

Coping with Intrahousehold Job Separation in South Africa's Labor Market

ZOË M. McLAREN

School of Public Health, University of Michigan

I. Introduction

Households in developing countries face substantial exposure to risk (Morduch 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 underdeveloped. 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 (Humphrey 1940; Maloney 1987).¹ 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 house-

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¹ 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.

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hold members (Maloney 1987).² As a result of these two effects, both the labor supply and search effort of nonemployed 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 toward 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% by the official definition and 35.6% if discouraged workers are included (StatsSA 2013), and yet only about 3% of the unemployed receive unemployment support (Klasen and Woolard 2009).³ The low transition rate out of unemployment into either the formal or informal sector results in high unemployment durations, especially for black Africans. More than 20 years after the end of apartheid, the large postapartheid inflows of labor market entrants with low skill levels and limited work experience remain poorly integrated into the workforce (see Verick 2012).

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).⁴ 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 statistically insignificant added worker effect in the United States (see Heckman and MaCurdy 1980, 1982; Maloney 1987, 1991; Tano 1993; Spletzer 1997; Stephens 2002; Juhn and Potter 2007; Garcia-Perez and Rendon 2016). The availability of unemployment insurance in the United States may crowd out the added worker effect (Gruber and Cullen 2000). Bredtmann, Otten, and Rulff (2014) and Lee and Parasnis (2014) conduct cross-country studies and find the

² 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.

³ A more recent study using National Income Dynamics Study data found that 0.1% of the unemployed were receiving unemployment insurance (Ebrahim, Leibbrandt, and Woolard 2013).

⁴ The tight kin network of exchanges and obligations has also been documented among the black urban poor near Chicago (Stack 1974).

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 (Layard, Barton, and Zabalza 1980; Lundberg 1985; Yeung and Hofferth 1998; Gruber and Cullen 2000).

The literature on the added worker effect outside the United States 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 et al. 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), who conducted 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 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 household panel data to examine the timing of labor market responses while controlling for household characteristics (see Banerjee et al. 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 nonsearching

unemployed and not-economically-active (NEA) 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 II presents a standard job search model. Section III describes the Labour Force Survey data that allow researchers to track a nationally representative sample of individuals over time. Section IV 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 V and my results in Section VI. Section VII discusses the implications of my findings. Section VIII concludes.

II. 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.⁵ 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

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

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

⁵ This model is based on McCall's (1970) model of intertemporal job search.

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:

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

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.

III. The Data

This study uses the South Africa Labour Force Survey (LFS), which is equivalent to the US Current Population Survey (CPS) but is conducted only twice a year and uses a rotating sample where 20% of households are replaced each round. The LFS was conducted semiannually 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 7 days. The LFS questionnaire includes questions about demographic characteristics, biograph-

ical information, activities related to work, unemployment and noneconomic activities, agricultural activities, and uncompensated activities (for more, see <http://www.statssa.gov.za>). The public-use cross-sectional household data were linked to 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 NEA, based on responses to a series of survey questions. The methodology is summarized in 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 lay-off, 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 1 week to be classified as unemployed. The respondent was also considered unemployed if he or she had a 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 4 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 et al. 2008; Verick 2012). The transition rate between discouragement and employment is more than 10% for black Africans. Discouraged workers may begin searching and obtain employment within the 6 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.

The results in this paper are based on individual-level data from waves 4–9 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% 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.⁶ Of the 616,167 individual observations in the cross-

⁶ StatsSA (2006) includes detailed information about the matching process.

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 suffer from attrition due to non-response (individual or household level), mortality, migration, or recording errors. Taking into account the 20% rotation, the panel inclusion rates for all but the last wave are equal to or above the 71% 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 table A2). As another robustness check, I confirm that results are consistent across samples subject to different levels of attrition from the panel.⁷ The panel data provide an important advantage over retrospective questions in the cross-sectional data because they permit the identification of individuals that recently experienced a job separation but have since found employment (and would therefore not be questioned about recent unemployment spells).

IV. 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, 2). Transition rates for whites are presented as a comparison. The other two racial categories, Indians and coloreds, 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. More than 35% of black Africans who are discouraged remain so 6 months later, whereas this figure is only about 13% for white men and 20% 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 6 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,

⁷ The individual (person) weights provided by StatsSA and used in this analysis correct for household nonresponse.

TABLE 1
TRANSITION MATRICES FOR MEN BY RACE

	March 2004: Black African Men					N
	NEA	Discouraged	Searching	Employed	Total	
September 2003:						
NEA	75.41	8.74	9.36	6.49	100	1,840
Discouraged	19.34	35.98	25.29	19.39	100	661
Searching	14.80	17.03	45.65	22.52	100	999
Employed	4.32	4.68	9.10	81.90	100	2,584
Total	28.29	11.40	17.12	43.19	100	6,084
March 2004: White Men						
NEA	76.83	.31	1.60	21.25	100	124
Discouraged	11.14	12.74	17.55	58.57	100	8
Searching	8.26	5.62	37.58	48.55	100	26
Employed	4.63	.99	1.57	92.82	100	805
Total	12.61	1.13	2.39	83.88	100	963

Source. Labour Force Survey panel data, waves 8 and 9.

Note. Sample includes men aged 16–64. All values are weighted. The value in each cell represents the proportion of individuals in the row category in September 2003 who transitioned into the column category by March 2004. Transition rates are broadly representative of other waves in the panel. NEA = not economically active.

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

TABLE 2
TRANSITION MATRICES FOR WOMEN BY RACE

	March 2004: Black African Women					N
	NEA	Discouraged	Searching	Employed	Total	
September 2003:						
NEA	63.31	16.24	11.75	8.70	100	2,411
Discouraged	24.49	38.12	25.10	12.29	100	1,266
Searching	20.97	21.81	42.46	14.76	100	1,192
Employed	10.33	6.25	10.07	73.35	100	2,316
Total	32.30	18.20	19.00	30.49	100	7,185
March 2004: White Women						
NEA	83.44	1.86	3.79	10.91	100	289
Discouraged	12.81	20.00	17.36	49.83	100	14
Searching	43.34	14.34	28.69	13.62	100	26
Employed	8.85	.75	2.34	88.05	100	619
Total	31.55	1.61	3.53	63.31	100	948

Source. Labour Force Survey panel data, waves 8 and 9.

Note. Sample includes women aged 16–64. All values are weighted. The value in each cell represents the proportion of individuals in the row category in September 2003 who transitioned into the column category by March 2004. Transition rates are broadly representative of other waves in the panel. NEA = not economically active.

TABLE 3
COMPARISON OF HOUSEHOLDS THAT EXPERIENCED A RECENT PRIME-AGE
JOB SEPARATION WITH THOSE THAT DID NOT

Variable	Mean		Difference in Means		t-Statistic with Controls
	Yes	No	Value	%	
Job separation 6 months earlier	.02	.02	.00	.00	-.8
Number of employed men in household	1.21	1.05	.16	.13	16.73
Number of employed women in household	1.21	1.04	.17	.14	19.06
Local unemployment rate	.45	.25	.20	.44	21.15
Pension eligible in household	.10	.06	.04	.40	1.94
Household receives child grant	.20	.06	.14	.70	6.4
Number of adults in household	1.62	1.35	.27	.17	6.94
Number of children in household	1.84	1.48	.36	.20	5.46
Age	32.55	32.85	-.30	-.01	-2.04
Years of primary education	6.23	6.09	.14	.02	2.17
Years of secondary education	2.41	2.33	.08	.03	.41
Completed high school	.20	.23	-.03	-.15	-3.98
Some postmatric education	.01	.03	-.02	-2.00	-4.84
Observations	1,191	39,523			

Note. Presented are sample means, difference in means (value and percent), and the t-statistic on the difference in means conditional on the other covariates included in the main regression results (see Sec. IV). The sample includes black Africans aged 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 are pooled. Specifications include the full set of controls listed in the table, survey wave dummies, and county fixed effects. Standard errors are clustered by household.

the generalizability of the results to households that are likely to experience a job separation.

V. Methods

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

$$Y_{ijt} = \beta_0 + \sum_{k=-4}^4 \gamma_k (t - T_i^* = k) + \phi' X_{ijt-1} + \delta_t + \alpha_i + \epsilon_{ijt}, \quad (6)$$

where Y_{ijt} is an outcome variable for household i in county j for time period t , γ_k is a set of indicators for the time period relative to the time of the most recent job separation of a prime-age (25- to 49-year-old) household member, X_{ijt-1} is a vector of lagged household characteristics, δ_t is a set of time dummies (for survey waves), and α_i represents household (or, in some specifications, county-by-survey-wave) fixed effects.⁸ My analysis focuses on black African households because black Africans compose more than 80% of the South African popula-

⁸ 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.

tion, their unemployment rate is very high, and kin support networks are generally strong. The impact of job separations of those aged 25–49 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 US CPS methodology, I use inverse probability weighting by survey wave for inclusion in the panel to correct for differential attrition (Maddrian and Lefgren 2000).

To address modeling issues raised by the intertemporal 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, and changes in household composition (number of household members, 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.⁹

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 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

⁹ The child grant is available to primary caregivers with coresident children under 18.

