

# Coping with intra-household job separation in South Africa's labor market

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Accepted for publication in  
*Economic Development and Cultural Change*  
April 2018

JEL:  
Time Allocation and Labor Supply J22.  
Economic Development: Human Resources; Human Development; Income  
Distribution; Migration O15

Keywords:  
Employment; Participation; Added worker effect; Pension; South Africa; De-  
veloping countries.

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## **Abstract**

Households in developing countries employ many income and consumption smoothing strategies to cope with substantial exposure to risk, especially in the absence of strong formal social safety nets. Using South African Labour Force Survey panel data in an event study methodology, this paper examines household strategies for coping with reductions in household income following a job separation, including increasing labor market attachment of other household members, accessing non-wage sources of financial support and altering the composition of the household. One year after a job separation in the household, employment transitions increase by 22.5 percentage points, driven mainly by the non-searching unemployed and not-economically-active household members rather than the searching unemployed. Households become significantly more reliant on savings and remittance income, with pensions playing a marginal role. Households are worse off during the two years after a job separation: they are less likely to hold financial assets and more likely to report frequent food insecurity. My results suggest that involuntary unemployment is an important cause of high and persistent unemployment rates in South Africa. Addressing structural factors in the labor market that constrain an individual's response to a household shock will enable households to limit the negative repercussions of income shocks.

# 1 Introduction

Households in developing countries face substantial exposure to risk (Mor-duch, 1995; Dercon, 2002). Informal income- and consumption-smoothing mechanisms are used to cope with these risks, especially when public social safety nets are weak and under-developed. A rich literature documents the use of risk coping strategies such as increasing labor market attachment to smooth income, drawing on existing assets, accessing formal or informal financial institutions, adjusting household composition, deferring or reducing consumption and relying on social networks (Deaton, 1992; Frankenberg, Smith, and Thomas, 2003; McKenzie, 2003; Duryea, Lam and Levison, 2007; Akresh, 2009; Gertler, Levine and Moretti, 2009). However, these strategies are imperfect and leave households exposed to the adverse effects of shocks. An understanding of how households alter their behavior and the allocation of resources when faced with negative shocks can guide public policy to help improve economic outcomes.

In the absence of a formal unemployment support system, households and family networks can partially self-insure against negative shocks to the wage income of one household member through increases in the labor supply of other members of the household (i.e. the added worker effect). A job separation or reduction in the wage of one household member increases the desired labor supply of other household members through the income effect and the

cross-substitution effect (Maloney 1987, Humphrey 1940).<sup>1</sup> The income effect operates through the decreasing share of household resources available to each member. The cross-substitution effect arises when the household member who loses a job or has their hours reduced takes over home production activities, which lowers the shadow wage (outside option) for home production for other household members (Maloney 1987).<sup>2</sup> As a result of these two effects, both the labor supply and search effort of non-employed household members increase, which raises their likelihood of obtaining employment. The added worker effect may also operate through an increase in motivation to find employment due to pressure from or altruism towards other household members.

The extent to which households can self-insure against negative shocks depends on the local availability of employment opportunities and the presence of search frictions. This is a central concern in South Africa, where the unemployment rate has fluctuated around 25 percent by the official definition and 35.6 percent if discouraged workers are included (Statistics South Africa 2013) yet only about 3 percent of the unemployed receive unemployment support (Klasen and Woolard, 2009).<sup>3</sup> The low transition rate out of

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<sup>1</sup>This holds whether the household is modeled as a unitary decision-maker or as a set of actors with bargaining power (Basu, Genicot and Stiglitz 1999), provided that bargaining power over household resources is greater than zero for all household members.

<sup>2</sup>I do not attempt to distinguish the relative size of the income effect and the cross-substitution effect in this paper. Both effects lower the reservation wage.

<sup>3</sup>A more recent study using National Income Dynamics Study data found that 0.1 percent of the unemployed were receiving unemployment insurance (Ebrahim, Leibbrandt

unemployment into either the formal or informal sector results in high unemployment durations, especially for Black Africans. Over 20 years after the end of apartheid, the large post-apartheid inflows of labor market entrants with low skill levels and limited work experience remain poorly integrated into the workforce.<sup>4</sup>

The strength of kin support norms of sharing resources among extended family networks in South Africa implies that the labor market behavior of household members should be correlated. The elderly share their pension income with kin in the expectation of being supported in times of need (Sagner and Mtati 1999). This sharing of pension income within the household has been shown to alter labor supply (Bertrand, Mullainathan and Miller 2003), affect transfers from migrants (Jensen 2003), enhance household security (Ardington and Lund 1995) and change the allocation of household income to food, schooling and savings (Case and Deaton 1998, Duflo 2003, Ambler 2016).<sup>5</sup> Employed members of the household are therefore likely to take on the burden of financially supporting unemployed household members.

A number of studies demonstrate the existence of a small, but often insignificant added worker effect in the U.S. (see Heckman and MaCurdy (1980, and Woolard, 2012)

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<sup>4</sup>See Verick 2012.

<sup>5</sup>The tight kin network of exchanges and obligations has also been documented among black urban poor near Chicago, Illinois (Stack, 1974).

1982), Maloney (1987, 1991), Tano (1993), Spletzer (1997), Stephens (2002), Juhn and Potter (2007), and Garcia-Perez and Rendon (2016)). The availability of unemployment insurance in the U.S. may crowd out the added worker effect (Gruber and Cullen (2000)). Bredtmann (2014) and Lee and Paranas (2014) conduct cross-country studies and find the largest added worker effect where formal social protection is limited or where reliance on the family is emphasized. In addition, the discouraged worker effect may outweigh any added worker effect when local labor market conditions are poor and potential added workers face higher barriers to obtaining employment (Gruber and Cullen (2000), Yeung and Hofferth (1998), Lundberg (1985), Layard, Barton and Zabalza (1980)).

The literature on the added worker effect outside the U.S. focuses on identifying the broad range of coping mechanisms used by households instead of or in addition to added workers. Studies find evidence of an added worker effect in Europe (Bredtmann (2014), Fuchs and Weber (2015)), Turkey (Baslevent and Onaran (2003), Karaoglan and Okten (2015)), Latin America (Fernandes and de Felício (2002), Parker and Skoufias (2004) and Japan (Kohara (2010))). The added worker effect is largest when liquidity and credit constraints are binding, such as during economic crises, preventing families from employing alternative strategies to smooth temporary income shocks. (See Fernandes and de Felício (2002) for Brazil, Baslevent and Onaran (2003) for Turkey, and Parker and Skoufias (2004) for Mexico). Serneels (2002), the only other

added worker effect study on Africa, finds no evidence of an added worker effect in Ethiopia using either actual or desired labor supply. Households sell assets and smooth consumption instead because increased labor supply among household members who have low attachment to the labor market is likely sub-optimal.

This study examines strategies that households use to cope with reductions in household wage income in the aftermath of a job separation, including labor market attachment, reliance on other sources of financial support and changes in the composition of the household. It also evaluates whether the well-being of household members declines. This study contributes to the growing international literature on the added worker effect. It is the only the second paper, to my knowledge, to examine the added worker effect in Africa, the first to examine the effect where the norms of kin support are strong, and one of few that focus on idiosyncratic economic shocks rather than recessions or crises. Notably, it broadens the typical scope of the added worker effect to consider correlated labor market outcomes among extended family members and migrants. This study also contributes to the literature on how households cope with negative shocks, which has implications for policy design. It is one of the first papers to use Labour Force Survey (LFS) household panel data to examine the timing of labor market responses while controlling for household characteristics (see Banerjee, Galiani, Levinsohn, McLaren and Woolard, 2008; Ranchhod and Dinkelman, 2008).

I find evidence of an added worker effect in Black African households, with employment transitions following a job separation coming from non-searching unemployed and not economically active household members rather than the searching unemployed. Men and women are equally likely to be added workers. There is no increase in narrow labor force participation or desired number of work hours. Faced with reduced earned household income, reliance on savings and remittance income increases, with pension income playing only a marginal role. Households appear to be worse off after a job separation: they are less likely to hold financial assets and more likely to report frequent food insecurity. My results suggest that available coping strategies are inadequate at smoothing consumption. There is therefore a potentially large role for policy interventions that complement household strategies in order to mitigate the impact of negative shocks.

The outline of this paper is as follows: Section 2 presents a standard job search model. Section 3 describes the Labour Force Survey data that allows researchers to track a nationally-representative sample of individuals over time. Section 4 presents descriptive statistics that compare households that have experienced a recent job separation with those that have not as well as transition matrices that compare employment outcomes for Black Africans and Whites. I present my regression methods in Section 5 and my results in Section 6. Section 7 discusses the implications of my findings. Section 8



concludes.

## 2 Labor Market Transition Model

An agent chooses his or her labor force participation status in each period to maximize the present discounted value of lifetime income.<sup>6</sup>

In each period spent searching, the agent pays search costs  $x$  and receives one wage offer drawn from the distribution  $F(w)$ . There is only one level of search effort in the model, and search costs ( $x$ ) are identical across individuals.

An optimizing worker will set the reservation wage ( $\bar{w}$ ) such that

$$\bar{w} = b(1 - \beta) + \beta \left\{ E[w]_{\text{accept}} + \int_0^{\bar{w}} F(w') dw' \right\}, \quad (1)$$

where  $b$  is the outside option and  $0 < \beta < 1$  is the discount factor.

The value function is:

$$V(w) = \max \{ V_{\text{discouraged}}, -x + \max \{ V_{\text{accept}}, V_{\text{reject}} \} \} \quad (2)$$

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<sup>6</sup>This model is based on McCall's model of intertemporal job search (McCall, 1970).

$$V(w) = \max \left\{ \frac{b}{1-\beta}, -x + \max \left\{ \frac{w}{1-\beta}, b + \beta \int_0^\infty V(w') dF(w') \right\} \right\}. \quad (3)$$

Within this framework, the agent's decisions are affected by a change in the value of the outside option ( $b$ ). If the value of  $b$  falls due to a decline in household or government support, then (1) the reservation wage will fall, leading to a shorter duration of unemployment and (2) the value of discouragement will fall relative to the value of searching. We would expect to see individuals transitioning from discouraged to searching, and from searching (or directly from discouraged) to employed. Other sources of support such as drawing down assets that supplement  $b$  would limit the decline in the reservation wage and reduce the magnitude of these effects.

### **Result 1**

A decrease in the value of the outside option ( $b$ ) leads to a decrease in the reservation wage:

$$\frac{d\bar{w}}{db} = \frac{(1-\beta)}{1-\beta F(\bar{w})} \in [0, 1], \quad (4)$$

which increases the likelihood of transition from unemployment to employment.

## Result 2

The second result implies that after a fall in the outside option ( $b$ ), workers will be more likely to transition from discouraged to searching:

$$\frac{\partial V_{disc}}{\partial b} > \frac{\partial E[V_{search}]}{\partial b}. \quad (5)$$

If a worker was initially indifferent between discouragement and searching, then after a decrease in the value of the outside option ( $b$ ), he or she will prefer searching. The intuition behind this result is that if the individual transitions to searching, they will adjust their reservation wage to increase the likelihood of accepting a wage offer (making it less likely that they will receive  $b$  in the subsequent period). In other words, the reservation wage adjusts to reduce the negative impact of a fall in  $b$  on the present discounted value of future income.

## 3 The Data

This study uses the South Africa Labour Force Survey (LFS), which is equivalent to the United States Current Population Survey (CPS) but is conducted only twice a year and uses a rotating sample where 20 percent of households are replaced each round. The LFS was conducted biannually by Statistics South Africa (StatsSA) between March 2000 and September 2007. Each wave

of the nationally representative sample consists of about 100,000 individuals in about 30,000 households. Detailed information was collected about the labor market participation of individuals aged 16-64 years, focusing on the preceding seven days. The LFS questionnaire includes questions about demographic characteristics, biographical information, activities related to work, unemployment and non-economic activities, agricultural activities and uncompensated activities.<sup>7</sup> The public-use cross-sectional household data were linked to create a panel using confidential match identification numbers provided by StatsSA.

