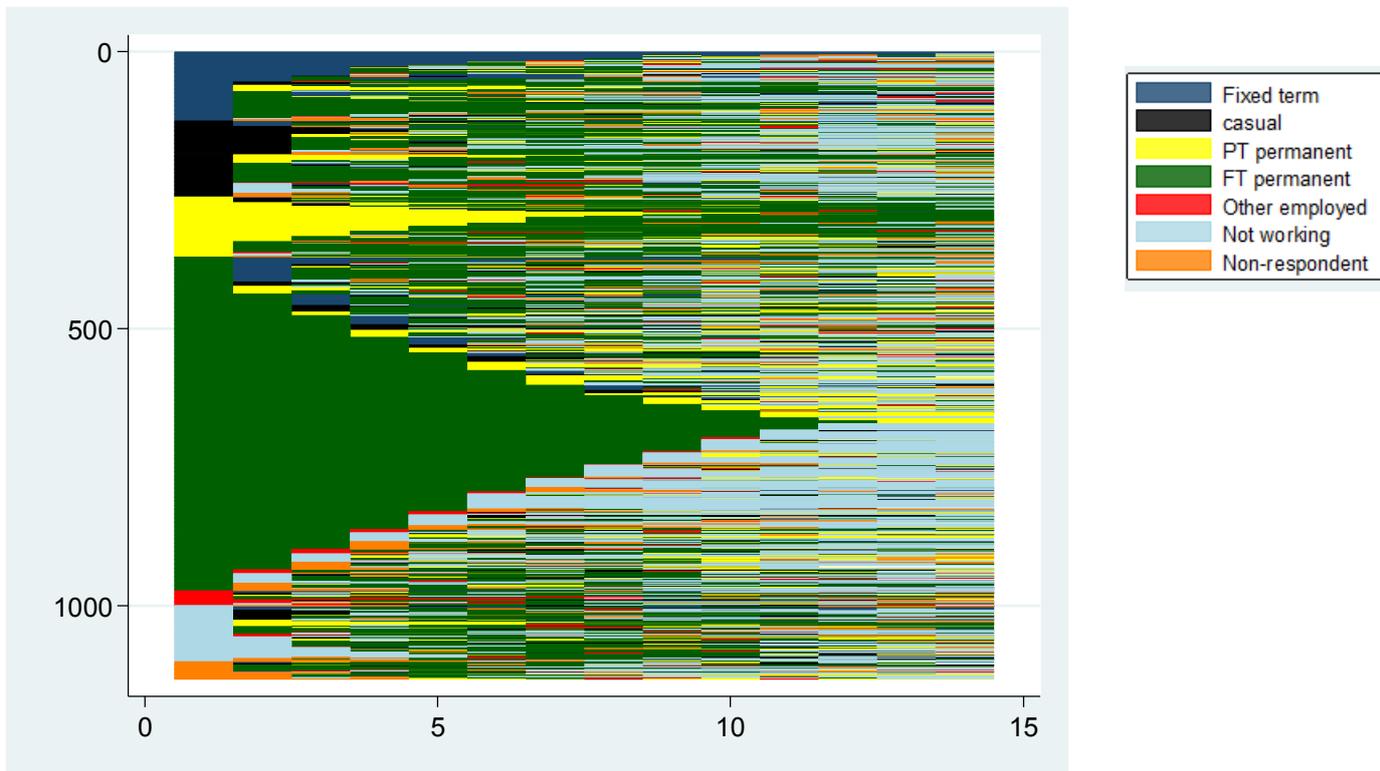
The base category is cluster 3 (persistent full-time permanent).

Figures in curved parentheses are robust standard errors; figures in square parentheses are relative risk ratios.