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 Sec. VI.B).

VI. 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 R 424 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 (fig. 1; table A3). There is a slight upward pretrend in household employment before the job separation; however, after the separation, the em-

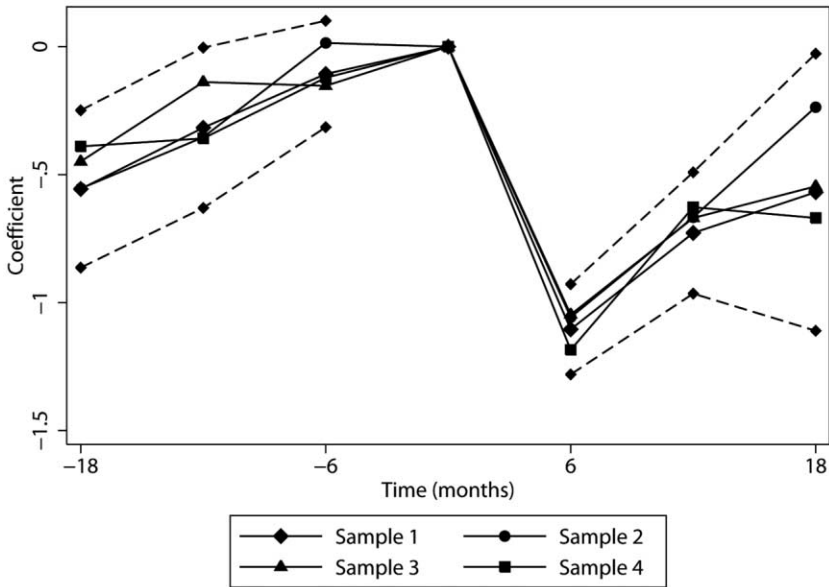


Figure 1. Number of employed household members before and after a household job separation. The plot shows γ_t coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1 = households with all members included in the panel data; sample 2 = households with at least 50% of members included in the panel; sample 3 = households with all members included in the panel data and transition from employment held for ≥ 1 year; sample 4 = households with at least 50% of members included in the panel and transition from employment held for ≥ 1 year. See table A3 for coefficients.

ployment level remains below the pretrend level. The results focus on the preferred specification (table A3, col. 1, sample 1) 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 (nonsearching) workers who are 22.5 percentage points more likely to transition into employment within 6–12 months of the job separation relative to before (table A4, col. 1; figs. 2 [left panel], S1 [left panel]; figs. S1, S2 are available online). There are 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 coreside with a pension-eligible

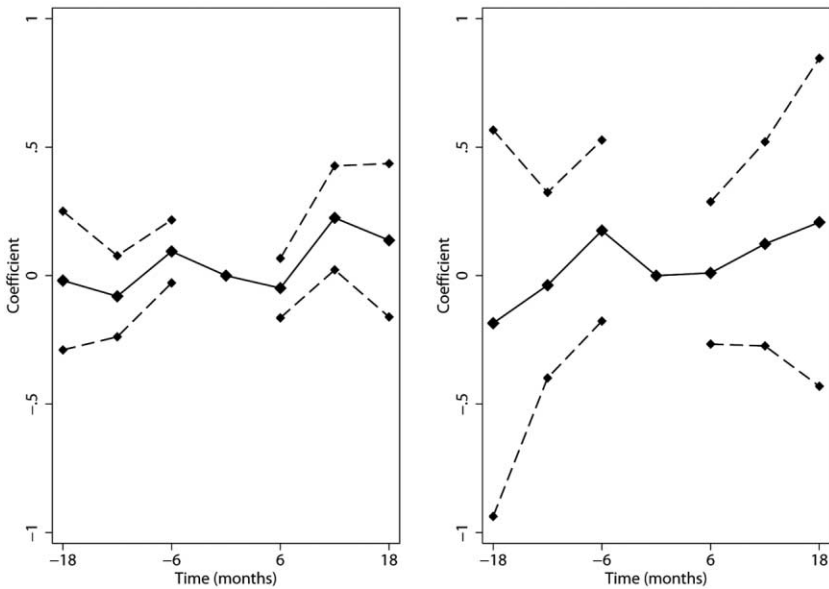


Figure 2. Likelihood of transitioning into employment from discouragement (*left*) and searching unemployment (*right*) before and after a household job separation. The plot shows γ_k coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1 = households with all members included in the panel data. See table A4 for coefficients.

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, column 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, col. 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 within 6–12 months of the job separation relative to before; however, this is not statistically significant (table A4, cols. 4–6; figs. 2B, 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 column 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 (cols. 2, 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 dis-

couraged 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 (figs. 3, 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 nonemployed 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).

A. Household Support

The post-job-separation changes discussed above influence the relative importance of different income sources in the household. With little employment recovery postseparation, household support from salaries declines in importance and remains 15–25 percentage points less likely to be the primary income

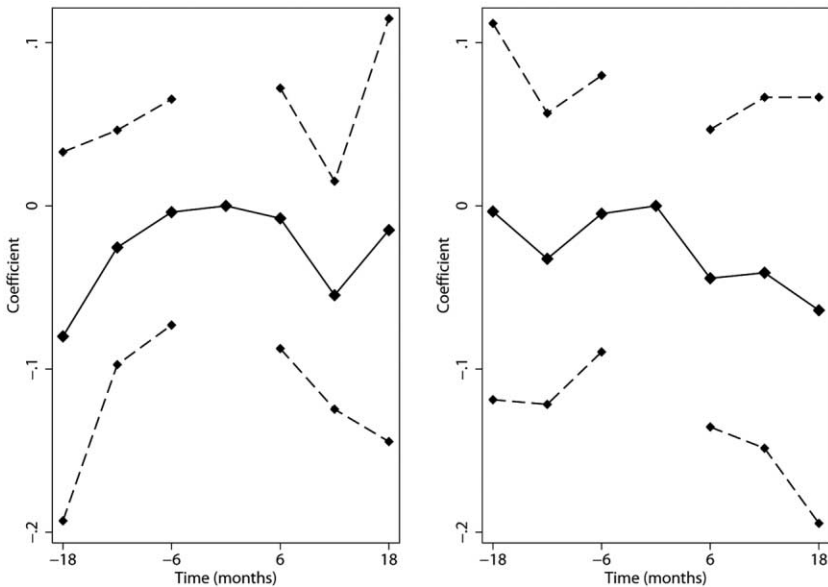


Figure 3. Likelihood of transitioning into narrow labor force participation from not economically active or broad labor force participation for men (*left*) and women (*right*) before and after a household job separation. The plot shows γ_k coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1 = households with all members included in panel data. See figure S1 in the online supplement for comparison of samples.

source for at least 18 months (fig. 4; table A7, cols. 1, 3, 5, and 6 correspond to sample 1 in fig. 4). Remittances are 5–9 percentage points more likely to be the main income source in the 12 months after the separation (col. 3). For households that do change composition (sample 2), remittances increase only 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 2.5–3.8 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, cols. 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 (fig. 5; table A8). Support from within the household

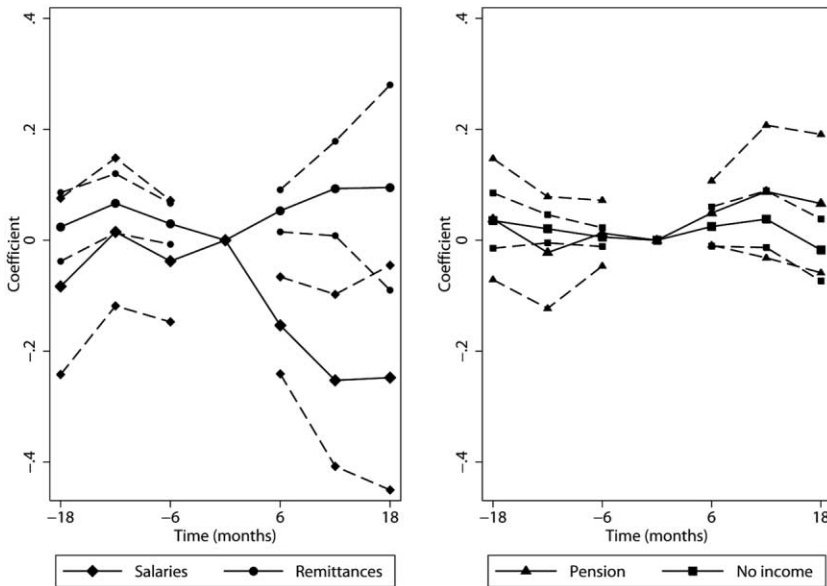


Figure 4. Main income source for the household before and after a household job separation. The plot shows γ_x coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1 = households with all members included in the panel data. See table A7, columns 1, 3, 5, and 6, for coefficients.