Using standard International Labour Organization (ILO) definitions, individuals were classified as employed (in either the formal or the informal sector), unemployed or not economically active (NEA) based on responses to a series of survey questions. The methodology is summarized in Appendix Table A1. Respondents were employed if they had performed a job activity in the past 7 days, or if they were absent from a job due to bad weather, or due to personal leave to care for their own illness or that of a family member. Respondents were unemployed if they could not find work, or if they had a job but were absent due to transport problems, a layoff or another reason not mentioned above. They had to be willing to accept a suitable job if it were offered and be ready to start work within one week to be classified as unemployed. The respondent was also considered unemployed if he or she had a

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<sup>7</sup>More information is available at <http://www.statssa.gov.za>.

job that started at a definite date in the future. Within the unemployed, a respondent was classified as searching if they had taken active steps to look for work or to start their own business in the four weeks prior to the interview, and classified as discouraged otherwise. Individuals were classified as NEA if they had another primary activity (i.e. student, homemaker, retired) *and* they preferred not to work. Seasonal workers in the off-season were also considered NEA.

Even though they are excluded from the official (ILO) definition of unemployment, discouraged workers are included in this analysis because discouragement is not an absorbing state in South Africa (Kingdon and Knight, 2006; Banerjee, Galiani, Levinsohn, McLaren and Woolard, 2008; Verick 2012). The transition rate between discouragement and employment is over 10 percent for Black Africans. Discouraged workers may begin searching and obtain employment within the six months elapsing between survey waves. Also, the offer arrival rate for discouraged workers may not be zero. The unemployed will not search in periods where there are not enough resources to cover search costs, but if funds become available (e.g. savings accumulate) they may resume searching.

### 3.1 Panel Data

The results in this paper are based on individual-level data from waves 4 through 9 of the LFS, as released by StatsSA. From September 2001 (wave 4) to March 2004 (wave 9), the sample involved a rotating panel design, with 20 percent of respondents being rotated out between waves. Considerable effort on the part of StatsSA created a panel of individuals who were present in two or more cross-sectional waves.<sup>8</sup> Of the 616,167 individual observations in the cross-section, 122,463 appeared in the panel data and 73,338 were in three or more survey waves. As in the CPS, the panel data suffers from attrition due to non-response (individual or household level), mortality, migration or recording errors. Taking into account the 20 percent rotation, the panel-inclusion rates for all but the last wave are equal to or above the 71 percent overall match rate for the CPS, which employs a similar survey and respondent-following methodology (Madrian and Lefgren, 2000). I perform inverse probability weighting (IPW) based on the CPS IPW methodology to correct for differential attrition on observables (see Appendix Table A2). As another robustness check, I confirm that results are consistent across samples subject to different levels of attrition from the panel.<sup>9</sup> The panel data provides an important advantage over retrospective questions in the cross-sectional data because it permits the identification of individuals that recently experienced a job separation but have since found employment (and

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<sup>8</sup>Detailed information about the matching process is available in StatsSA (2006).

<sup>9</sup>The individual (person) weights provided by StatsSA and used in this analysis correct for household non-response.

would therefore not be questioned about recent unemployment spells).

## 4 Descriptive Statistics

An examination of labor market transition rates reveals two features of the South African labor market: discouragement is a particularly “sticky” employment status for Black Africans, but discouraged individuals are as likely as the searching unemployed to transition into employment (Tables 1 and 2). Transition rates for whites are presented as a comparison. The other two racial categories, Indians and Coloureds, are omitted but their employment outcomes tend to fall between those of Black Africans and Whites. Transition rates between wave 8 and wave 9 in these tables are broadly representative of the rates between the other LFS panel waves. Two things are immediately evident from the transition matrices. First, discouragement is more constraining for Black Africans than Whites. Over 35 percent of Black Africans who are discouraged remain so six months later, whereas this figure is only about 13 percent for White men, and 20 percent for White women. Clearly the duration of unemployment varies by race. Second, a similar proportion of Black African men and women transition from discouragement to employed as transition from unemployed to employed within the six months that elapses between waves. Discouragement is not an absorbing state and is clearly distinct from NEA based on the transition rates, which provides

additional support for considering discouraged workers as distinct from being out of the labor force.

Households experiencing prime-age job separations are broadly similar to the rest of the households in the sample, but notably are slightly larger, have less education on average, tend to be in areas with higher unemployment rates and are more likely to be in receipt of the child grant (Table 3). Though other coefficients are statistically significant in such a large sample, the difference (in absolute value or percentage terms) is relatively small. This motivates the use of an event study methodology with household fixed effects, and limits the generalizability of the results to households that are likely to experience a job separation.

## 5 Methods

Regression analysis of household outcomes is based on an event study analysis using the following specification:

$$Y_{ijt} = \beta_0 + \sum_{k=-4}^4 \gamma_k(t - T_i^* = k) + \phi' X_{ijt} + \delta_t + \alpha_i + \epsilon_{ijt} \quad (6)$$

where  $Y_{ijt}$  is an outcome variable for household  $i$  in county  $j$  for time period  $t$ ,  $\gamma_k$  is a set of indicators for the time period relative to the time of the most re-



cent job separation of a prime age (25-49 year old) household member,  $X_{ijt-1}$  is a vector of lagged household characteristics,  $\delta_t$  is a set of time dummies (for survey waves) and  $\alpha_i$  represents household (or, in some specifications county by survey wave) fixed effects.<sup>10</sup> My analysis focuses on Black African households because Black Africans compose over 80 percent of the South African population, their unemployment rate is very high, and kin support networks are generally strong. The impact of job separations of 25-49 year olds on household members aged 16-59 is investigated to exclude anticipated and voluntary job separations due to retirement or students returning to school after employment during school breaks. The sample excludes the very small fraction of households experiencing more than one job separation. Observations from all six panel waves were pooled in the regression, and standard errors are clustered at the household level. Following U.S. CPS methodology, I use inverse probability weighting by survey wave for inclusion in the panel to correct for differential attrition (Madrian and Lefgren, 2000).

To address modeling issues raised by the inter-temporal labor supply literature (see Ham 1986), the  $X_{ijt}$  vector includes controls for the lagged local race- and sex-specific unemployment rate as a proxy for labor demand, the average high school (matric) completion rate to proxy for household human capital, changes in household composition (number of household members,

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<sup>10</sup>The approximately 3,000 South African “counties” known as main places have a median population of 4,200 and contain no more than 100,000 residents.

presence of a pension-eligible member). Household fixed effects absorb any non-time varying household preferences for leisure. I also include an indicator for whether someone in the household receives a government child grant, which could crowd out employment.<sup>11</sup>

My outcomes of interest include four labor market status transitions: whether a household member transitioned (1) from NEA (does not desire work) or broad unemployment (including those who desire work but are not actively searching) to employment (either formal or informal); (2) from searching unemployment to employment (either formal or informal); (3) from NEA or discouraged to narrow labor force participation and (4) from any labor market status into educational attendance. Additionally I test whether employed household members desire more work hours after a household separation.

I investigate other changes around the time of job separation: whether there was any change in household composition (calculated conservatively so that any recording errors leading to panel exclusion are considered a change in composition) or a change in the number of pension-aged adults (women 60 and above, men 65 and above). The primary source of household income (salaries, remittances or pension income) was tracked before and after job separation, as was the primary source of financial support for unemployed

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<sup>11</sup>The child grant is available to primary caregivers with co-resident children under 18.

household members (someone in the household, someone outside of the household, savings, pension income or unemployment insurance).

To determine whether households are worse off after a job separation, I examine whether the household owned any kind of financial assets (including savings or life insurance), often or always had problems satisfying household food needs, or recently reduced its household expenditure to a lower bracket.

I evaluate the robustness of my results to different sample restrictions. My primary sample is restricted to individuals in households that are fully matched in at least two survey waves. I perform a series of robustness checks varying the minimum number of waves in the panel and the minimum panel match rate of the household (see Section 6.2).

## 6 Results

The figures that follow plot event study coefficients for the time path of household outcomes before and after a job separation, which on average leads to the loss of 40 work hours per week and R424 of monthly household income. Appendix tables present coefficients as well as alternate specifications. Among households that experience a job separation, one quarter of the jobs lost are regained or replaced within 12 months of the separation, and almost one half

within 18 months (Figure 1, Table A3). There is a slight upward pre-trend in household employment before the job separation, however after the separation the employment level remains below the pre-trend level. The results focus on the preferred specification (Sample 1 in Col 1 of Table A3) of households with a job separation from employment held for at least 6 months that do not change composition of members, and includes household-level fixed effects. As expected, households with more adult members have significantly more employed members (Table A3). The lagged local unemployment rate is associated with having slightly more employed household members in the following period. Households with a higher number of high school graduates have a marginally significantly higher number of employed household members. Coefficients for the presence of a pension-eligible individual and receipt of a child grant are small and not statistically significant. The four different samples that include household fixed effects (Table A3 Cols 1-4) produce similar results overall.

Transitions into employment following a job separation come primarily from discouraged (non-searching) workers who are 22.5 percentage points more likely to transition into employment between 6-12 months of the job separation relative to before (Figure 2 left panel, Table A4 Col 1, Online Figure S1 left panel). There large and statistically significant point estimates 24 months following a household job separation. Discouraged workers are 4 percentage points more likely to transition if they co-reside with a pen-

sion eligible household member and about a quarter of a percentage point more likely to transition for each percentage point increase in the lagged local unemployment rate, which is consistent with the added worker effect rather than the discouraged worker effect. The proportion of the household that has completed high school is associated with a small and insignificant increase in the transition rate. Table A4 Col 2 shows that households that change composition during the sample period (Sample 4) experience a statistically significant 29 percentage point increase in the likelihood of transitions to employment, which may be partially driven by the in-migration of new or returning household members (Sample 2). These effects are driven by separations from short-term employment – there are no statistically significant increases in transition rates into employment following separations from employment held longer than a year in households with no change in composition (Table A4, column 3). The inclusion of a control for the lagged local labor market conditions increases the coefficient on transitions by discouraged workers by almost 2 percentage points, which is consistent with the added worker effect (results not shown).

The searching unemployed are 12.4 percentage points more likely to transition into employment between 6-12 months of the job separation relative to before, however this is not statistically significant (Figure 2 Panel B, Table A4 Cols 4-6 and Online Figure S1). Coefficients on control variables are all small and none are significant.

In order to examine heterogeneity in the response to a household job separation, Table A5 shows Col 1 from Table A4 alongside results from the same regression with the event study time variables interacted with dummy variables for groups likely to have different barriers to job searching: those over age 35 (Col 2), completed high school (Col 3), urban residents (Col 4) and households that included a pension-eligible member during the panel (Col 5). Though none of the interaction coefficients within the first 12 months are significant, their signs and magnitudes provide some suggestive evidence that barriers to job search delay job finding, except for households with pension-eligible members which has the opposite effect. Older workers and high school graduates are slightly less likely to find employment 6 months after a household job separation (Columns 2 and 3), but substantially (though not significantly) more likely by 12 months. Urban residents are 13 percentage points more likely to find employment within 6 months. Members of households who received pension income are less likely to transition within 12 months.

Table A6 shows the same regression decomposition of Table A4 for the searching unemployed. Older workers, high school graduates and urban residents are 3.3, 19.3 and 22.6 percentage points more likely to find work in the first 6 months following a household job separation, respectively, though none of these estimates are statistically significant. Similar to the results for

discouraged workers, members of pension-eligible households are less likely to transition within 12 months.