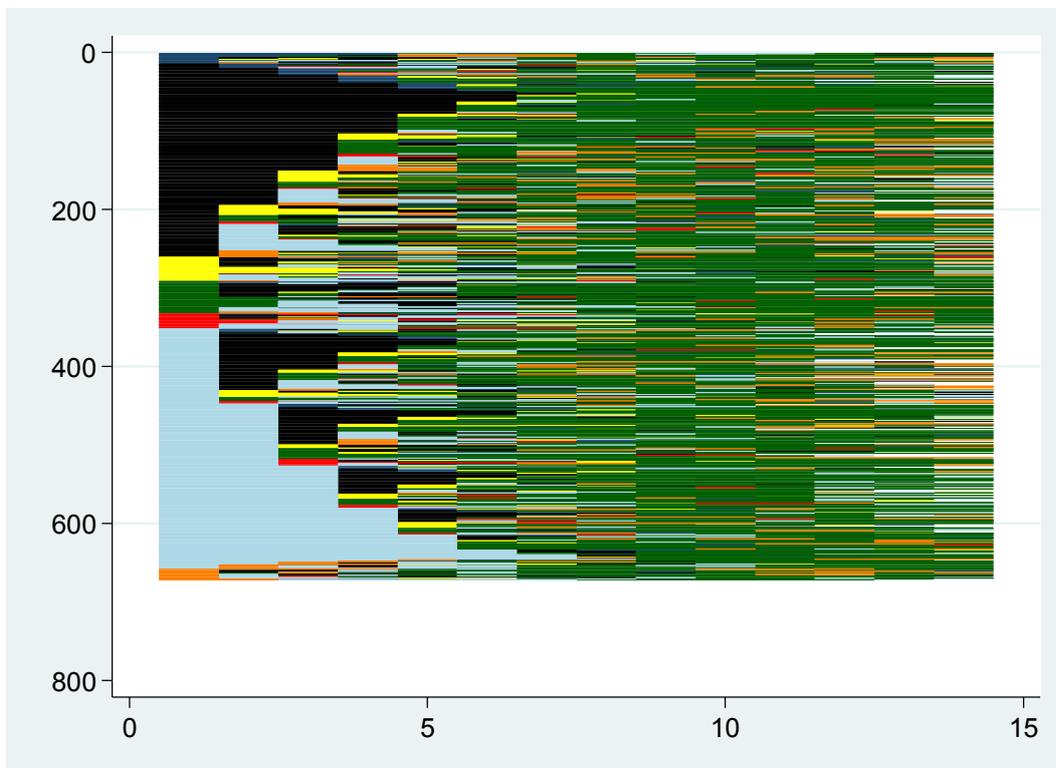
\*, \*\* and \*\*\* denote significance at the 10%, 5% and 1% levels, respectively.

Also included, but not reported, are 8 dummies for father's occupation at age 14. To preserve sample size, missing values for the personality, cognitive ability, and attitude to financial risk variables are set to their respective sample mean values and dummy variables identifying cases with missing observations on each of these variables included in the estimation.

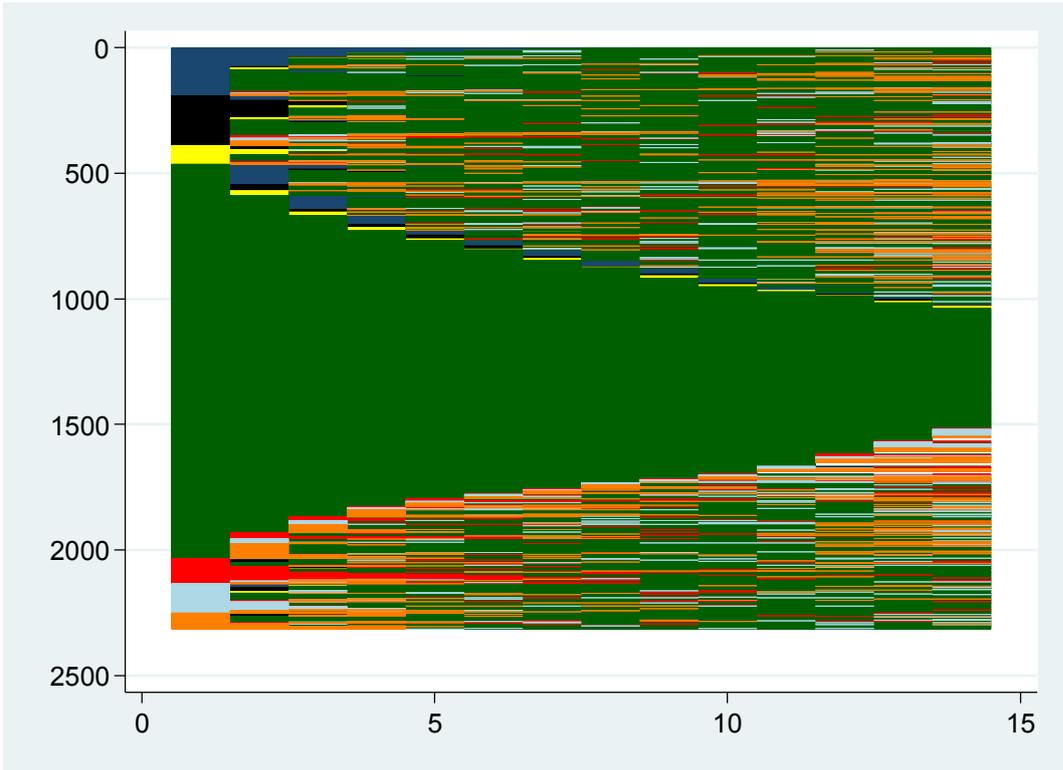
**Figure 1.** Typology of labour market pathways (7 clusters): sequence index plots