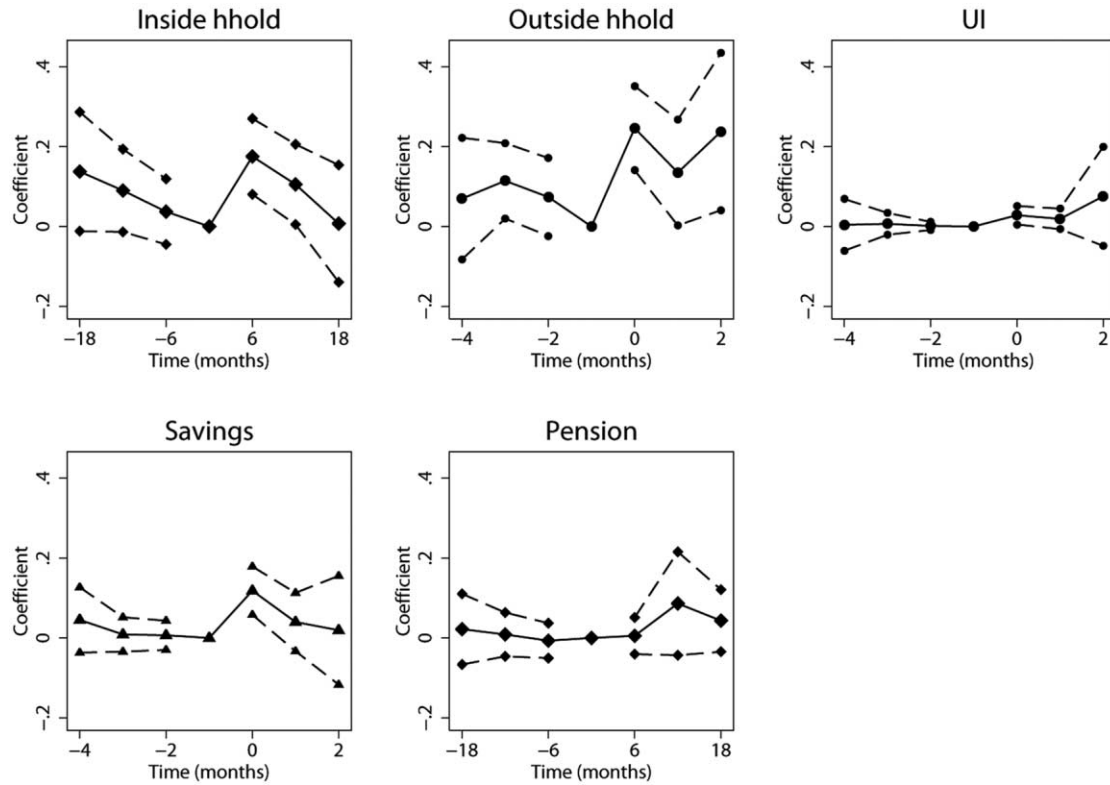


Figure 5. Source of financial support for unemployed household members before and after a household job separation. The plot shows γ_k coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1 = households with all members included in the panel data. See table A8 for coefficients. UI = unemployment insurance.

is sustained at an average of 14 percentage points more likely for 1 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 (fig. 6, bottom panel; table A9,

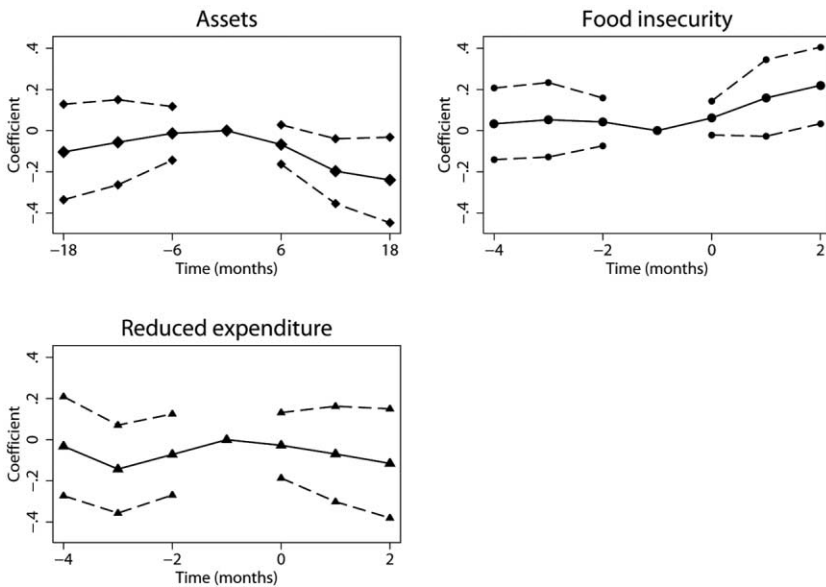


Figure 6. Measures of household well-being before and after a household job separation. The plot shows γ_k coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1 = households with all members included in the panel data. See table A9 for coefficients.

col. 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, col. 6). It is worth noting that households that reduce their expenditures by less than R 500 (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 (fig. 7; 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 (fig. 7).

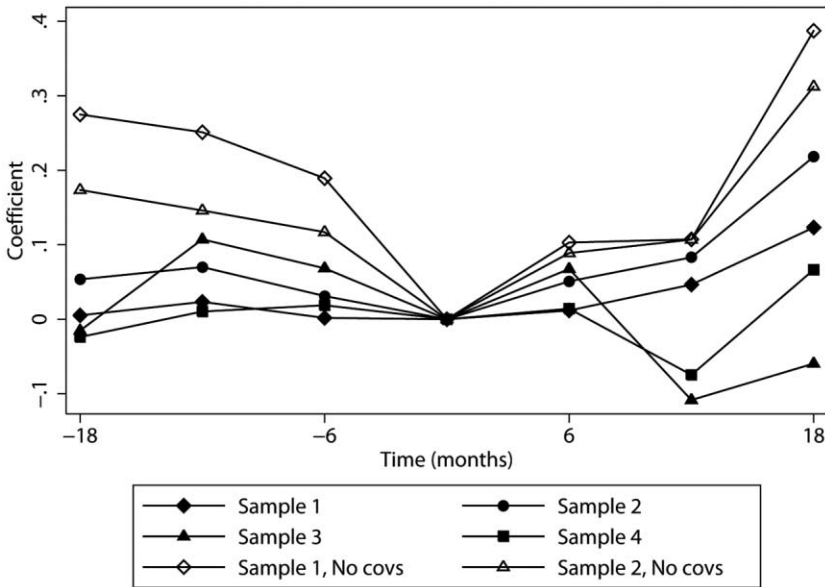


Figure 7. Likelihood of a change in household composition before and after a household job separation. The plot shows γ_k coefficients from equation (6). Month zero is equal to the last period of employment before separation. “No covs” excludes covariates in X_{ijt} . Sample 1 = households with all members included in the panel data; sample 2 = households with at least 50% of members included in the panel; sample 3 = households with all members included in the panel data and transition from employment held for ≥ 1 year; sample 4 = households with at least 50% of members included in the panel and transition from employment held for ≥ 1 year. See table A10 for additional coefficients.

B. Robustness Checks

Figure A1 shows that household fixed effects more effectively eliminate the pretrend 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 versus three waves or fully included in the panel versus a panel inclusion rate of 50% or higher, which demonstrates that selective attrition is not driving the results. Table A11 shows that results in figure 6 and table A9 are similar regardless of whether using lagged household characteristics, 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 six 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 postseparation 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 pretrend.¹⁰ The two definitions used for preferred specifications in the paper show the absence of a statistically significant pretrend in the 12 months before the household job separation. These two also have similar trends in the postseparation 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).

VII. 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

¹⁰ 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.

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).

A. High Cost of Job Search

The high cost of job searching in South Africa is 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 explanation 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 are 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% 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 Ramphela 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 ongoing 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 provides 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 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 nonsearching unemployed, older workers, high school graduates, urban residents, and members of pension-ineligible households are more likely to transition to employment, probably 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).

B. 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 et al. (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 coreside 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 1 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.

C. Magnitude of the Added Worker Effect

As expected, the estimates of the added worker effect in South Africa are larger than in the US 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 United States. 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, Florez, and Zurita (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.¹¹

D. 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 anticipated (e.g., if the employee plans to give notice or starts to experience a negative health

¹¹ The South African context of the current paper more closely matches Asia and Latin America than eastern or western Africa.

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 pretrend condition.

An additional concern is that like in the US 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.

VIII. 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 nonsearching 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 2 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.

Appendix

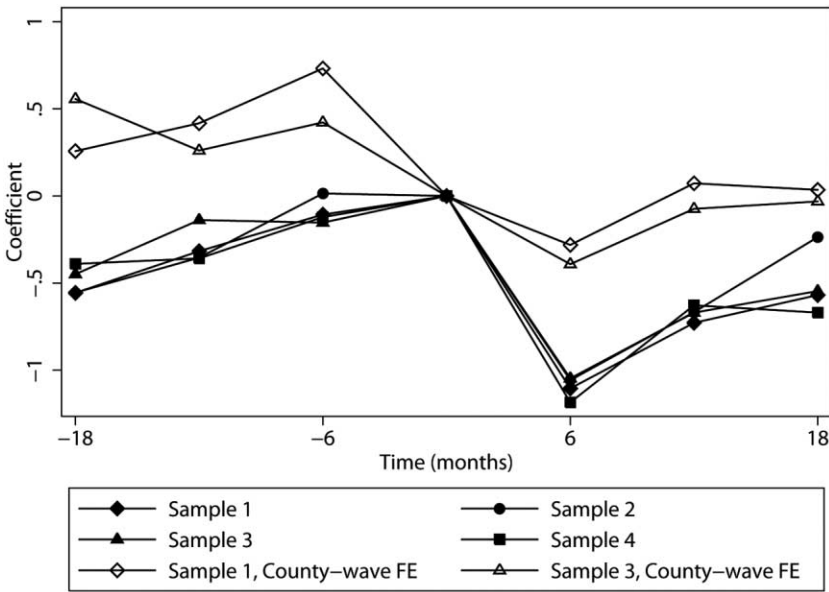


Figure A1. Number of employed household members before and after a household job separation comparing household fixed effects to county-by-survey-wave fixed effects (FE). The plot shows γ_k coefficients from equation (6). Month zero is equal to the last period of employment before separation. Sample 1: households with all members included in the panel data; sample 2: households with at least 50% of members included in the panel; sample 3: households with all members included in the panel data and transition from employment held for ≥ 1 year; sample 4: households with at least 50% of members included in the panel and transition from employment held for ≥ 1 year. Specifications include household fixed effects unless otherwise indicated.