The labor market responses of men and women are strikingly similar. Neither gender is more likely to be an added worker and both are equally likely to enter into employment from discouragement (results not shown). There is no evidence of changes in narrow labor force participation (Figure 3, Online Figure S2) or educational enrollment rates for either gender (results not shown). Employed workers may increase their work hours in response to a shock, exhibiting the added worker effect on the intensive margin and mitigating the effect we observe for non-employed household members on the extensive margin. However, neither the reported “usual” number of weekly hours worked for employed household members nor the desire for additional weekly work hours increased following a household job separation (results not shown).

## **6.1 Household Support**

The post-job-separation changes discussed above influence the relative importance of different income sources in the household. With little employment recovery post-separation, household support from salaries declines in importance and remains between 15 to 25 percentage points less likely to be the primary income source for at least 18 months (Figure 4, Table A7 Columns

1, 3, 5 and 6 correspond to Sample 1 in Figure 4). Remittances are 5 to 9 percentage points more likely to be the main income source in the 12 months after the separation (Column 3). For households that do change composition (Sample 2), remittances only increase marginally, perhaps because some migrant workers return to the household (results not shown). Pension income is about 5 percentage points more likely to be the primary source of income 6-12 months after the job separation, but this is only marginally significant. Increasing reliance on remittance and pension income over time is most likely driven by the decrease in salary income rather than any increase in the amounts of these transfers. The fraction of households with no income increases by 2.5 to 3.8 percentage points in the year after the household job separation, but this is not statistically significant. These overall effects are similar for households experiencing a job separation from employment held for at least a year (Table A7, columns 2 and 4).

Responses from the unemployed on how they support themselves shed light on the private safety net role of the household. The unemployed are statistically significantly more likely to be supported by a household resident, someone outside the household and/or savings during the first 6 months after a job separation compared to before (Figure 5, Table A8 ). Support from within the household is sustained at an average of 14 percentage points more likely for one year and support from outside the household is sustained at an average of 21 percentage points for 18 months. Unemployment insurance



is 2.8 percentage points more likely to support the unemployed for 6 months following a job separation. Savings support is 12 percentage points more likely initially, but drops off after 6 months. Initially there is no increase in pension support for the unemployed, but it rises a statistically insignificant 9 percentage points after 12 months.

Despite the reallocation of resources within the household and the support of household and family networks outside the household, there is evidence that households are worse off following a job separation. Figure 6 shows that households are 20-24 percentage points less likely to hold financial assets such as savings, stocks and life insurance policies 12-18 months after a job separation (Table A9 Col 1). They are also 16-22 percentage points more likely to report always or often having problems satisfying their food needs over the same time frame. The presence of a pension-eligible household member does not have a protective effect on food security – the coefficient is small and not significant (Table A9 Col 3). Overall, households are no more likely to reduce their household expenditure bracket following a separation (Figure 6 bottom panel, Table A9 Column 5). However, for separations from employment held for at least 12 months (Sample 2), households are 11 percentage points more likely to report reducing their household expenditures by enough to move to a lower expenditure bracket (though this is not statistically significant) (Table A9, Column 6). It is worth noting that households that reduce their expenditures by less than R500 (USD\$180; the typical bracket size) could

remain in the same bracket but be substantially worse off. Recall Figure 4 shows that there was a small increase in the number of households reporting no source of income.

Changes in household composition do not appear to drive the results presented in this study. Households are no more likely to change composition after a job separation, even among households where at least half of the members are included in the linked panel (Figure 7, Appendix Table A10.) In fact, there is a lower likelihood of composition changes for households with a job separation from a long-held job (Table A10 Cols 3-4). The trends in household formation are similar for samples with and without household controls, which demonstrates that the covariates effectively control for changes in household composition (Figure 7).

## **6.2 Robustness Checks**

Figure A1 shows that household fixed effects more effectively eliminate the pre-trend that is evident when using county by survey wave fixed effects. Results change very little when comparing the sample of households in the panel for two vs. three waves, or fully included in the panel vs. a panel inclusion rate of 50% or higher, which demonstrates that selective attrition is not driving the results. Appendix Table A11 shows that results in Figure 6 and Table A9 are similar regardless of whether using lagged household char-

acteristics, twice-lagged household characteristics or household fixed effects alone. With the inclusion of household fixed effects, time-varying controls do not alter the event study coefficients very much. Table A12 shows that the main results for all primary outcomes of interest are robust to the omission of inverse probability weighting.

Figure A2 (Table A13) compares the time path of the number of unemployed household members before and after a job separation for 6 different methods of defining a job separation. Five of the six definitions capture the job separation similarly, however, definition D undercounts the number of households post-separation because it relies on a single question asked only of currently-unemployed household members. Definitions C, E and F, which condition on at least one wave of employment prior to separation, are unable to fully account for the pre-trend.<sup>12</sup> The two definitions used for preferred specifications in the paper show the absence of a statistically significant pre-trend in the 12 months before the household job separation. These two also have similar trends in the post-separation period. Definition A conditions on at least two waves of employment prior to separation (using employment status in three consecutive waves), and definition B conditions on at least three waves of employment prior to separation (using twice-lagged employment status and tenure and current duration of unemployment).

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<sup>12</sup>Definition C uses employment status in two consecutive waves; definition E uses lagged employment status and current duration of unemployment; definition F uses lagged job tenure and current duration of unemployment.

## 7 Discussion

These results support the claim that involuntary, rather than voluntary, unemployment is the main reason for high and persistent unemployment rates, which is consistent with the findings of Natrass and Walker (2005), Kingdon and Knight (2006) and Verick (2012). The reservation wage for discouraged workers and the searching unemployed surely falls in the aftermath of a job separation, but they are no more likely to obtain employment within the first 6 months. However, there is evidence that both groups are more likely to find employment by 12 months after a job separation within the household. Non-participating workers are less likely to be added workers since they are either positively selected (enrolled in school) or negatively selected (ill-suited for employment or disinclined to be employed).

### 7.1 High costs of job search

High costs of job search in South Africa are one reason such a high fraction of employment transitions come from discouraged workers rather than the searching unemployed. The apartheid legacy of residential segregation and high transport costs make it difficult for potential added workers to escape the “local labor market” to find work in a downturn, which is one explana-

tion for why the discouraged worker effect dominates the added worker effect. The majority of Black Africans live in residential neighborhoods established under apartheid that are far from business centers and remain highly segregated (Christopher 2001, 2005). Even informal enterprises are clustered in inner-city zones, and sparser in Black African townships and informal settlement areas where there is less opportunity for economic growth (Rogerson, 1996). Transportation costs account for up to 10 percent of consumption for many South Africans due to the spatial separation of Black African neighborhoods and business centers as well as poor public transportation infrastructure (Klasen, 1997).

In addition to limiting search activities among many who desire work, high search costs also blur the distinction between searching unemployed and discouraged workers since those desiring work may only search when they can afford to. Poverty has been found to inhibit job search in South Africa (Wilson and Ramphele, 1989; Kingdon and Knight, 2006). The ability to search may reflect the availability of household resources to support the search, rather than imply that the searching worker is more determined to obtain employment (or that their unobserved qualities are better than those who are not searching). High unemployment rates necessitate a sustained search over many months. Credit constraints that may increase the size of the added worker effect in other developing countries actually dampen it in South Africa because of the inability to fund an on-going job search. Flinn

and Heckman (1983) and Gönül (1992) also found that discouraged workers were more likely to be added workers than the searching unemployed.

The analysis of heterogeneity in the event study coefficients provide some suggestive evidence that search costs pose a barrier to finding employment. Older workers, high school graduates and urban residents are likely to be better off and therefore more likely to be able to afford search costs. They are also all more likely to transition from searching unemployed to employed in the 6 months after a household job separation. Households that were ever pension-eligible are less likely to transition overall, which may be explained by the fact that pension-eligible households are worse off economically.

Among the non-searching unemployed, older workers, high school graduates, urban residents and members of pension-*ineligible* households are more likely to transition to employment, likely because they are better connected to social networks and job opportunities they can access without job searching. However, for older workers and high school graduates, employment transition is no more likely until 12 months after a household job separation, which is consistent with the fact that finding employment without searching takes time. The LFS unfortunately does not include information on social networks or on the duration, intensity or history of job search activities to investigate this further (Schöer and Leibbrandt 2006, Magruder 2010).

## 7.2 Limited role of pension income

Though there is a rich literature on the consumption smoothing effects of the pension, its role appears limited following a job separation, even for households that change composition. Though Layard, Barton and Zabalza (1980) find that unemployment insurance crowds out the added worker effect, I find that unemployed individuals are slightly *more* likely to find work after a job separation when a pension-eligible member is present. A number of studies have found that household composition responds to changes in pension income. Edmonds, Mammen and Miller (2005) and Ranchhod (2009) find that household composition shifts with the presence of a pension-eligible household member, while Hamoudi and Thomas (2014) demonstrate that individuals with lower levels of human capital tend to co-reside with pension-eligible adults. Ardington, Case and Hosegood (2009) found that the pension allows household members to migrate to find work, specifically by providing resources to support search. However, my results show that households with a pension recipient are no more likely to send migrants following a job separation (though it might be because so few are able after the negative income shock). Pension income gains importance as household financial support only one year after a job separation, perhaps after other sources of support, such as savings or remittances, have been exhausted. Migrants and family networks outside the household sustain their financial support for at least 6 months beyond internal household support after a job separation. Sending migrants when a local labor market deteriorates is one viable mechanism to

avoid the discouraged worker effect, smooth consumption and diversify risk. Some of the support from outside the household may be from pension-eligible relatives in addition to remittances of earned income, however it is not possible to distinguish between the two sources in the survey data.

### **7.3 Magnitude of the added worker effect**

As expected, the estimates of the added worker effect in South Africa are larger in the than U.S. estimates – (Spletzer (1997) for example finds an effect of 2 percentage points) – which likely reflects limited unemployment insurance and asset holdings in South Africa relative to the U.S. The estimates of a statistically significant 22.5 percentage point increase in employment among discouraged workers and an insignificant 12.4 percentage points among searching unemployed are similar to estimates from other middle-income countries: Fernandes and Felicio (2002) find a 7 percentage point increase in female labor force participation after 4 months in Brazil, Parker and Skoufias (2004) find a 13.8 percentage point increase after 15 months in Mexico and Cardona-Sosa et al. (2016) find an increase between 9-20 percentage points after 6 months in Colombia. In South Africa, high poverty rates drive potential added workers into the labor force but high unemployment rates keep them unemployed. We would therefore expect them to be more responsive to a household job separation than if they were out of the labor force. Additionally, in contrast to most studies on the added worker



effect my estimates include men, whose response may be more elastic because they have lower shadow wages for home production.

My results show that men and women are equally likely to be added workers in response to a job separation within the household. It suggests that researchers should consider added worker effects more broadly, for example, in the behavior of young adult children in the household (e.g. Cardona-Sosa et al., 2016). Added worker responses by women may be constrained by the fact that female labor force participation in South Africa is already relatively high, driven by the combined effects of migrant labor and the HIV epidemic and the resulting high rates of female-headed households. Added worker responses by men may be enabled by extended family households and relatively low employment rates among men in South Africa. These results are similar to those of Bhalotra and Umana-Aponte (2010) who find that women’s labor market attachment in Asia and Latin America responds in recessions, and more strongly in households at risk of consumption inadequacy.<sup>13</sup>

## 7.4 Limitations of the study

One limitation of this study is that some fraction of the observed household job separations are not exogenous. If a household job separation were

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<sup>13</sup>The South African context of the current paper more closely matches Asia and Latin America than eastern or western Africa.

anticipated (for example, if the employee plans to give notice or starts to experience a negative health shock), then we would expect to see an added worker adjustment before the job separation occurs, especially considering the sclerotic nature of the South African labor market. However, I find no evidence of systematic adjustments in anticipation of a household job separation. Overall, the outcomes presented in the figures and tables fulfill the parallel trend condition.