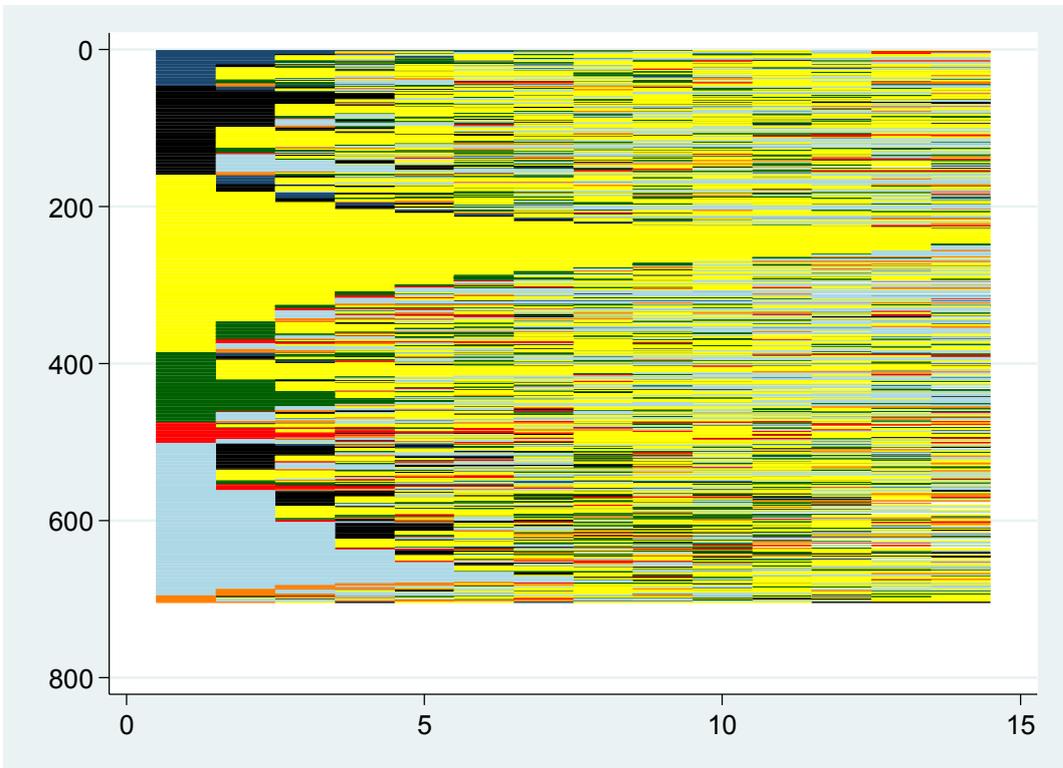
Group 1: Exits from full-time permanent and churn