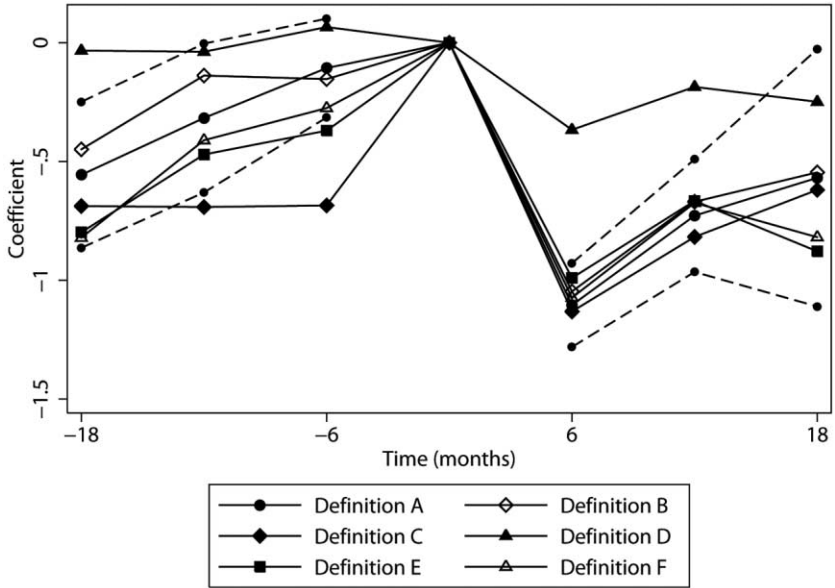


Figure A2. Number of employed household members before and after a household job separation using six methods of defining a job separation. The plot shows γ_k coefficients from equation (6), with pointwise 95% confidence intervals clustered by household (dashed lines). Month zero is equal to the last period of employment before separation. Sample 1: households with all members included in the panel data. See Section VI.B for definitions. Definition 2 is the preferred specification. See table A13 for coefficients.

TABLE A1

DETERMINATION OF EMPLOYMENT STATUS BASED ON RESPONSES TO LABOUR FORCE SURVEY QUESTIONS

Performed job activity in last 7 days?			
Yes	No		
↓	↓		
Employed	Temporarily absent from work?		
	Yes	No	
	↓	↓	
	Employed	Able to start work in 1 week?	
		No	Yes
		↓	↓
		NEA	Desires employment?
			No
			↓
			Yes
			↓
		NEA	Took steps to find work in past month?
			Yes
			↓
			No
			↓
			Unemployed
			Discouraged

Note. NEA = not economically active.

TABLE A2
LIKELIHOOD OF BEING INCLUDED IN PANEL DATA

Variable	Men	Women
Urban	.174*** (.039)	.103*** (.038)
Years of primary school completed	.018** (.009)	.015* (.008)
Years of secondary school completed	.051*** (.014)	.053*** (.013)
Holds a matric qualification	-.108* (.060)	-.074 (.056)
Completed some postmatric education	.264** (.131)	.137 (.122)
Widowed	-.218 (.142)	-.062 (.061)
Divorced	-.204* (.108)	-.149* (.079)
Never married	-.094** (.044)	-.119*** (.037)
Age:		
15–19	-.005 (.105)	-.050 (.086)
20–24	-.343*** (.106)	-.372*** (.085)
25–29	-.474*** (.104)	-.265*** (.084)
30–34	-.457*** (.103)	-.243*** (.083)
35–39	-.306*** (.102)	-.089 (.083)
40–44	-.171* (.102)	-.042 (.084)
45–49	-.107 (.105)	.048 (.085)
50–54	-.044 (.109)	.059 (.088)
55–59	-.132 (.114)	.113 (.096)
Constant	.102 (.136)	.006 (.118)
Observations	22,922	26,279

Note. Samples include black Africans aged 16–59. Results are presented for wave 4 only as representative of results from other survey waves. Magisterial district dummies are included.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% 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	-.885** (.383)	-1.078*** (.367)	-1.001*** (.291)	-.516* (.266)	-.043 (.201)	.616** (.242)
-18 months	-.556*** (.157)	-.555*** (.119)	-.449* (.243)	-.390 (.252)	.257** (.112)	.557 (.425)
-12 months	-.317** (.160)	-.354*** (.115)	-.138 (.211)	-.358* (.184)	.417*** (.093)	.261 (.170)
-6 months	-.107 (.106)	.014 (.079)	-.153 (.150)	-.121 (.109)	.732*** (.056)	.422*** (.107)
6 months	-1.105*** (.090)	-1.057*** (.060)	-1.047*** (.178)	-1.185*** (.137)	-.281*** (.074)	-.391*** (.079)
12 months	-.728*** (.121)	-.667*** (.084)	-.670** (.277)	-.627*** (.182)	.073 (.103)	-.074 (.142)
18 months	-.569** (.276)	-.236 (.367)	-.546* (.279)	-.670*** (.218)	.035 (.139)	-.031 (.191)
24 months	.300 (.602)	-.322 (.256)	.796 (.731)	.418 (.544)	1.022** (.430)	1.568*** (.493)
Number of adults	.107*** (.031)	.121*** (.018)	.099*** (.032)	.123*** (.018)	.101*** (.009)	.107*** (.009)
Pension-eligible member	.028 (.043)	-.030 (.028)	.018 (.042)	-.032 (.030)	-.232*** (.027)	-.234*** (.027)
Lagged local unemployment	.035 (.035)	.086*** (.030)	.039 (.036)	.083*** (.030)	.110*** (.028)	.104*** (.028)
Child grant received	.009 (.040)	-.022 (.030)	-.008 (.041)	-.027 (.032)	-.101*** (.028)	-.103*** (.028)
High school completion	.066* (.036)	.073** (.029)	.067* (.039)	.082*** (.031)	.311*** (.022)	.314*** (.022)
Constant	.780*** (.046)	.759*** (.036)	.790*** (.049)	.750*** (.037)	.701*** (.014)	.706*** (.014)
N	40,487	68,708	40,568	68,841	40,487	40,568
R ²	.79	.67	.78	.66	.29	.28
Fixed effects	Yes	Yes	Yes	Yes	No	No
Sample	1	4	1	4	1	4
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	6 months	12 months	12 months	6 months	12 months
Household panel inclusion	100%	≥50%	100%	≥50%	100%	100%

Note. Event study point estimates (γ_t) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A4
EVENT STUDY POINT ESTIMATES FOR LIKELIHOOD OF TRANSITIONING INTO EMPLOYMENT FROM NOT
ECONOMICALLY ACTIVE 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	-.019 (.138)	.090 (.119)	.096 (.270)	-.185 (.383)	.387 (.362)	-.188 (.771)
-12 months	-.080 (.080)	.036 (.060)	-.035 (.167)	-.037 (.184)	.139 (.136)	-.381 (.413)
-6 months	.094 (.063)	.159*** (.055)	-.028 (.103)	.175 (.180)	.328*** (.125)	-.177 (.269)
6 months	-.048 (.059)	-.026 (.043)	-.023 (.139)	.010 (.141)	.052 (.073)	-.094 (.432)
12 months	.225** (.103)	.287*** (.072)	.043 (.163)	.124 (.203)	.308*** (.110)	-.180 (.350)
18 months	.138 (.152)	.117 (.072)	-.072 (.137)	.208 (.326)	.254 (.159)	-.061 (.283)
24 months	.516** (.215)	.230* (.138)	.516** (.209)	.554* (.306)	.386* (.221)	.347* (.187)
Number of adults	.022 (.015)	.017*** (.006)	.022 (.015)	.008 (.049)	.031* (.017)	.004 (.049)
Pension-eligible member	.040* (.024)	.008 (.016)	.040* (.023)	.011 (.151)	-.045 (.048)	.013 (.141)
Lagged local unemployment	.263*** (.020)	.296*** (.014)	.261*** (.020)	.016 (.158)	.078 (.080)	.017 (.156)
Child grant received	-.001 (.027)	-.010 (.016)	-.001 (.026)	-.068 (.072)	-.013 (.036)	-.069 (.072)
High school completion	.021 (.029)	.022 (.016)	.020 (.030)	.015 (.099)	-.011 (.054)	.011 (.099)
Constant	-.010 (.024)	-.013 (.016)	-.011 (.026)	.246* (.139)	.088 (.063)	.260* (.141)
N	33,341	57,760	33,405	9,533	17,736	9,566
R ²	.55	.44	.54	.75	.66	.75
Sample	1	4	1	1	4	1
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	6 months	12 months	6 months	6 months	12 months
Household panel inclusion	100%	≥50%	100%	100%	≥50%	100%