An additional concern is that like the U.S. CPS, LFS households are not followed if they leave the original dwelling place which results in attrition due to mobility. Peracchi and Welch (1993), however, find no evidence of systematic bias in the estimates of labor force transitions in the matched CPS sample. One important advantage of the LFS is that individuals remain in the sample beyond the maximum panel length of the CPS matched sample so it is possible to follow outcomes over a longer period. My finding that the results are robust to samples that appear in the panel for different numbers of waves alleviates some of the concerns around attrition.

Because the LFS data is a repeated cross-section with individuals matched across waves, it does not contain retrospective data to capture changes in employment status between waves. As such, this analysis fails to capture spells of employment or labor force participation that begin and end between survey waves and my results may therefore understate the extent of the added

worker effect.

## 8 Conclusion

This study examines how households respond to a reduction in earned household income following a job separation and sheds light on the mechanisms through which households cope in an environment of high and persistent unemployment when the public safety net is limited. One year after a job separation, employment transitions following a job separation come primarily from non-searching unemployed and not economically active household members rather than the searching unemployed. There is no increase in narrow labor force participation or desired number of work hours. As households become more reliant on savings and remittance income they are less likely to hold financial assets and more likely to report frequent food insecurity. Households appear to be worse off during the two years following a job separation, and there is no indication the household recovers thereafter.

Households are less likely to send migrants or change composition following a job separation, but do rely on remittances, presumably from migrants who have already left the household. This is one way households are able to diversify their risk when high transport and job search costs confine them to a poor local labor market. Migrant labor is unlikely to be the first-best

solution to the unemployment problem in South Africa, however. The negative impact of labor migration on HIV/AIDS and female household-headship has been well documented (see Clark et al. 2007). Credit constraints could prevent the poorest households from sending migrants at all.

Addressing structural factors in the labor market that constrain an individual's response to a household shock will enable households to limit the negative repercussions of adverse employment events. In addition, strengthening social insurance programs, and the unemployment benefit in particular, would improve the well-being of South African households who experience a job separation as well as reduce the reliance on migrant labor. These policy interventions are especially important for the poorest households that are more credit constrained and therefore have fewer avenues for mitigating the effect of negative shocks.

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## 10 Tables



Table 1: Transition matrices for men by race

Black African men		Mar 2004				
Sept 2003	NEA	Discouraged	Searching	Employed	Total	<i>N</i>
NEA	75.41	8.74	9.36	6.49	100	<i>1,840</i>
Discouraged	19.34	35.98	25.29	19.39	100	<i>661</i>
Searching	14.80	17.03	45.65	22.52	100	<i>999</i>
Employed	4.32	4.68	9.10	81.90	100	<i>2,584</i>
Total	28.29	11.40	17.12	43.19	100	<i>6,084</i>

White men		Mar 2004				
Sept 2003	NEA	Discouraged	Searching	Employed	Total	<i>N</i>
NEA	76.83	0.31	1.60	21.25	100	<i>124</i>
Discouraged	11.14	12.74	17.55	58.57	100	<i>8</i>
Searching	8.26	5.62	37.58	48.55	100	<i>26</i>
Employed	4.63	0.99	1.57	92.82	100	<i>805</i>
Total	12.61	1.13	2.39	83.88	100	<i>963</i>

Sample includes ages 16-64. All values are weighted. Value in cell is proportion of individuals in row category in September 2003 who transitioned into column category by March 2004. Transition rates are broadly representative of other waves in panel. Source: Labour Force Survey panel data, wave 8 and wave 9.

Table 2: Transition matrices for women by race

Black African women		Mar 2004				
Sept 2003	NEA	Discouraged	Searching	Employed	Total	<i>N</i>
NEA	63.31	16.24	11.75	8.70	100	<i>2,411</i>
Discouraged	24.49	38.12	25.10	12.29	100	<i>1,266</i>
Searching	20.97	21.81	42.46	14.76	100	<i>1,192</i>
Employed	10.33	6.25	10.07	73.35	100	<i>2,316</i>
Total	32.30	18.20	19.00	30.49	100	<i>7,185</i>

White women		Mar 2004				
Sept 2003	NEA	Discouraged	Searching	Employed	Total	<i>N</i>
NEA	83.44	1.86	3.79	10.91	100	<i>289</i>
Discouraged	12.81	20.00	17.36	49.83	100	<i>14</i>
Searching	43.34	14.34	28.69	13.62	100	<i>26</i>
Employed	8.85	0.75	2.34	88.05	100	<i>619</i>
Total	31.55	1.61	3.53	63.31	100	<i>948</i>

Sample includes ages 16-64. All values are weighted. Value in cell is proportion of individuals in row category in September 2003 who transitioned into column category by March 2004. Transition rates are broadly representative of other waves in panel. Source: Labour Force Survey panel data, wave 8 and wave 9.

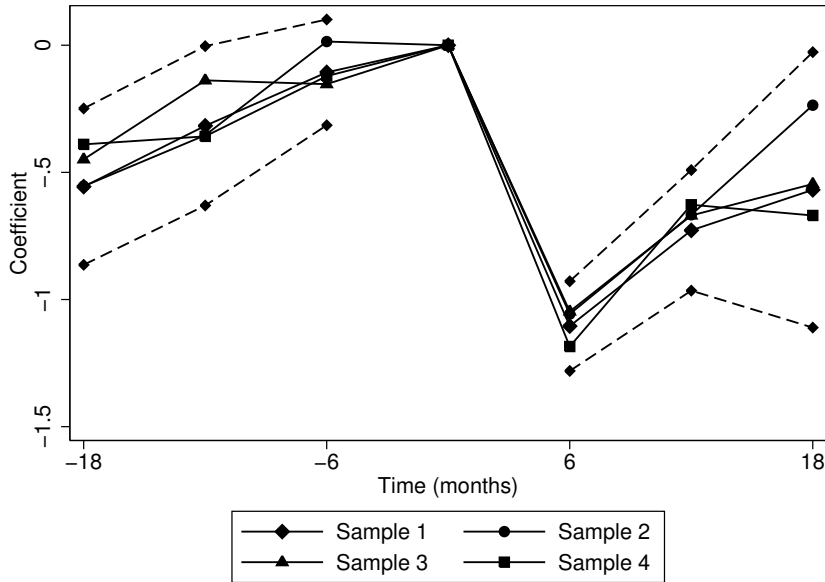
Table 3: Comparison of households that experienced a recent prime-age job separation with those that did not.

Variable	Yes Mean	No Mean	Diff.	Diff. (%)	t-statistic with controls
Job separation 6 months earlier	0.02	0.02	0.00	0.00	-0.8
Number of employed men in hhold	1.21	1.05	0.16	0.13	16.73
Number of employed women in hhold	1.21	1.04	0.17	0.14	19.06
Local unemployment rate	0.45	0.25	0.20	0.44	21.15
Pension eligible in household	0.10	0.06	0.04	0.40	1.94
Household receives child grant	0.20	0.06	0.14	0.70	6.4
Number of adults in hhold	1.62	1.35	0.27	0.17	6.94
Number of children in hhold	1.84	1.48	0.36	0.20	5.46
Age	32.55	32.85	-0.30	-0.01	-2.04
Yrs. of primary education	6.23	6.09	0.14	0.02	2.17
Yrs. of secondary education	2.41	2.33	0.08	0.03	0.41
Completed Matric (H.S.)	0.20	0.23	-0.03	-0.15	-3.98
Some post-Matric education	0.01	0.03	-0.02	-2.00	-4.84
Number of observations	1,191	39,523			

The table presents sample means, difference in means (value and %), and the t-statistic on the difference in means conditional on the other covariates included in the main regression results (see Section 4). Sample includes Black Africans ages 16-59 in households that were completely matched for at least one wave with inverse probability weights based on the regression in Table A2. All waves pooled. Specifications include full set of controls listed in table, survey wave dummies and county fixed effects. Standard errors are clustered by household.

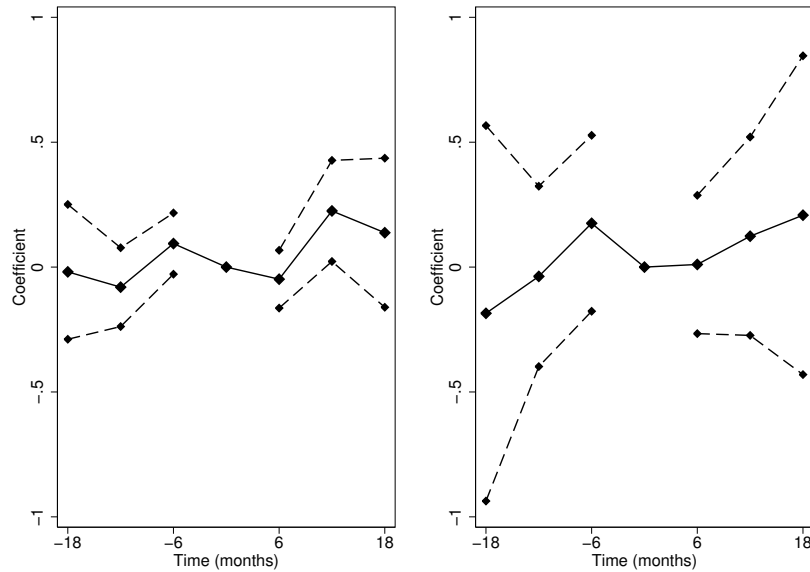
## 11 Figure Legends

Figure 1: Number of employed household members before and after a household job separation



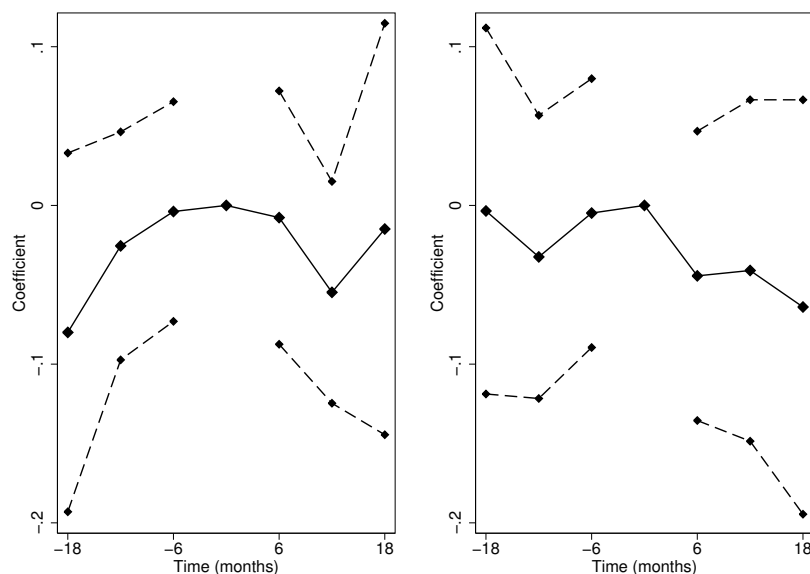
Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data; Sample 2: households with at least 50% of members included in panel; Sample 3: households with all members included in panel data and transition from employment held for  $\geq 1$  year; Sample 4: households with at least 50% of members included in panel and transition from employment held for  $\geq 1$  year. See Table A3 for coefficients.