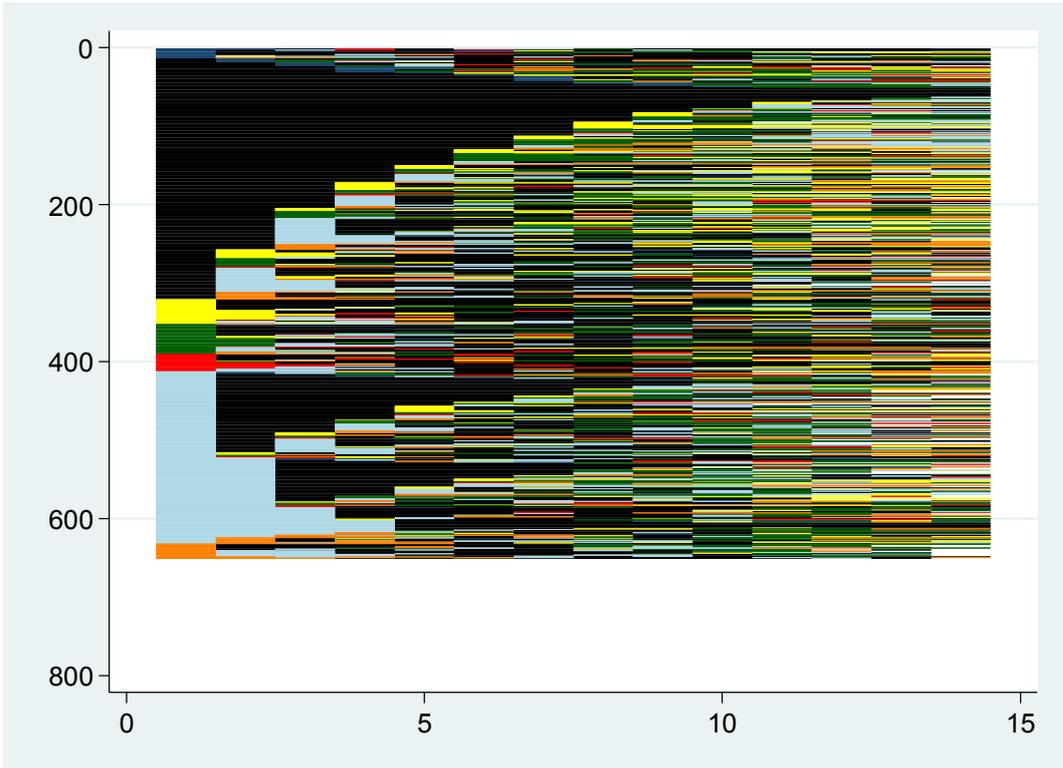
Group 2: Casual to full-time permanent



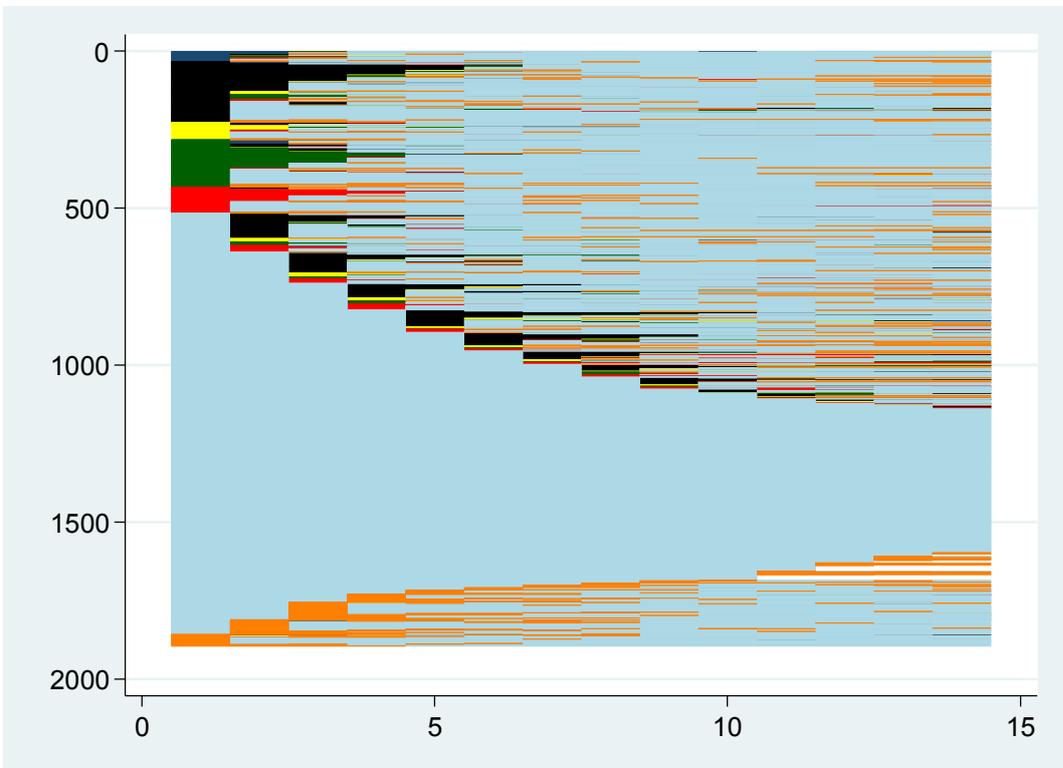
Group 3: Persistent full-time permanent