Note. Event study point estimates (γ_t) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A5
EVENT STUDY POINT ESTIMATES FOR LIKELIHOOD OF TRANSITIONING INTO EMPLOYMENT FROM NOT
ECONOMICALLY ACTIVE OR DISCOURAGEMENT WITH SUBGROUP INTERACTIONS
BEFORE AND AFTER A HOUSEHOLD JOB SEPARATION

Variable	(1)	>35 (2)	High School Completed (3)	Urban (4)	Pension Eligible (5)
-18 months	-.019 (.138)	-.155 (.124)	.091 (.141)	-.001 (.225)	.015 (.158)
-12 months	-.080 (.080)	.038 (.081)	-.059 (.079)	-.102 (.091)	-.058 (.088)
-6 months	.094 (.063)	.128** (.061)	.084 (.063)	.063 (.071)	.075 (.063)
6 months	-.048 (.059)	-.017 (.045)	-.040 (.056)	-.089 (.061)	-.029 (.062)
12 months	.225** (.103)	.111 (.126)	.208* (.116)	.162 (.104)	.264** (.109)
18 months	.138 (.152)	.155 (.186)	.170 (.162)	-.109 (.125)	.180 (.154)
24 months	.516** (.215)	.576*** (.209)	.564*** (.202)	.414 (.296)	.426* (.249)
-18 months × subgroup		.339 (.234)	-.456 (.293)	-.013 (.277)	-.189 (.248)
-12 months × subgroup		-.280* (.161)	-.080 (.281)	.080 (.184)	-.060 (.213)
-6 months × subgroup		-.098 (.147)	.059 (.222)	.106 (.140)	.393* (.217)
6 months × subgroup		-.094 (.160)	-.054 (.264)	.132 (.148)	-.252 (.192)
12 months × subgroup		.210 (.223)	.089 (.231)	.183 (.229)	-.457 (.293)
18 months × subgroup		-.063 (.319)	-.194 (.424)	.529* (.274)	-.630 (.439)
24 months × subgroup		-.213 (.432)	-.786*** (.265)	.410 (.447)	-.004 (.345)
N	33,341	33,341	33,341	33,341	33,341
R ²	.55	.55	.55	.55	.55

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses for observations in at least two panel waves, with at least 6 months of employment before job separation, and 100% panel inclusion rates. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A6
EVENT STUDY POINT ESTIMATES FOR LIKELIHOOD OF TRANSITIONING INTO EMPLOYMENT FROM SEARCHING UNEMPLOYMENT WITH SUBGROUP INTERACTIONS BEFORE AND AFTER A HOUSEHOLD JOB SEPARATION

Variable	(1)	>35 (2)	High School Completed (3)	Urban (4)	Pension Eligible (5)
-18 months	-.185 (.383)	-.404 (.297)	-.165 (.421)	-.385 (.333)	.007 (.461)
-12 months	-.037 (.184)	-.114 (.181)	-.065 (.195)	-.144 (.166)	.010 (.217)
-6 months	.175 (.180)	.248 (.216)	.126 (.175)	.043 (.181)	.151 (.184)
6 months	.010 (.141)	.000 (.145)	-.024 (.132)	-.088 (.132)	.030 (.150)
12 months	.124 (.203)	.052 (.272)	.113 (.256)	-.011 (.207)	.151 (.211)
18 months	.208 (.326)	.226 (.336)	.267 (.371)	-.142 (.291)	.211 (.338)
24 months	.554* (.306)	.521*** (.202)	.666** (.328)	.432*** (.144)	.574 (.776)
-18 months × subgroup		.780 (.705)	-.337 (.515)	.436 (.724)	-.358 (.515)
-12 months × subgroup		.506 (.499)	.169 (.556)	.289 (.432)	.067 (.374)
-6 months × subgroup		-.236 (.371)	.239 (.510)	.349 (.407)	.467 (.435)
6 months × subgroup		.033 (.391)	.193 (.459)	.226 (.305)	-.225 (.467)
12 months × subgroup		.186 (.386)	.082 (.354)	.313 (.409)	-.336 (.666)
18 months × subgroup		-.103 (.782)	-.238 (.769)	.657 (.572)	.144 (.625)
24 months × subgroup		.062 (1.078)	-1.529*** (.404)	.433 (.943)	-.192 (.847)
Constant	.246* (.139)	.245* (.139)	.250* (.140)	.241* (.139)	.243* (.141)
N	9,533	9,533	9,533	9,533	9,533
R ²	.75	.75	.75	.75	.75

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses for observations in at least two panel waves, with at least 6 months of employment before job separation, and 100% panel inclusion rates. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A7
EVENT STUDY POINT ESTIMATES FOR MAIN INCOME SOURCE FOR THE HOUSEHOLD
BEFORE AND AFTER A HOUSEHOLD JOB SEPARATION

Variable	Outcome					
	Wages		Remittances		Pension	No Income
	(1)	(2)	(3)	(4)		
-24 months	-.058 (.156)	-.155** (.066)	.023 (.089)	.059** (.026)	.086 (.133)	.057 (.047)
-18 months	-.083 (.081)	-.213** (.090)	.024 (.032)	.079*** (.029)	.038 (.056)	.035 (.025)
-12 months	.015 (.068)	-.205*** (.070)	.066** (.027)	.075** (.037)	-.022 (.051)	.021 (.013)
-6 months	-.038 (.056)	-.128** (.062)	.030 (.019)	.025 (.022)	.013 (.030)	.006 (.009)
6 months	-.154*** (.045)	-.291*** (.093)	.053*** (.019)	.078* (.045)	.049* (.030)	.025 (.018)
12 months	-.253*** (.079)	-.388*** (.118)	.093** (.043)	.083 (.058)	.088 (.061)	.038 (.026)
18 months	-.248** (.103)	-.339** (.165)	.095 (.094)	.050 (.092)	.066 (.064)	-.018 (.028)
24 months	-.291 (.210)	-.517* (.272)	-.028 (.071)	.029 (.028)	.143 (.172)	.049 (.041)
Number of adults	-.000 (.012)	-.002 (.012)	.003 (.008)	.003 (.008)	.005 (.008)	.003 (.006)
Pension-eligible member	-.032 (.024)	-.032 (.023)	-.026** (.011)	-.024** (.011)	.126*** (.020)	-.007 (.005)
Lagged local unemployment	.266*** (.019)	.266*** (.019)	.095*** (.014)	.093*** (.014)	.064*** (.013)	.017** (.007)
Child grant received	-.050*** (.017)	-.054*** (.017)	-.007 (.013)	-.006 (.013)	.044*** (.015)	-.008 (.006)
High school completion	.009 (.024)	.009 (.025)	.005 (.016)	.005 (.016)	-.008 (.013)	-.002 (.010)
Constant	.528*** (.020)	.533*** (.020)	.145*** (.014)	.146*** (.013)	.147*** (.013)	.020** (.009)
N	40,487	40,568	40,487	40,568	40,487	40,487
R ²	.81	.81	.79	.79	.84	.68
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	12 months	6 months	12 months	6 months	6 months
Household panel inclusion	100%	100%	100%	100%	100%	100%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A8
EVENT STUDY POINT ESTIMATES FOR SOURCE OF FINANCIAL SUPPORT FOR UNEMPLOYED HOUSEHOLD
MEMBERS BEFORE AND AFTER A HOUSEHOLD JOB SEPARATION