Figure 2: Likelihood of transitioning into employment from discouragement (left panel) and searching unemployment (right panel) before and after a household job separation



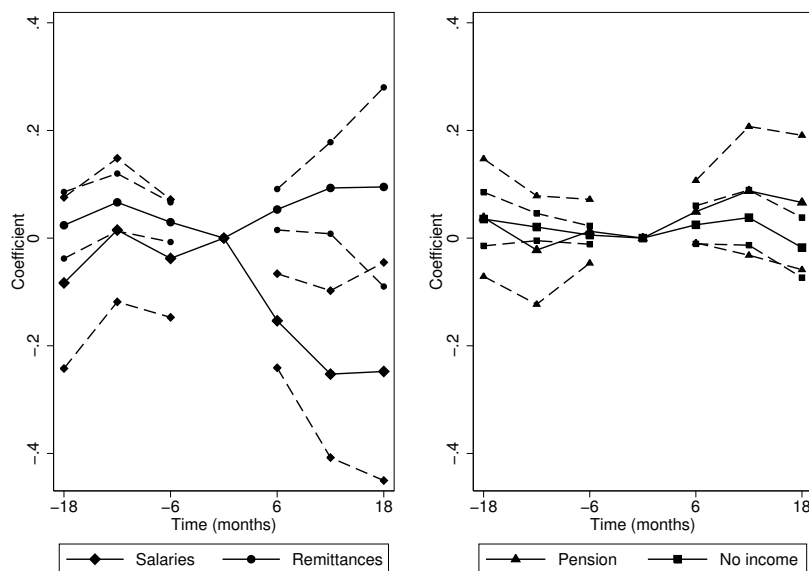
Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data. See Table A4 for coefficients.

Figure 3: Likelihood of transitioning into narrow labor force participation from NEA or broad labor force participation for men (left panel) and women (right panel) before and after a household job separation



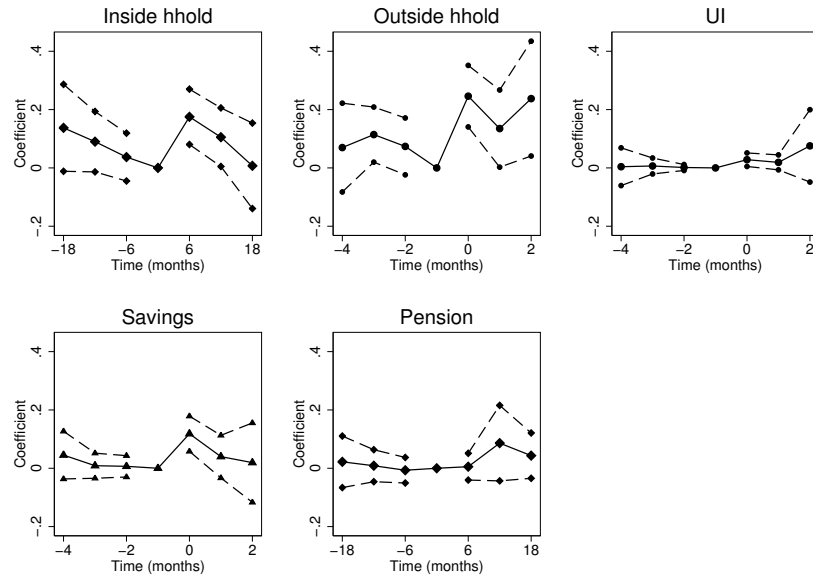
Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data. See Figure S1 for comparison of samples.

Figure 4: Main income source for the household before and after a household job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data. See Table A7 Columns 1, 3, 5 and 6 for coefficients.

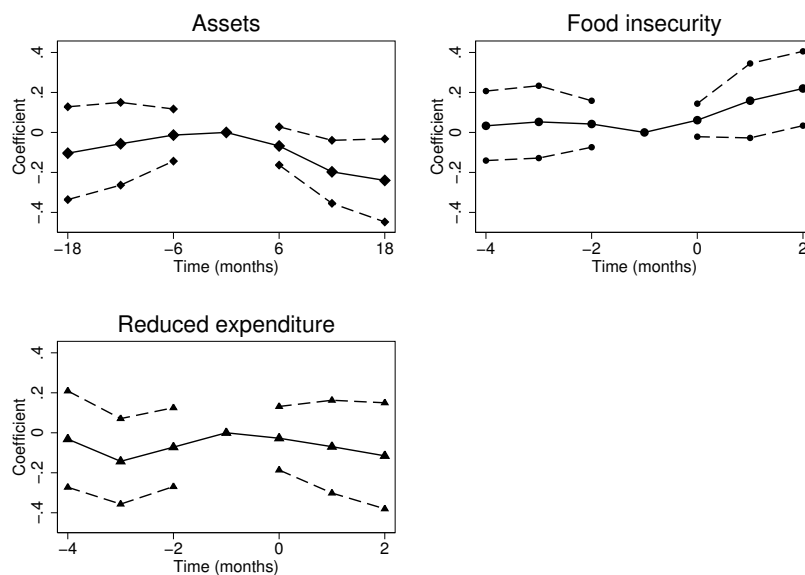
Figure 5: Source of financial support for unemployed household members before and after a household job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data. See Table A8 for coefficients.

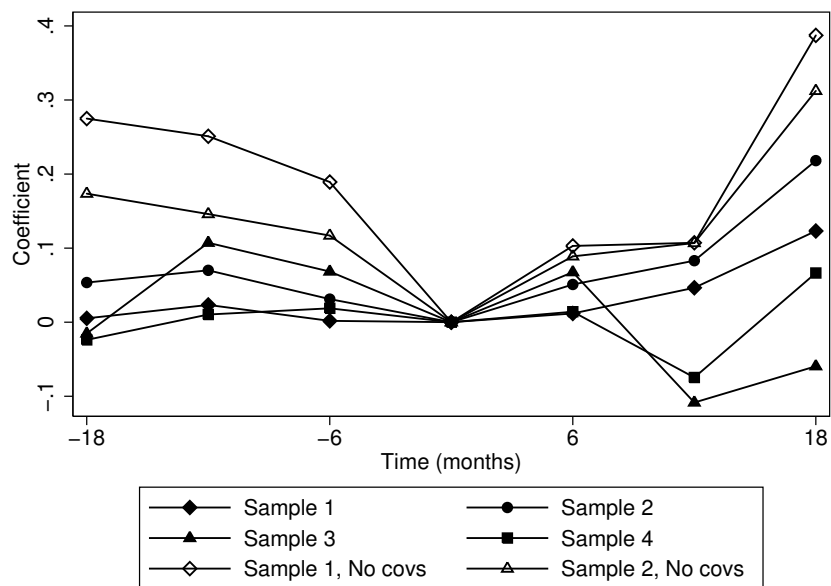


Figure 6: Measures of household well-being before and after a household job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data. See Table A9 for coefficients.

Figure 7: Likelihood of a change in household composition before and after a household job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6. Month zero equal to last period of employment before separation. No covs: Excludes covariates in  $X_{ijt}$ . Sample 1: households with all members included in panel data; Sample 2: households with at least 50% of members included in panel; Sample 3: households with all members included in panel data and transition from employment held for  $\geq 1$  year; Sample 4: households with at least 50% of members included in panel and transition from employment held for  $\geq 1$  year. See Table A10 for additional coefficients.

## 12 Appendix

Table A1: Determination of employment status based on responses to Labour Force Survey questions

Performed job activity in last 7 days?	
Yes	No
⇓	⇓
<b>Employed</b>	Temporarily absent from work?
	Yes      No
	⇓      ⇓
	<b>Employed</b> Able to start work in 1 week?
	No      Yes
	⇓      ⇓
	<b>NEA</b> Desire employment?
	No      Yes
	⇓      ⇓
	<b>NEA</b> Took steps to find work in last month?
	Yes      No
	⇓      ⇓
	<b>Unemployed</b> <b>Discouraged</b>

## 13 Appendix Figure Legends

Online appendix

Table A2: Likelihood of being included in panel data.

Variable	Men	Women
Urban	0.174*** (0.039)	0.103*** (0.038)
Years of primary school completed	0.018** (0.009)	0.015* (0.008)
Years of secondary school completed	0.051*** (0.014)	0.053*** (0.013)
Holds a matric qualification	-0.108* (0.060)	-0.074 (0.056)
Completed some post-matric education	0.264** (0.131)	0.137 (0.122)
Widowed	-0.218 (0.142)	-0.062 (0.061)
Divorced	-0.204* (0.108)	-0.149* (0.079)
Never married	-0.094** (0.044)	-0.119*** (0.037)
Age 15-19	-0.005 (0.105)	-0.050 (0.086)
Age 20-24	-0.343*** (0.106)	-0.372*** (0.085)
Age 25-29	-0.474*** (0.104)	-0.265*** (0.084)
Age 30-34	-0.457*** (0.103)	-0.243*** (0.083)
Age 35-39	-0.306*** (0.102)	-0.089 (0.083)
Age 40-44	-0.171* (0.102)	-0.042 (0.084)
Age 45-49	-0.107 (0.105)	0.048 (0.085)
Age 50-54	-0.044 (0.109)	0.059 (0.088)
Age 55-59	-0.132 (0.114)	0.113 (0.096)
Constant	0.102 (0.136)	0.006 (0.118)
Observations	22,922	26,279

Samples include Black Africans ages 16-59. Wave 4 only; representative of results from other survey waves. Magisterial district dummies included.  
\*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A3: Event study point estimates for number of employed household members before and after a household job separation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-0.885** (0.383)	-1.078*** (0.367)	-1.001*** (0.291)	-0.516* (0.266)	-0.043 (0.201)	0.616** (0.242)
-18 months	-0.556*** (0.157)	-0.555*** (0.119)	-0.449* (0.243)	-0.390 (0.252)	0.257** (0.112)	0.557 (0.425)
-12 months	-0.317** (0.160)	-0.354*** (0.115)	-0.138 (0.211)	-0.358* (0.184)	0.417*** (0.093)	0.261 (0.170)
-6 months	-0.107 (0.106)	0.014 (0.079)	-0.153 (0.150)	-0.121 (0.109)	0.732*** (0.056)	0.422*** (0.107)
6 months	-1.105*** (0.090)	-1.057*** (0.060)	-1.047*** (0.178)	-1.185*** (0.137)	-0.281*** (0.074)	-0.391*** (0.079)
12 months	-0.728*** (0.121)	-0.667*** (0.084)	-0.670** (0.277)	-0.627*** (0.182)	0.073 (0.103)	-0.074 (0.142)
18 months	-0.569** (0.276)	-0.236 (0.367)	-0.546* (0.279)	-0.670*** (0.218)	0.035 (0.139)	-0.031 (0.191)
24 months	0.300 (0.602)	-0.322 (0.256)	0.796 (0.731)	0.418 (0.544)	1.022** (0.430)	1.568*** (0.493)
Num. adults	0.107*** (0.031)	0.121*** (0.018)	0.099*** (0.032)	0.123*** (0.018)	0.101*** (0.009)	0.107*** (0.009)
Pension-eligible member	0.028 (0.043)	-0.030 (0.028)	0.018 (0.042)	-0.032 (0.030)	-0.232*** (0.027)	-0.234*** (0.027)
Lagged local unemployment	0.035 (0.035)	0.086*** (0.030)	0.039 (0.036)	0.083*** (0.030)	0.110*** (0.028)	0.104*** (0.028)
Child grant received	0.009 (0.040)	-0.022 (0.030)	-0.008 (0.041)	-0.027 (0.032)	-0.101*** (0.028)	-0.103*** (0.028)
High school completion	0.066* (0.036)	0.073** (0.029)	0.067* (0.039)	0.082*** (0.031)	0.311*** (0.022)	0.314*** (0.022)
Constant	0.780*** (0.046)	0.759*** (0.036)	0.790*** (0.049)	0.750*** (0.037)	0.701*** (0.014)	0.706*** (0.014)
N	40,487	68,708	40,568	68,841	40,487	40,568
$R^2$	0.79	0.67	0.78	0.66	0.29	0.28
Fixed effects	Y	Y	Y	Y	N	N
Sample	1	4	1	4	1	4
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	6 mo.	12 mo.	12 mo.	6 mo.	12 mo.
Household panel inclusion	100%	≥50%	100%	≥50%	100%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A4: Event study point estimates for likelihood of transitioning into employment from NEA or discouragement (Cols 1-3) and searching unemployment (Cols 4-6) before and after a household job separation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
-18 months	-0.019 (0.138)	0.090 (0.119)	0.096 (0.270)	-0.185 (0.383)	0.387 (0.362)	-0.188 (0.771)
-12 months	-0.080 (0.080)	0.036 (0.060)	-0.035 (0.167)	-0.037 (0.184)	0.139 (0.136)	-0.381 (0.413)
-6 months	0.094 (0.063)	0.159*** (0.055)	-0.028 (0.103)	0.175 (0.180)	0.328*** (0.125)	-0.177 (0.269)
6 months	-0.048 (0.059)	-0.026 (0.043)	-0.023 (0.139)	0.010 (0.141)	0.052 (0.073)	-0.094 (0.432)
12 months	0.225** (0.103)	0.287*** (0.072)	0.043 (0.163)	0.124 (0.203)	0.308*** (0.110)	-0.180 (0.350)
18 months	0.138 (0.152)	0.117 (0.072)	-0.072 (0.137)	0.208 (0.326)	0.254 (0.159)	-0.061 (0.283)
24 months	0.516** (0.215)	0.230* (0.138)	0.516** (0.209)	0.554* (0.306)	0.386* (0.221)	0.347* (0.187)
Num. adults	0.022 (0.015)	0.017*** (0.006)	0.022 (0.015)	0.008 (0.049)	0.031* (0.017)	0.004 (0.049)
Pension-eligible member	0.040* (0.024)	0.008 (0.016)	0.040* (0.023)	0.011 (0.151)	-0.045 (0.048)	0.013 (0.141)
Lagged local unemployment	0.263*** (0.020)	0.296*** (0.014)	0.261*** (0.020)	0.016 (0.158)	0.078 (0.080)	0.017 (0.156)
Child grant received	-0.001 (0.027)	-0.010 (0.016)	-0.001 (0.026)	-0.068 (0.072)	-0.013 (0.036)	-0.069 (0.072)
High school completion	0.021 (0.029)	0.022 (0.016)	0.020 (0.030)	0.015 (0.099)	-0.011 (0.054)	0.011 (0.099)
Constant	-0.010 (0.024)	-0.013 (0.016)	-0.011 (0.026)	0.246* (0.139)	0.088 (0.063)	0.260* (0.141)
N	33,341	57,760	33,405	9,533	17,736	9,566
$R^2$	0.55	0.44	0.54	0.75	0.66	0.75
Sample	1	4	1	1	4	1
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	6 mo.	12 mo.	6 mo.	6 mo.	12 mo.
Household panel inclusion	100%	≥50%	100%	100%	≥50%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A5: Event study point estimates for likelihood of transitioning into employment from NEA or discouragement with sub-group interactions before and after a household job separation