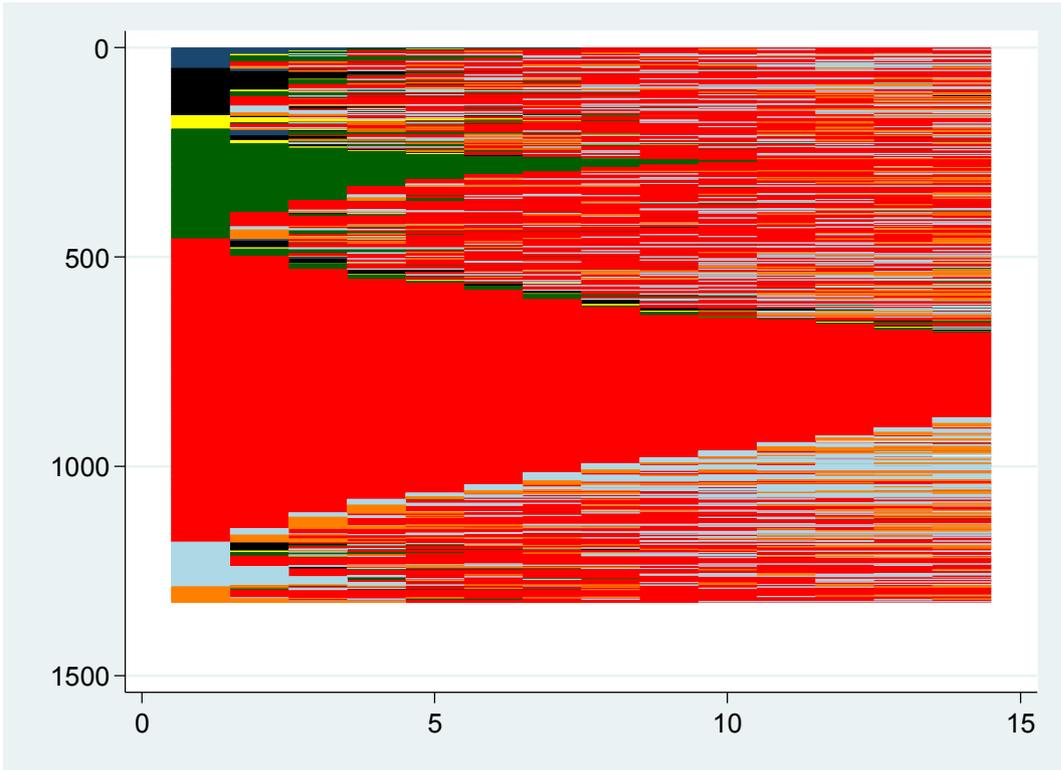
Group 4: Part-time permanent



Group 5: Persistent casual and casual churn (n=651)



Group 6: Not working



Group 7: Other employed