Variable	Outcome					
	Inside (1)	Outside (2)	UI (3)	Savings (4)	Pension	
					(5)	(6)
-24 months	.063 (.120)	.160 (.183)	-.019 (.023)	.031 (.048)	-.034 (.063)	-.012 (.034)
-18 months	.137* (.076)	.070 (.078)	.004 (.033)	.045 (.042)	.022 (.045)	.045 (.032)
-12 months	.090* (.053)	.114** (.048)	.007 (.014)	.009 (.022)	.009 (.028)	.017 (.025)
-6 months	.037 (.042)	.074 (.050)	.001 (.005)	.007 (.019)	-.007 (.022)	.018 (.017)
6 months	.175*** (.048)	.246*** (.054)	.028** (.012)	.118*** (.031)	.005 (.023)	.010 (.017)
12 months	.105** (.051)	.135** (.067)	.019 (.013)	.040 (.037)	.086 (.066)	.046 (.036)
18 months	.007 (.075)	.238** (.100)	.076 (.063)	.019 (.069)	.043 (.040)	.066 (.061)
24 months	-.139 (.280)	.089 (.081)	.020** (.009)	.014 (.038)	-.036 (.046)	-.030 (.048)
Number of adults	.162*** (.014)	-.013 (.014)	-.003 (.003)	-.008 (.006)	.037*** (.011)	.023*** (.005)
Pension-eligible member	-.006 (.015)	.010 (.026)	.004 (.005)	-.019** (.009)	.022 (.020)	.035*** (.013)
Lagged local unemployment	-.017 (.017)	.038* (.020)	.003 (.005)	-.007 (.011)	-.017 (.012)	-.011 (.009)
Child grant received	.015 (.018)	-.002 (.023)	.004 (.005)	.011 (.012)	.022 (.019)	.011 (.011)
High school completion	-.018 (.019)	-.023 (.023)	-.011 (.007)	-.005 (.011)	-.019* (.011)	-.039*** (.011)
Constant	.452*** (.021)	.273*** (.023)	.019*** (.005)	.039*** (.010)	.029* (.016)	.061*** (.011)
N	40,487	40,487	40,487	40,487	40,487	68,708
R ²	.79	.73	.49	.55	.79	.68
Sample	1	1	1	1	1	4
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	6 months	6 months	6 months	6 months	6 months
Household panel inclusion	100%	100%	100%	100%	100%	100%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text. UI = unemployment insurance.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A9
EVENT STUDY POINT ESTIMATES FOR MEASURES OF HOUSEHOLD WELL-BEING
BEFORE AND AFTER A HOUSEHOLD JOB SEPARATION

Variable	Outcome					
	Assets		Food Insecurity		Reduced Expenditures	
	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-.323 (.222)	-.250 (.222)	-.039 (.202)	.185 (.238)		
-18 months	-.104 (.118)	-.181 (.154)	.033 (.089)	.174 (.183)	-.032 (.123)	.117 (.345)
-12 months	-.057 (.106)	-.151 (.135)	.053 (.092)	-.116 (.186)	-.143 (.109)	.118 (.287)
-6 months	-.013 (.067)	-.040 (.063)	.042 (.059)	-.043 (.105)	-.072 (.101)	.001 (.144)
6 months	-.068 (.049)	-.031 (.083)	.061 (.042)	.021 (.066)	-.027 (.081)	.109 (.153)
12 months	-.197** (.080)	-.079 (.133)	.159* (.095)	-.034 (.152)	-.069 (.118)	.044 (.136)
18 months	-.240** (.106)	.005 (.173)	.220** (.095)	-.083 (.140)	-.115 (.135)	.007 (.254)
24 months	.321* (.185)	.370** (.171)	.178 (.260)	-.104 (.301)	-.131 (.169)	-.184** (.087)
Number of adults	-.008 (.015)	-.011 (.015)	-.000 (.014)	-.000 (.014)	-.061 (.050)	-.063 (.051)
Pension-eligible member	-.008 (.022)	-.009 (.022)	.017 (.023)	.016 (.024)	-.004 (.115)	-.008 (.112)
Lagged local unemployment	-.011 (.023)	-.009 (.024)	.222*** (.021)	.221*** (.021)	-.037 (.071)	-.041 (.071)
Child grant received	.044** (.020)	.043** (.020)	-.002 (.020)	-.004 (.020)	.005 (.046)	.013 (.045)
High school completion	.030 (.032)	.032 (.032)	.005 (.030)	.005 (.030)	.012 (.043)	.013 (.044)
Constant	.492*** (.026)	.497*** (.026)	.450*** (.024)	.451*** (.024)	.121 (.084)	.120 (.083)
N	36,738	36,816	40,487	40,568	15,091	15,135
R ²	.80	.80	.74	.74	.68	.68
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	12 months	6 months	12 months	6 months	12 months
Household panel inclusion	100%	100%	100%	100%	100%	100%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% 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	-.031 (.087)	-.090 (.127)	.052 (.142)	-.070 (.128)	-.030 (.090)	-.036 (.119)
-18 months	-.017 (.076)	.017 (.049)	-.029 (.100)	-.033 (.144)	.005 (.080)	.054 (.046)
-12 months	.024 (.053)	.057 (.044)	.134 (.126)	.016 (.090)	.023 (.051)	.070* (.040)
-6 months	.003 (.043)	.030 (.032)	.070 (.074)	.066 (.053)	.002 (.042)	.031 (.030)
6 months	-.010 (.049)	.036 (.033)	.073 (.111)	.007 (.054)	.012 (.050)	.051* (.030)
12 months	.048 (.071)	.090* (.050)	-.109* (.065)	-.083 (.070)	.046 (.074)	.083* (.047)
18 months	.132* (.078)	.217*** (.053)	-.042 (.134)	.081 (.103)	.123 (.077)	.218*** (.051)
24 months	.530** (.230)	.240*** (.085)	.665*** (.229)	.280 (.195)	.550** (.244)	.239*** (.078)
Number of adults	.052*** (.018)	.051*** (.006)	.052*** (.018)	.051*** (.006)	.062*** (.014)	.032*** (.004)
Pension-eligible member	.105*** (.027)	.135*** (.012)	.105*** (.028)	.133*** (.012)	.098*** (.023)	.137*** (.010)
Lagged local unemployment	-1.390*** (.022)	-.777*** (.017)	-1.392*** (.022)	-.778*** (.017)	-1.469*** (.018)	-.750*** (.013)
Child grant received	.047* (.025)	.055*** (.015)	.046* (.025)	.055*** (.015)	.040* (.022)	.050*** (.013)
High school completion	.013 (.026)	.009 (.019)	.010 (.026)	.006 (.019)	-.002 (.023)	.003 (.015)
Constant	.960*** (.028)	.917*** (.013)	.957*** (.029)	.918*** (.012)	.962*** (.022)	.933*** (.009)
N	26,927	44,463	27,002	44,585	40,487	68,708
R ²	.74	.59	.74	.59	.76	.57
Sample	1	4	1	4	1	4
Minimum waves in panel	3	3	3	3	2	2
Length of employment	6 months	6 months	12 months	12 months	6 months	6 months
Household panel inclusion	100%	≥50%	100%	≥50%	100%	≥50%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A11
EVENT STUDY POINT ESTIMATES FOR MEASURES OF HOUSEHOLD WELL-BEING BEFORE AND AFTER
A HOUSEHOLD JOB SEPARATION WITH TWICE-LAGGED COVARIATES

Variable	Outcome					
	Assets		Food Insecurity		Reduced Expenditures	
	(1)	(2)	(3)	(4)	(5)	(6)
-24 months	-.326 (.222)	-.256 (.222)	-.055 (.205)	.171 (.236)		
-18 months	-.107 (.117)	-.190 (.153)	-.010 (.091)	.161 (.183)	-.023 (.120)	.122 (.346)
-12 months	-.058 (.105)	-.155 (.135)	.014 (.091)	-.131 (.180)	-.148 (.107)	.122 (.285)
-6 months	-.014 (.066)	-.042 (.062)	.010 (.058)	-.069 (.102)	-.077 (.100)	.003 (.141)
6 months	-.072 (.049)	-.034 (.084)	.057 (.042)	.012 (.065)	-.024 (.081)	.111 (.151)
12 months	-.199** (.080)	-.078 (.134)	.158* (.095)	-.043 (.154)	-.070 (.119)	.043 (.135)
18 months	-.248** (.104)	.009 (.171)	.196** (.094)	-.118 (.144)	-.113 (.136)	.003 (.252)
24 months	.315* (.180)	.370** (.168)	.117 (.294)	-.202 (.335)	-.138 (.168)	-.190** (.089)
Number of adults	-.007 (.015)	-.011 (.015)	-.002 (.014)	-.002 (.014)	-.061 (.050)	-.063 (.051)
Pension-eligible member	.011 (.032)	.015 (.032)	-.007 (.030)	-.008 (.031)	.004 (.041)	.004 (.041)
Lagged local unemployment	.014 (.027)	.009 (.027)	-.045* (.027)	-.041 (.027)	-.061 (.052)	-.058 (.051)
Child grant received	.065 (.044)	.061 (.044)	-.075* (.044)	-.072* (.043)	-.018 (.049)	-.015 (.048)
High school completion	.030 (.032)	.033 (.032)	.013 (.030)	.013 (.030)	.014 (.044)	.015 (.044)
Constant	.495*** (.026)	.499*** (.026)	.425*** (.024)	.424*** (.024)	.133 (.083)	.130 (.084)
N	36,738	36,816	40,487	40,568	15,091	15,135
R ²	.80	.80	.73	.73	.68	.68
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	12 months	6 months	12 months	6 months	12 months
Household panel inclusion	100%	100%	100%	100%	100%	100%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A12
EVENT STUDY POINT ESTIMATES FOR MAIN RESULTS WITHOUT INVERSE
PROBABILITY WEIGHTING TO ADJUST FOR ATTRITION