Variable	(1)	>35 (2)	HS compl. (3)	Urban (4)	Pens elig. (5)
-18 months	-0.019 (0.138)	-0.155 (0.124)	0.091 (0.141)	-0.001 (0.225)	0.015 (0.158)
-12 months	-0.080 (0.080)	0.038 (0.081)	-0.059 (0.079)	-0.102 (0.091)	-0.058 (0.088)
-6 months	0.094 (0.063)	0.128** (0.061)	0.084 (0.063)	0.063 (0.071)	0.075 (0.063)
6 months	-0.048 (0.059)	-0.017 (0.045)	-0.040 (0.056)	-0.089 (0.061)	-0.029 (0.062)
12 months	0.225** (0.103)	0.111 (0.126)	0.208* (0.116)	0.162 (0.104)	0.264** (0.109)
18 months	0.138 (0.152)	0.155 (0.186)	0.170 (0.162)	-0.109 (0.125)	0.180 (0.154)
24 months	0.516** (0.215)	0.576*** (0.209)	0.564*** (0.202)	0.414 (0.296)	0.426* (0.249)
-18 months X subgroup		0.339 (0.234)	-0.456 (0.293)	-0.013 (0.277)	-0.189 (0.248)
-12 months X subgroup		-0.280* (0.161)	-0.080 (0.281)	0.080 (0.184)	-0.060 (0.213)
-6 months X subgroup		-0.098 (0.147)	0.059 (0.222)	0.106 (0.140)	0.393* (0.217)
6 months X subgroup		-0.094 (0.160)	-0.054 (0.264)	0.132 (0.148)	-0.252 (0.192)
12 months X subgroup		0.210 (0.223)	0.089 (0.231)	0.183 (0.229)	-0.457 (0.293)
18 months X subgroup		-0.063 (0.319)	-0.194 (0.424)	0.529* (0.274)	-0.630 (0.439)
24 months X subgroup		-0.213 (0.432)	-0.786*** (0.265)	0.410 (0.447)	-0.004 (0.345)
N	33,341	33,341	33,341	33,341	33,341
R <sup>2</sup>	0.55	0.55	0.55	0.55	0.55

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses for observations in at least 2 panel waves, with at least 6 months of employment before job separation, with 100% panel inclusion rates. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A6: Event study point estimates for likelihood of transitioning into employment from searching unemployment with sub-group interactions before and after a household job separation

Variable	(1)	>35 (2)	HS compl. (3)	Urban (4)	Pens elig. (5)
-18 months	-0.185 (0.383)	-0.404 (0.297)	-0.165 (0.421)	-0.385 (0.333)	0.007 (0.461)
-12 months	-0.037 (0.184)	-0.114 (0.181)	-0.065 (0.195)	-0.144 (0.166)	0.010 (0.217)
-6 months	0.175 (0.180)	0.248 (0.216)	0.126 (0.175)	0.043 (0.181)	0.151 (0.184)
6 months	0.010 (0.141)	0.000 (0.145)	-0.024 (0.132)	-0.088 (0.132)	0.030 (0.150)
12 months	0.124 (0.203)	0.052 (0.272)	0.113 (0.256)	-0.011 (0.207)	0.151 (0.211)
18 months	0.208 (0.326)	0.226 (0.336)	0.267 (0.371)	-0.142 (0.291)	0.211 (0.338)
24 months	0.554* (0.306)	0.521*** (0.202)	0.666** (0.328)	0.432*** (0.144)	0.574 (0.776)
-18 months X subgroup		0.780 (0.705)	-0.337 (0.515)	0.436 (0.724)	-0.358 (0.515)
-12 months X subgroup		0.506 (0.499)	0.169 (0.556)	0.289 (0.432)	0.067 (0.374)
-6 months X subgroup		-0.236 (0.371)	0.239 (0.510)	0.349 (0.407)	0.467 (0.435)
6 months X subgroup		0.033 (0.391)	0.193 (0.459)	0.226 (0.305)	-0.225 (0.467)
12 months X subgroup		0.186 (0.386)	0.082 (0.354)	0.313 (0.409)	-0.336 (0.666)
18 months X subgroup		-0.103 (0.782)	-0.238 (0.769)	0.657 (0.572)	0.144 (0.625)
24 months X subgroup		0.062 (1.078)	-1.529*** (0.404)	0.433 (0.943)	-0.192 (0.847)
Constant	0.246* (0.139)	0.245* (0.139)	0.250* (0.140)	0.241* (0.139)	0.243* (0.141)
N	9,533	9,533	9,533	9,533	9,533
R <sup>2</sup>	0.75	0.75	0.75	0.75	0.75

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses for observations in at least 2 panel waves, with at least 6 months of employment before job separation, with 100% panel inclusion rates. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.



Table A7: Event study point estimates for main income source for the household before and after a household job separation

Outcome: Variable	Wages		Remittances		Pension	No inc.
	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-0.058 (0.156)	-0.155** (0.066)	0.023 (0.089)	0.059** (0.026)	0.086 (0.133)	0.057 (0.047)
-18 months	-0.083 (0.081)	-0.213** (0.090)	0.024 (0.032)	0.079*** (0.029)	0.038 (0.056)	0.035 (0.025)
-12 months	0.015 (0.068)	-0.205*** (0.070)	0.066** (0.027)	0.075** (0.037)	-0.022 (0.051)	0.021 (0.013)
-6 months	-0.038 (0.056)	-0.128** (0.062)	0.030 (0.019)	0.025 (0.022)	0.013 (0.030)	0.006 (0.009)
6 months	-0.154*** (0.045)	-0.291*** (0.093)	0.053*** (0.019)	0.078* (0.045)	0.049* (0.030)	0.025 (0.018)
12 months	-0.253*** (0.079)	-0.388*** (0.118)	0.093** (0.043)	0.083 (0.058)	0.088 (0.061)	0.038 (0.026)
18 months	-0.248** (0.103)	-0.339** (0.165)	0.095 (0.094)	0.050 (0.092)	0.066 (0.064)	-0.018 (0.028)
24 months	-0.291 (0.210)	-0.517* (0.272)	-0.028 (0.071)	0.029 (0.028)	0.143 (0.172)	0.049 (0.041)
Num. adults	-0.000 (0.012)	-0.002 (0.012)	0.003 (0.008)	0.003 (0.008)	0.005 (0.008)	0.003 (0.006)
Pension-eligible member	-0.032 (0.024)	-0.032 (0.023)	-0.026** (0.011)	-0.024** (0.011)	0.126*** (0.020)	-0.007 (0.005)
Lagged local unemployment	0.266*** (0.019)	0.266*** (0.019)	0.095*** (0.014)	0.093*** (0.014)	0.064*** (0.013)	0.017** (0.007)
Child grant received	-0.050*** (0.017)	-0.054*** (0.017)	-0.007 (0.013)	-0.006 (0.013)	0.044*** (0.015)	-0.008 (0.006)
High school completion	0.009 (0.024)	0.009 (0.025)	0.005 (0.016)	0.005 (0.016)	-0.008 (0.013)	-0.002 (0.010)
Constant	0.528*** (0.020)	0.533*** (0.020)	0.145*** (0.014)	0.146*** (0.013)	0.147*** (0.013)	0.020** (0.009)
N	40,487	40,568	40,487	40,568	40,487	40,487
$R^2$	0.81	0.81	0.79	0.79	0.84	0.68
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	12 mo.	6 mo.	12 mo.	6 mo.	6 mo.
Household panel inclusion	100%	100%	100%	100%	100%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A8: Event study point estimates source of financial support for unemployed household members before and after a household job separation

Outcome: Variable	Inside (1)	Outside (2)	UI (3)	Savings (4)	Pension (5)	Pension (6)
-24 months	0.063 (0.120)	0.160 (0.183)	-0.019 (0.023)	0.031 (0.048)	-0.034 (0.063)	-0.012 (0.034)
-18 months	0.137* (0.076)	0.070 (0.078)	0.004 (0.033)	0.045 (0.042)	0.022 (0.045)	0.045 (0.032)
-12 months	0.090* (0.053)	0.114** (0.048)	0.007 (0.014)	0.009 (0.022)	0.009 (0.028)	0.017 (0.025)
-6 months	0.037 (0.042)	0.074 (0.050)	0.001 (0.005)	0.007 (0.019)	-0.007 (0.022)	0.018 (0.017)
6 months	0.175*** (0.048)	0.246*** (0.054)	0.028** (0.012)	0.118*** (0.031)	0.005 (0.023)	0.010 (0.017)
12 months	0.105** (0.051)	0.135** (0.067)	0.019 (0.013)	0.040 (0.037)	0.086 (0.066)	0.046 (0.036)
18 months	0.007 (0.075)	0.238** (0.100)	0.076 (0.063)	0.019 (0.069)	0.043 (0.040)	0.066 (0.061)
24 months	-0.139 (0.280)	0.089 (0.081)	0.020** (0.009)	0.014 (0.038)	-0.036 (0.046)	-0.030 (0.048)
Num. adults	0.162*** (0.014)	-0.013 (0.014)	-0.003 (0.003)	-0.008 (0.006)	0.037*** (0.011)	0.023*** (0.005)
Pension-eligible member	-0.006 (0.015)	0.010 (0.026)	0.004 (0.005)	-0.019** (0.009)	0.022 (0.020)	0.035*** (0.013)
Lagged local unemployment	-0.017 (0.017)	0.038* (0.020)	0.003 (0.005)	-0.007 (0.011)	-0.017 (0.012)	-0.011 (0.009)
Child grant received	0.015 (0.018)	-0.002 (0.023)	0.004 (0.005)	0.011 (0.012)	0.022 (0.019)	0.011 (0.011)
High school completion	-0.018 (0.019)	-0.023 (0.023)	-0.011 (0.007)	-0.005 (0.011)	-0.019* (0.011)	-0.039*** (0.011)
Constant	0.452*** (0.021)	0.273*** (0.023)	0.019*** (0.005)	0.039*** (0.010)	0.029* (0.016)	0.061*** (0.011)
N	40,487	40,487	40,487	40,487	40,487	68,708
$R^2$	0.79	0.73	0.49	0.55	0.79	0.68
Sample	1	1	1	1	1	4
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	6 mo.	6 mo.	6 mo.	6 mo.	6 mo.
Household panel inclusion	100%	100%	100%	100%	100%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A9: Event study point estimates for measures of household well-being before and after a household job separation

Outcome: Variable	Assets		Food Insecurity		Reduced exp.	
	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-0.323 (0.222)	-0.250 (0.222)	-0.039 (0.202)	0.185 (0.238)		
-18 months	-0.104 (0.118)	-0.181 (0.154)	0.033 (0.089)	0.174 (0.183)	-0.032 (0.123)	0.117 (0.345)
-12 months	-0.057 (0.106)	-0.151 (0.135)	0.053 (0.092)	-0.116 (0.186)	-0.143 (0.109)	0.118 (0.287)
-6 months	-0.013 (0.067)	-0.040 (0.063)	0.042 (0.059)	-0.043 (0.105)	-0.072 (0.101)	0.001 (0.144)
6 months	-0.068 (0.049)	-0.031 (0.083)	0.061 (0.042)	0.021 (0.066)	-0.027 (0.081)	0.109 (0.153)
12 months	-0.197** (0.080)	-0.079 (0.133)	0.159* (0.095)	-0.034 (0.152)	-0.069 (0.118)	0.044 (0.136)
18 months	-0.240** (0.106)	0.005 (0.173)	0.220** (0.095)	-0.083 (0.140)	-0.115 (0.135)	0.007 (0.254)
24 months	0.321* (0.185)	0.370** (0.171)	0.178 (0.260)	-0.104 (0.301)	-0.131 (0.169)	-0.184** (0.087)
Num. adults	-0.008 (0.015)	-0.011 (0.015)	-0.000 (0.014)	-0.000 (0.014)	-0.061 (0.050)	-0.063 (0.051)
Pension-eligible member	-0.008 (0.022)	-0.009 (0.022)	0.017 (0.023)	0.016 (0.024)	-0.004 (0.115)	-0.008 (0.112)
Lagged local unemployment	-0.011 (0.023)	-0.009 (0.024)	0.222*** (0.021)	0.221*** (0.021)	-0.037 (0.071)	-0.041 (0.071)
Child grant received	0.044** (0.020)	0.043** (0.020)	-0.002 (0.020)	-0.004 (0.020)	0.005 (0.046)	0.013 (0.045)
High school completion	0.030 (0.032)	0.032 (0.032)	0.005 (0.030)	0.005 (0.030)	0.012 (0.043)	0.013 (0.044)
Constant	0.492*** (0.026)	0.497*** (0.026)	0.450*** (0.024)	0.451*** (0.024)	0.121 (0.084)	0.120 (0.083)
N	36,738	36,816	40,487	40,568	15,091	15,135
$R^2$	0.80	0.80	0.74	0.74	0.68	0.68
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	12 mo.	6 mo.	12 mo.	6 mo.	12 mo.
Household panel inclusion	100%	100%	100%	100%	100%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A10: Event study point estimates for likelihood of a change in household composition before and after a household job separation

Variable	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-0.031 (0.087)	-0.090 (0.127)	0.052 (0.142)	-0.070 (0.128)	-0.030 (0.090)	-0.036 (0.119)
-18 months	-0.017 (0.076)	0.017 (0.049)	-0.029 (0.100)	-0.033 (0.144)	0.005 (0.080)	0.054 (0.046)
-12 months	0.024 (0.053)	0.057 (0.044)	0.134 (0.126)	0.016 (0.090)	0.023 (0.051)	0.070* (0.040)
-6 months	0.003 (0.043)	0.030 (0.032)	0.070 (0.074)	0.066 (0.053)	0.002 (0.042)	0.031 (0.030)
6 months	-0.010 (0.049)	0.036 (0.033)	0.073 (0.111)	0.007 (0.054)	0.012 (0.050)	0.051* (0.030)
12 months	0.048 (0.071)	0.090* (0.050)	-0.109* (0.065)	-0.083 (0.070)	0.046 (0.074)	0.083* (0.047)
18 months	0.132* (0.078)	0.217*** (0.053)	-0.042 (0.134)	0.081 (0.103)	0.123 (0.077)	0.218*** (0.051)
24 months	0.530** (0.230)	0.240*** (0.085)	0.665*** (0.229)	0.280 (0.195)	0.550** (0.244)	0.239*** (0.078)
Num. adults	0.052*** (0.018)	0.051*** (0.006)	0.052*** (0.018)	0.051*** (0.006)	0.062*** (0.014)	0.032*** (0.004)
Pension-eligible member	0.105*** (0.027)	0.135*** (0.012)	0.105*** (0.028)	0.133*** (0.012)	0.098*** (0.023)	0.137*** (0.010)
Lagged local unemployment	-1.390*** (0.022)	-0.777*** (0.017)	-1.392*** (0.022)	-0.778*** (0.017)	-1.469*** (0.018)	-0.750*** (0.013)
Child grant received	0.047* (0.025)	0.055*** (0.015)	0.046* (0.025)	0.055*** (0.015)	0.040* (0.022)	0.050*** (0.013)
High school completion	0.013 (0.026)	0.009 (0.019)	0.010 (0.026)	0.006 (0.019)	-0.002 (0.023)	0.003 (0.015)
Constant	0.960*** (0.028)	0.917*** (0.013)	0.957*** (0.029)	0.918*** (0.012)	0.962*** (0.022)	0.933*** (0.009)
N	26,927	44,463	27,002	44,585	40,487	68,708
$R^2$	0.74	0.59	0.74	0.59	0.76	0.57
Sample	1	4	1	4	1	4
Min. waves in panel	3	3	3	3	2	2
Length of empl.	6 mo.	6 mo.	12 mo.	12 mo.	6 mo.	6 mo.
Household panel inclusion	100%	≥50%	100%	≥50%	100%	≥50%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A11: Event study point estimates for measures of household well-being before and after a household job separation with twice-lagged covariates

Outcome: Variable	Assets		Food Insecurity		Reduced exp.	
	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-0.326 (0.222)	-0.256 (0.222)	-0.055 (0.205)	0.171 (0.236)		
-18 months	-0.107 (0.117)	-0.190 (0.153)	-0.010 (0.091)	0.161 (0.183)	-0.023 (0.120)	0.122 (0.346)
-12 months	-0.058 (0.105)	-0.155 (0.135)	0.014 (0.091)	-0.131 (0.180)	-0.148 (0.107)	0.122 (0.285)
-6 months	-0.014 (0.066)	-0.042 (0.062)	0.010 (0.058)	-0.069 (0.102)	-0.077 (0.100)	0.003 (0.141)
6 months	-0.072 (0.049)	-0.034 (0.084)	0.057 (0.042)	0.012 (0.065)	-0.024 (0.081)	0.111 (0.151)
12 months	-0.199** (0.080)	-0.078 (0.134)	0.158* (0.095)	-0.043 (0.154)	-0.070 (0.119)	0.043 (0.135)
18 months	-0.248*** (0.104)	0.009 (0.171)	0.196** (0.094)	-0.118 (0.144)	-0.113 (0.136)	0.003 (0.252)
24 months	0.315* (0.180)	0.370** (0.168)	0.117 (0.294)	-0.202 (0.335)	-0.138 (0.168)	-0.190** (0.089)
Num. adults	-0.007 (0.015)	-0.011 (0.015)	-0.002 (0.014)	-0.002 (0.014)	-0.061 (0.050)	-0.063 (0.051)
Pension-eligible member	0.011 (0.032)	0.015 (0.032)	-0.007 (0.030)	-0.008 (0.031)	0.004 (0.041)	0.004 (0.041)
Lagged local unemployment	0.014 (0.027)	0.009 (0.027)	-0.045* (0.027)	-0.041 (0.027)	-0.061 (0.052)	-0.058 (0.051)
Child grant received	0.065 (0.044)	0.061 (0.044)	-0.075* (0.044)	-0.072* (0.043)	-0.018 (0.049)	-0.015 (0.048)
High school completion	0.030 (0.032)	0.033 (0.032)	0.013 (0.030)	0.013 (0.030)	0.014 (0.044)	0.015 (0.044)
Constant	0.495*** (0.026)	0.499*** (0.026)	0.425*** (0.024)	0.424*** (0.024)	0.133 (0.083)	0.130 (0.084)
N	36,738	36,816	40,487	40,568	15,091	15,135
$R^2$	0.80	0.80	0.73	0.73	0.68	0.68
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	12 mo.	6 mo.	12 mo.	6 mo.	12 mo.
Household panel inclusion	100%	100%	100%	100%	100%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A12: Event study point estimates for main results without inverse probability weighting to adjust for attrition.

Outcome : Variable	Num. empl. (1)	Trans. to empl. (2) (3)		Assets (4)	Food Ins. (5)	Red. Exp. (6)
-24 months	-1.064*** (0.385)			-0.184 (0.248)	-0.178 (0.222)	
-18 months	-0.532*** (0.169)	-0.219 (0.321)	-0.023 (0.117)	-0.065 (0.119)	0.007 (0.084)	-0.049 (0.122)
-12 months	-0.281* (0.152)	-0.030 (0.188)	-0.023 (0.082)	-0.061 (0.101)	0.013 (0.090)	-0.164 (0.108)
-6 months	-0.117 (0.101)	0.184 (0.161)	0.093* (0.056)	-0.027 (0.065)	0.017 (0.058)	-0.081 (0.103)
6 months	-1.129*** (0.088)	0.001 (0.127)	-0.046 (0.053)	-0.057 (0.049)	0.048 (0.047)	-0.046 (0.084)
12 months	-0.726*** (0.122)	0.126 (0.214)	0.252** (0.105)	-0.170** (0.082)	0.120 (0.089)	-0.065 (0.131)
18 months	-0.726*** (0.278)	0.178 (0.316)	0.071 (0.141)	-0.223** (0.104)	0.169* (0.097)	-0.119 (0.134)
24 months	0.087 (0.542)	0.474 (0.340)	0.436* (0.256)	0.353* (0.197)	0.134 (0.330)	-0.187 (0.136)
Num. adults	0.079*** (0.028)	0.013 (0.050)	0.020 (0.016)	-0.004 (0.016)	0.003 (0.015)	-0.063 (0.045)
Pension-eligible member	0.009 (0.039)	0.015 (0.133)	0.031 (0.024)	-0.020 (0.021)	0.019 (0.022)	0.029 (0.105)
Lagged local unemployment	0.054 (0.038)	0.040 (0.180)	0.266*** (0.023)	-0.000 (0.026)	0.254*** (0.024)	-0.044 (0.073)
Child grant received	0.028 (0.040)	-0.035 (0.071)	0.013 (0.029)	0.046** (0.019)	-0.009 (0.023)	-0.001 (0.046)
High school completion	0.087* (0.047)	0.010 (0.138)	0.036 (0.037)	0.029 (0.042)	-0.009 (0.038)	0.012 (0.058)
Constant	0.801*** (0.045)	0.221 (0.142)	-0.005 (0.027)	0.497*** (0.028)	0.473*** (0.025)	0.127 (0.081)
N	38,850	9,012	32,075	35,235	38,850	14,793
$R^2$	0.79	0.75	0.55	0.79	0.74	0.68
Min. waves in panel	2	2	2	2	2	2
Length of empl.	6 mo.	6 mo.	6 mo.	6 mo.	6 mo.	6 mo.
Household panel inclusion	100%	100%	100%	100%	100%	100%