Variable	Outcome					
	Number of Employed (1)	Transition to Employment		Assets (4)	Food Insecurity (5)	Reduced Expenditures (6)
		(2)	(3)			
-24 months	-1.064*** (.385)			-.184 (.248)	-.178 (.222)	
-18 months	-.532*** (.169)	-.219 (.321)	-.023 (.117)	-.065 (.119)	.007 (.084)	-.049 (.122)
-12 months	-.281* (.152)	-.030 (.188)	-.023 (.082)	-.061 (.101)	.013 (.090)	-.164 (.108)
-6 months	-.117 (.101)	.184 (.161)	.093* (.056)	-.027 (.065)	.017 (.058)	-.081 (.103)
6 months	-1.129*** (.088)	.001 (.127)	-.046 (.053)	-.057 (.049)	.048 (.047)	-.046 (.084)
12 months	-.726*** (.122)	.126 (.214)	.252** (.105)	-.170** (.082)	.120 (.089)	-.065 (.131)
18 months	-.726*** (.278)	.178 (.316)	.071 (.141)	-.223** (.104)	.169* (.097)	-.119 (.134)
24 months	.087 (.542)	.474 (.340)	.436* (.256)	.353* (.197)	.134 (.330)	-.187 (.136)
Number of adults	.079*** (.028)	.013 (.050)	.020 (.016)	-.004 (.016)	.003 (.015)	-.063 (.045)
Pension-eligible member	.009 (.039)	.015 (.133)	.031 (.024)	-.020 (.021)	.019 (.022)	.029 (.105)
Lagged local unemployment	.054 (.038)	.040 (.180)	.266*** (.023)	-.000 (.026)	.254*** (.024)	-.044 (.073)
Child grant received	.028 (.040)	-.035 (.071)	.013 (.029)	.046** (.019)	-.009 (.023)	-.001 (.046)
High school completion	.087* (.047)	.010 (.138)	.036 (.037)	.029 (.042)	-.009 (.038)	.012 (.058)
Constant	.801*** (.045)	.221 (.142)	-.005 (.027)	.497*** (.028)	.473*** (.025)	.127 (.081)
N	38,850	9,012	32,075	35,235	38,850	14,793
R ²	.79	.75	.55	.79	.74	.68
Minimum waves in panel	2	2	2	2	2	2
Length of employment	6 months	6 months	6 months	6 months	6 months	6 months
Household panel inclusion	100%	100%	100%	100%	100%	100%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

TABLE A13
EVENT STUDY POINT ESTIMATES FOR NUMBER OF EMPLOYED HOUSEHOLD MEMBERS BEFORE AND AFTER
A HOUSEHOLD JOB SEPARATION USING SIX METHODS OF DEFINING A JOB SEPARATION

Variable	Definition A (1)	Definition B (2)	Definition C (3)	Definition D (4)	Definition E (5)	Definition F (6)
-24 months	-.885** (.383)	-1.001*** (.291)	-.690*** (.136)	-.263 (.203)	-1.117*** (.296)	-1.268*** (.307)
-18 months	-.556*** (.157)	-.449* (.243)	-.688*** (.174)	-.033 (.132)	-.798*** (.170)	-.821*** (.230)
-12 months	-.317** (.160)	-.138 (.211)	-.692*** (.086)	-.038 (.090)	-.471*** (.140)	-.411** (.172)
-6 months	-.107 (.106)	-.153 (.150)	-.685*** (.057)	.066 (.077)	-.370*** (.104)	-.275** (.115)
6 months	-1.105*** (.090)	-1.047*** (.178)	-1.132*** (.046)	-.367*** (.063)	-.990*** (.075)	-1.073*** (.081)
12 months	-.728*** (.121)	-.670** (.277)	-.818*** (.065)	-.186** (.092)	-.666*** (.115)	-.674*** (.127)
18 months	-.569** (.276)	-.546* (.279)	-.620*** (.092)	-.249* (.141)	-.878*** (.206)	-.819*** (.256)
24 months	.300 (.602)	.796 (.731)	-.368* (.198)	-.080 (.162)	-.296 (.386)	-.562 (.441)
30 months			-.661*** (.218)	.004 (.279)	-.496 (.501)	-.168 (.186)
Number of adults	.107*** (.031)	.099*** (.032)	.099*** (.027)	.108*** (.032)	.099*** (.031)	.099*** (.031)
Pension-eligible member	.028 (.043)	.018 (.042)	.003 (.034)	.019 (.042)	.018 (.042)	.020 (.042)
Lagged local unemployment	.035 (.035)	.039 (.036)	.121*** (.031)	.043 (.036)	.055 (.036)	.050 (.036)
Child grant received	.009 (.040)	-.008 (.041)	.022 (.035)	.012 (.042)	.003 (.040)	-.010 (.041)
High school completion	.066* (.036)	.067* (.039)	.067** (.034)	.068* (.039)	.065* (.038)	.067* (.038)
Constant	.780*** (.046)	.790*** (.049)	.826*** (.041)	.774*** (.049)	.795*** (.047)	.789*** (.047)
N	40,487	40,568	39,678	39,973	40,512	40,551
R ²	.79	.78	.83	.78	.78	.78
Minimum waves in panel	2	2	2	2	2	2
Household panel inclusion	100%	100%	100%	100%	100%	100%

Note. Event study point estimates (γ_{it}) are from eq. (6), with 95% confidence intervals clustered by household in parentheses. Month zero is equal to the last period of employment before separation. Samples include black Africans aged 16–59. All waves are pooled. Specifications also include additional controls noted in the text.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

References

- Akresh, Richard. 2009. "Flexibility of Household Structure: Child Fostering Decisions in Burkina Faso." *Journal of Human Resources* 44, no. 4:976–97.
- Ambler, K. 2016. "Bargaining with Grandma: The Impact of the South African Pension on Household Decision-Making." *Journal of Human Resources* 514:900–932.
- Ardington, Cally, Anne Case, and Victoria Hosegood. 2009. "Labor Supply Responses to Large Social Transfers: Longitudinal Evidence from South Africa." *American Economic Journal: Applied Economics* 1, no. 1:22–48.
- Ardington, Elisabeth, and Frances Lund. 1995. "Pensions and Development: Social Security as Complementary to Programmes of Reconstruction and Development." *Development Southern Africa* 12, no. 4:557–77.
- Banerjee, Abhijit, Sebastian Galiani, James Levinsohn, Zoë McLaren, and Ingrid Woolard. 2008. "Why Has Unemployment Risen in the New South Africa?" *Economics of Transition* 16, no. 4:715–40.
- Baslevnt, Cem, and Özlem Onaran. 2003. "Are Married Women in Turkey More Likely to Become Added or Discouraged Workers?" *Labour* 17:439–58.
- Basu, Kaushik, Garance Genicot, and Joseph E. Stiglitz. 1999. "Household Labour Supply, Unemployment, and Minimum Wage." Policy Research Working Paper no. 2049, World Bank, Washington, DC.
- Bertrand, Marianne, Sendhil Mullainathan, and Douglas L. Miller. 2003. "Public Policy and Extended Families: Evidence from Pensions in South Africa." *World Bank Economic Review* 17, no. 1:27–50.
- Bhalotra, S. R., and M. Umana-Aponte. 2010. "The Dynamics of Women's Labour Supply in Developing Countries." IZA Discussion Paper no. 4879, IZA Institute of Labor Economics, Bonn.
- Bredtmann, J., S. Otten, and C. Rulff. 2014. "Husband's Unemployment and Wife's Labor Supply: The Added Worker Effect across Europe." Ruhr Economic Papers no. 484, RWI Leibniz-Institut für Wirtschaftsforschung, Ruhr-University Bochum, TU Dortmund University, University of Duisburg-Essen.
- Cardona-Sosa, L., L. A. Florez, and L. M. Zurita. 2016. "Intra-Household Labour Supply after an Unemployment Event: The Added Worker Effect." Borradores de Economía no. 944, Banco de la Republica de Colombia, Bogotá.
- Case, Anne, and Angus Deaton. 1998. "Large Cash Transfers to the Elderly in South Africa." *Economic Journal* 108:1330–63.
- Christopher, Anthony J. 2001. "Urban Segregation in Post-Apartheid South Africa." *Urban Studies* 38, no. 3:449–66.
- . 2005. "Does South Africa Have Ghettos?" *Tijdschrift voor Economische en Sociale Geografie* 96, no. 3:241–52.
- Clark, Samuel J., Mark A. Collinson, Kathleen Kahn, Kyle Drullinger, and Stephen M. Tollman. 2007. "Returning Home to Die: Circular Labour Migration and Mortality in South Africa 1." *Scandinavian Journal of Public Health* 35, no. 69 (suppl.): 35–44.
- Deaton, Angus. 1992. *Understanding Consumption*. Oxford: Clarendon.
- Dercon, S. 2002. "Income Risk, Coping Strategies, and Safety Nets." *World Bank Research Observer* 17, no. 2:141–66.