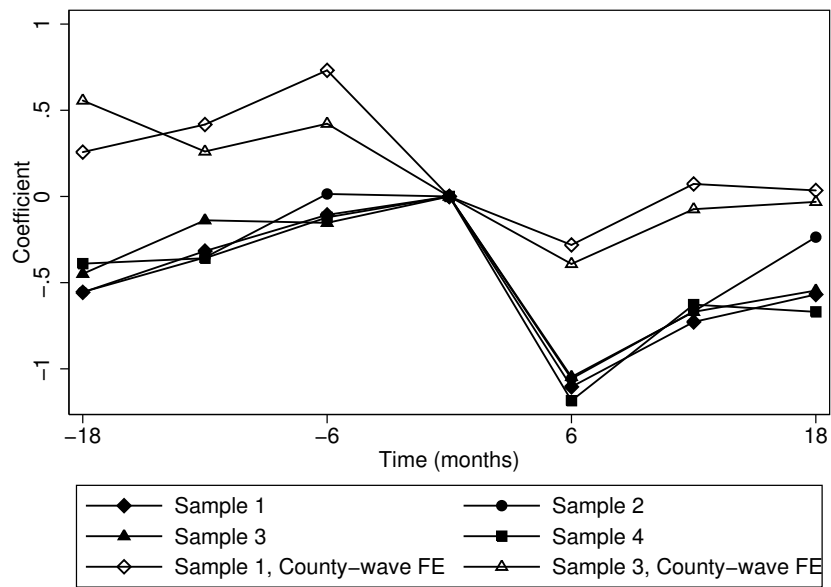
Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

Table A13: Event study point estimates for number of employed household members before and after a household job separation using 6 methods of defining a job separation

Variable	Defn. A (1)	Defn. B (2)	Defn. C (3)	Defn. D (4)	Defn. E (5)	Defn. F (6)
-24 months	-0.885** (0.383)	-1.001*** (0.291)	-0.690*** (0.136)	-0.263 (0.203)	-1.117*** (0.296)	-1.268*** (0.307)
-18 months	-0.556*** (0.157)	-0.449* (0.243)	-0.688*** (0.174)	-0.033 (0.132)	-0.798*** (0.170)	-0.821*** (0.230)
-12 months	-0.317** (0.160)	-0.138 (0.211)	-0.692*** (0.086)	-0.038 (0.090)	-0.471*** (0.140)	-0.411** (0.172)
-6 months	-0.107 (0.106)	-0.153 (0.150)	-0.685*** (0.057)	0.066 (0.077)	-0.370*** (0.104)	-0.275** (0.115)
6 months	-1.105*** (0.090)	-1.047*** (0.178)	-1.132*** (0.046)	-0.367*** (0.063)	-0.990*** (0.075)	-1.073*** (0.081)
12 months	-0.728*** (0.121)	-0.670** (0.277)	-0.818*** (0.065)	-0.186** (0.092)	-0.666*** (0.115)	-0.674*** (0.127)
18 months	-0.569** (0.276)	-0.546* (0.279)	-0.620*** (0.092)	-0.249* (0.141)	-0.878*** (0.206)	-0.819*** (0.256)
24 months	0.300 (0.602)	0.796 (0.731)	-0.368* (0.198)	-0.080 (0.162)	-0.296 (0.386)	-0.562 (0.441)
30 months			-0.661*** (0.218)	0.004 (0.279)	-0.496 (0.501)	-0.168 (0.186)
Num. adults	0.107*** (0.031)	0.099*** (0.032)	0.099*** (0.027)	0.108*** (0.032)	0.099*** (0.031)	0.099*** (0.031)
Pension-eligible member	0.028 (0.043)	0.018 (0.042)	0.003 (0.034)	0.019 (0.042)	0.018 (0.042)	0.020 (0.042)
Lagged local unemployment	0.035 (0.035)	0.039 (0.036)	0.121*** (0.031)	0.043 (0.036)	0.055 (0.036)	0.050 (0.036)
Child grant received	0.009 (0.040)	-0.008 (0.041)	0.022 (0.035)	0.012 (0.042)	0.003 (0.040)	-0.010 (0.041)
High school completion	0.066* (0.036)	0.067* (0.039)	0.067** (0.034)	0.068* (0.039)	0.065* (0.038)	0.067* (0.038)
Constant	0.780*** (0.046)	0.790*** (0.049)	0.826*** (0.041)	0.774*** (0.049)	0.795*** (0.047)	0.789*** (0.047)
N	40,487	40,568	39,678	39,973	40,512	40,551
R <sup>2</sup>	0.79	0.78	0.83	0.78	0.78	0.78
Min. waves in panel	2	2	2	2	2	2
Household panel inclusion	100%	100%	100%	100%	100%	100%

Notes: Event study point estimates ( $\gamma_k$ ) from Equation 6 with 95% CIs clustered by household in parentheses. Month zero equal to last period of employment before separation. Samples include Black Africans ages 16-59. All waves pooled. Specifications also include additional controls noted in text. Columns 1-4 include household fixed effects, Columns 5-6 include county fixed effects. \*\*\* - Significant at the 1% level, \*\* - 5% level, \* - 10% level.

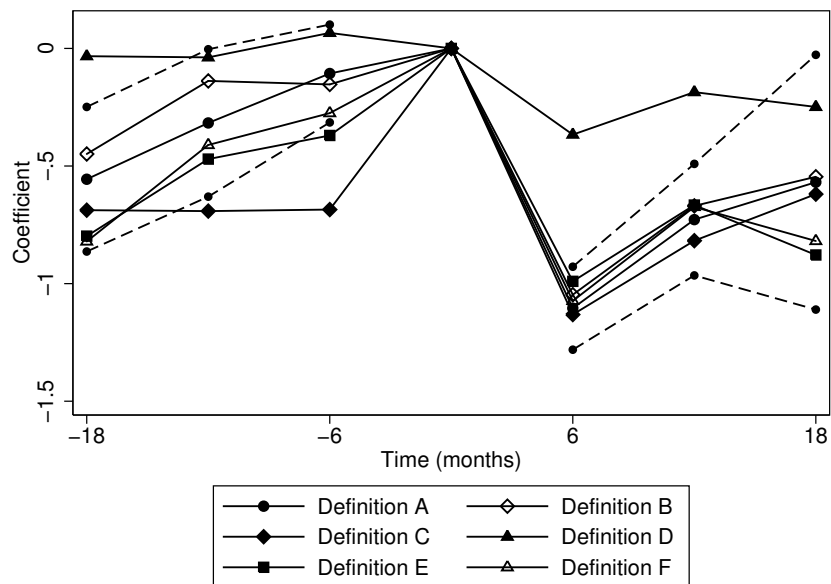
Figure A1: Number of employed household members before and after a household job separation comparing household fixed effects to county-by-survey wave fixed effects.



Notes: Plot of  $\gamma_k$  coefficients from Equation 6. Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data; Sample 2: households with at least 50% of members included in panel; Sample 3: households with all members included in panel data and transition from employment held for  $\geq 1$  year; Sample 4: households with at least 50% of members included in panel and transition from employment held for  $\geq 1$  year. Specifications include household fixed effects unless otherwise indicated in the legend.



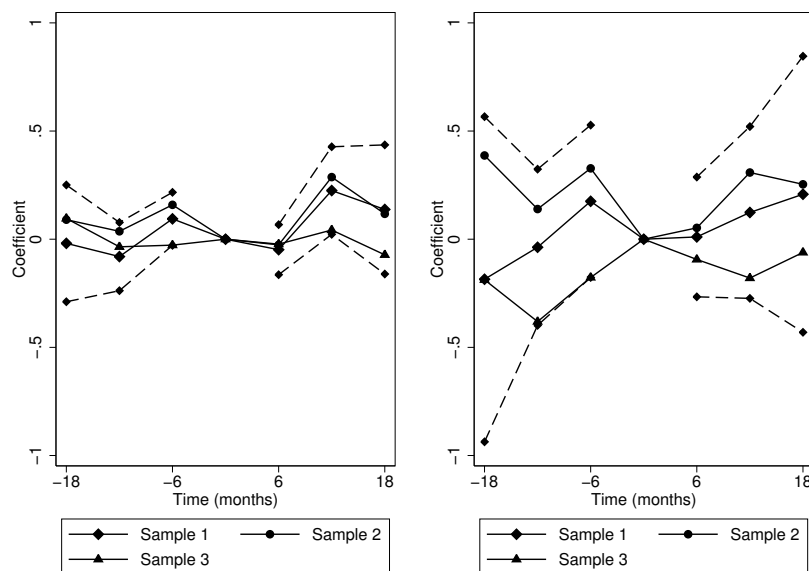
Figure A2: Number of employed household members before and after a household job separation using 6 methods of defining a job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data. See Section 6.2 for definitions. Definition 2 is the preferred specification. See Table A13 for coefficients.

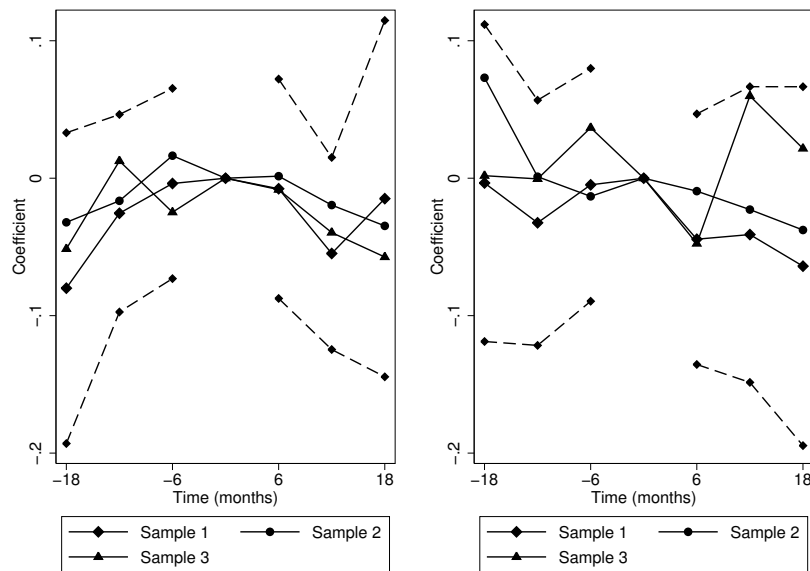
## 14 Online Appendix

Figure S1: Likelihood of transitioning into employment from discouragement (left panel) and searching unemployment (right panel) before and after a household job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data; Sample 2: households with at least 50% of members included in panel; Sample 3: households with all members included in panel data and transition from employment held for  $\geq 1$  year.

Figure S2: Likelihood of transitioning into narrow labor force participation from NEA or broad labor force participation for men (left panel) and women (right panel) before and after a household job separation



Notes: Plot of  $\gamma_k$  coefficients from Equation 6 with pointwise 95% CIs clustered by household (dashed lines). Month zero equal to last period of employment before separation. Sample 1: households with all members included in panel data; Sample 2: households with at least 50% of members included in panel; Sample 3: households with all members included in panel data and transition from employment held for  $\geq 1$  year.