- Duflo, Esther. 2003. "Grandmothers and Granddaughters: Old-Age Pensions and Intra-household Allocation in South Africa." *World Bank Economic Review* 17, no. 1:1–25.
- Duryea, Suzanne, David Lam, and Deborah Levison. 2007. "Effects of Economic Shocks on Children's Employment and Schooling in Brazil." *Journal of Development Economics* 84, no. 1:188–214.
- Ebrahim, A., I. Woolard, and M. Leibbrandt. 2013. "Unemployment and Household Formation." SALDRU Working Paper no. 126/NIDS Discussion Paper no. 2013/8, Southern Africa Labour and Development Research Unit, University of Cape Town, Cape Town.
- Edmonds, Eric V., Kristin Mammen, and Douglas L. Miller. 2005. "Rearranging the Family? Income Support and Elderly Living Arrangements in a Low-Income Country." *Journal of Human Resources* 40, no. 1:186–207.
- Fernandes, Reynaldo, and Fabiana de Felício. 2002. "The Entry of the Wife into the Labor Force in Response to the Husband's Unemployment: A Study of the Added Worker Effect in Brazilian Metropolitan Areas." *Economic Development and Cultural Change* 53:887–911.
- Flinn, Christopher J., and James J. Heckman. 1983. "Are Unemployment and Out of the Labour Force Behaviourally Distinct Labour Force States." *Journal of Labour Economics* 1, no. 1:28–42.
- Frankenberg, Elizabeth, James P. Smith, and Duncan Thomas. 2003. "Economic Shocks, Wealth, and Welfare." *Journal of Human Resources* 38, no. 2:280–321.
- Fuchs, J., and E. Weber. 2015. "Long-Term Unemployment and Labor Force Participation: A Decomposition of Unemployment to Test for the Discouragement and Added Worker Hypotheses." IAB Discussion Paper no. 32/2015, Institute for Employment Research, Nuremberg.
- Garcia-Perez, J. I., and S. Rendon. 2016. "Family Job Search and Wealth: The Added Worker Effect Revisited." FRB Philadelphia Research Department Working Paper no. 16–34, Federal Reserve Bank of Philadelphia, Philadelphia.
- Gertler, Paul, David I. Levine, and Enrico Moretti. 2009. "Do Microfinance Programs Help Families Insure Consumption Against Illness?" *Health Economics* 18:257–73.
- Gönül, Füsün. 1992. "New Evidence on Whether Unemployment and Out of the Labour Force Are Distinct States." *Journal of Human Resources* 27, no. 2:329–61.
- Gruber, Jonathan, and Julie B. Cullen. 2000. "Does Unemployment Insurance Crowd out Spousal Labor Supply?" *Journal of Labor Economics* 18, no. 3:546–72.
- Ham, J. C. 1986. "Testing Whether Unemployment Represents Intertemporal Labour Supply Behaviour." *Review of Economic Studies* 53, no. 4:559–78.
- Hamoudi, Amar, and Duncan Thomas. 2014. "Endogenous Coresidence and Program Incidence: South Africa's Old Age Pension." *Journal of Development Economics* 109:30–37.
- Heckman, James J., and Thomas E. MaCurdy. 1980. "A Life Cycle Model of Female Labour Supply." *Review of Economic Studies* 47, no. 1:47–74.
- . 1982. "Corrigendum on a Life Cycle Model of Female Labour Supply." *Review of Economic Studies* 49, no. 4:659–60.
- Humphrey, Don D. 1940. "Alleged Additional Workers in the Measurement of Unemployment." *Journal of Political Economy*, 48:412–19.

- Jensen, Robert T. 2003. "Do Private Transfers Displace the Benefits of Public Transfers? Evidence from South Africa." *Journal of Public Economics* 88:89–112.
- Juhn, Chinhui, and Simon Potter. 2007. "Is There Still an Added Worker Effect?" FRB New York Staff Report no. 310, Federal Reserve Bank of New York, New York.
- Karaoglan, Deniz, and Cagla Okten. 2015. "Labor-Force Participation of Married Women in Turkey: A Study of the Added-Worker Effect and the Discouraged-Worker Effect." *Emerging Markets Finance and Trade* 51, no. 1:274–90.
- Kingdon, Geeta, and John Knight. 2006. "The Measurement of Unemployment When Unemployment Is High." *Labour Economics* 13:291–315.
- Klasen, Stephan. 1997. "Poverty, Inequality and Deprivation in South Africa: An Analysis of the 1993 SALDRU Survey." *Social Indicator Research* 41:51–94.
- Klasen, Stephan, and Ingrid Woolard. 2009. "Surviving Unemployment without State Support: Unemployment and Household Formation in South Africa." *Journal of African Economies* 18, no. 1:1–51.
- Kohara, M. 2010. "The Response of Japanese Wives' Labor Supply to Husbands' Job Loss." *Journal of Population Economics* 234:1133–49.
- Layard, Richard, M. Barton, and Antonio Zabalza. 1980. "Married Women's Participation and Hours." *Economica* 47 (February): 51–72.
- Lee, G. H., and J. Parasnis. 2014. "Discouraged Workers in Developed Countries and Added Workers in Developing Countries? Unemployment Rate and Labour Force Participation." *Economic Modelling* 41:90–98.
- Lundberg, Shelly. 1985. "The Added Worker Effect." *Journal of Labor Economics* 3, no. 1:11–37.
- Madrian, Brigitte C., and Lars John Lefgren. 2000. "An Approach to Longitudinally Matching Current Population Survey (CPS) Respondents." *Journal of Economic and Social Measurement* 26, no. 1:31–62.
- Magruder, Jeremy R. 2010. "Intergenerational Networks, Unemployment, and Persistent Inequality in South Africa." *American Economic Journal: Applied Economics* 2, no. 1:62–85.
- Maloney, Tim. 1987. "Employment Constraints and the Labor Supply of Married Women: A Reexamination of the Added Worker Effect." *Journal of Human Resources* 22, no. 1:51–61.
- . 1991. "Unobserved Variables and the Elusive Added Worker Effect." *Economica* 58, no. 230:173–87.
- McCall, John J. 1970. "Economics of Information and Job Search." *Quarterly Journal of Economics* 84, no. 1:113–26.
- McKenzie, David J. 2003. "How Do Households Cope with Aggregate Shocks? Evidence from the Mexican Peso Crisis." *World Development* 31, no. 7:1179–99.
- Morduch, J. 1995. "Income Smoothing and Consumption Smoothing." *Journal of Economic Perspectives* 9, no. 3:103–14.
- Nattrass, Nicoli, and Richard Walker. 2005. "Unemployment and Reservation Wages in Working-Class Cape Town." *South African Journal of Economics* 73, no. 3:498–509.
- Parker, Susan W., and Emmanuel Skoufias. 2004. "The Added Worker Effect over the Business Cycle: Evidence from Urban Mexico." *Applied Economics Letters* 11, no. 10: 625–30.

- Peracchi, Franco, and Finis Welch. 1993. "Trends in Labor Force Transitions of Older Men and Women." *Journal of Labor Economics* 12, no. 2:210–42.
- Ranchhod, Vimal. 2009. "Household Responses to Adverse Income Shocks: Pensioner Out-Migration and Mortality in South Africa." ERSA Working Paper no. 113, Economic Research South Africa, Cape Town.
- Ranchhod, Vimal, and Taryn Dinkelman. 2008. "Labour Market Transitions in South Africa: What Can We Learn from Matched Labour Force Survey Data?" SALDRU Working Paper no. 14, Southern Africa Labour and Development Research Unit, University of Cape Town, Cape Town.
- Rogerson, Christian M. 1996. "Urban Poverty and the Informal Economy in South Africa's Economic Heartland." *Environment and Urbanization* 8, no. 1:167–79.
- Sagner, Andreas, and Raymond Z. Mtati. 1999. "Politics of Pension Sharing in Urban South Africa." *Ageing and Society* 19:393–416.
- Schöer, V., and M. Leibbrandt. 2006. "Determinants of Job Search Strategies: Evidence from the Khayelitsha/Mitchell's Plain Survey." *South African Journal of Economics* 74, no. 4:702–24.
- Serneels, Pieter. 2002. "The Added Worker Effect and Intrahousehold Aspects of Unemployment." CSAE Working Paper no. 2002–14, Centre for the Study of African Economies, University of Oxford, Oxford.
- Spletzer, James R. 1997. "Reexamining the Added Worker Effect." *Economic Inquiry* 35, no. 2:417–27.
- Stack, Carol. 1974. *All Our Kin: Strategies for Survival in a Black Community*. New York: Harper and Row.
- StatsSA (Statistics South Africa). 2006. "National Statistics System Division (NSSD) Measurement, Standards and Capacity Assessment: The South African Labour Force Panel Study Methodology Document 2006." http://sada-data.nrf.ac.za/bitstream/handle/10956/99/S0150_Rep.pdf?sequence=4.
- . 2013. "National and Provincial Labour Market Trends 2003–2013." Statistical release P0211.4. 5. <http://beta2.statssa.gov.za/publications/P02114/P021142013.pdf>.
- Stephens, Melvin. 2002. "Worker Displacement and the Added Worker Effect." *Journal of Labor Economics* 20:504–37.
- Tano, Doki K. 1993. "The Added Worker Effect: A Causality Test." *Economics Letters* 43:111–17.
- Verick, Sher. 2012. "Giving Up Job Search during a Recession: The Impact of the Global Financial Crisis on the South African Labour Market." *Journal of African Economies* 21, no. 3:373–408.
- Wilson, Francis, and Mamphela Ramphele. 1989. *Uprooting Poverty: The South African Challenge*. London: Norton.
- Yeung, W. Jean, and Sandra L. Hofferth. 1998. "Family Adaptations to Income and Job Loss in the US." *Journal of Family and Economic Issues* 19:255–83.