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Housing Costs and the Geography of Family Migration Outcomes

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Abstract

   This paper takes a geographic approach towards assessing the 'returns' to family

migration by addressing explicitly the impacts of differences in the cost of housing

between the place of origin and place of destination for family migrants. While numerous

studies have examined differences in labor-force participation and wages subsequent to

migration, particularly on the part of wives, few studies have considered the local

geographic context of these events. This study examines the "adjusted" outcomes from

migration for husbands, wives, and families in the United States in the context of local

housing costs. Our findings challenge the assumption of simple economic gains and

instead indicate that who gains and who loses from family migration is quite complex.

The geography of family migration is critical in determining gains and losses and is

interrelated with moves in and out of the labor market on the part of wives. Our research

indicates that wives who leave the labor market after a move are very likely to have

moved to a more affordable housing market. Conversely, wives enter the labor market

when the move is to a more expensive housing market. For this group, wives earnings go

a long way towards minimizing the impact on overall family earnings. This paper

provides an important contribution to understanding family migration by positioning the

analysis of migration outcomes within the context of labor markets and local housing

market costs.

Key words: family migration, housing markets, wives employment

Introduction

This paper advances our understanding of the impact of migration on wives, husbands, and families by explicitly addressing the geography of family migration. Theory dictates that the expectations of interregional labor market migration are about increases in income and opportunities that arise from migration. We examine these expectations and consider the economic returns to family migration for husbands, wives, and the household *adjusted* for the difference in the cost of housing between the origin and the destination labor market. Further, we examine the link between household labor-force dynamics and the geography of family migration by comparing the contributions of both husbands and wives towards changes in family income after migration for a variety of family types and based on the relative affordability or expense of migrant destinations.

Although studies of labor migration routinely consider the spatial variation in wage rates and employment opportunities as central to the migration decision-making process, sparse is the work that considers how the migration process is affected by local costs. With few exceptions, previous research focuses primarily on the labor-force participation of wives after migration, and much less on earnings. When earnings are considered, comparisons are made between the nominal earnings of nonmigrant and migrant wives.

Recently, Clark and Davies Withers (2002) reassessed the impact of family migration on wives, their husbands, and families. By using longitudinal data the authors were able to create a very precise measure of labor-force participation for both husbands and wives in the year prior to and subsequent to migration. That study confirmed that the labor-force participation of wives is extremely dynamic for migrants, movers, and those who

are residentially stable. They found that migrant wives were not necessarily disadvantaged by family migration; rather many wives re-entered the labor force relatively quickly. The importance of the synchronicity of other life-course events, such as the birth of a child with migration and the dynamics of women's labor-force participation, was confirmed also. That study established that the key to how households fare from migration is the combination of labor-force participation of the two partners.

This study makes an innovative contribution to the literature on interregional family migration by adjusting the differences in earnings by the relative difference in the cost of housing between origin and destination places of family migrants. Studies of interregional family migration, and in particular studies of the impact of family migration on wives, have seldom appreciated the local context of these moves. This paper argues that *geography is central* to an understanding of family migration and its impact on wives.

The paper proceeds by reviewing the theoretical foundations of interregional migration and family migration. The data and methodology for earnings adjustment are discussed in the next section. Specifically, the study addresses seven empirical questions. (i) What are the differences in nominal earnings for migrant husbands, wives, and families? (ii) What are the differences in adjusted earnings for migrant husbands, wives, and families? (iii) Do women's moves in and out of the labor market appear to be driven by changes in adjusted earnings associated with migration? (iv) Is migration to a more affordable destination associated with wives leaving the labor market? (v) Is migration to a more expensive destination associated with wives entering the labor market? (vi) For all households that move to a more expensive place, what are the labor force transitions and

earnings differences? (vii) For all households that move to a more affordable place, what are the labor force transitions and earnings differences? The paper concludes with a summary of the contribution of this research and suggestions for further research.

Theoretical Context

The purpose of this study is to challenge two enduring beliefs within the migration literature. The first is that migration leads to economic gains for families. The second is that family migration is detrimental to wives. The first is so enduring as to be practically tautological, and the second has been challenged only recently. A recent example of the intense belief in both these premises can be found in Smits (2001). After controlling for variation in human capital, Smits finds lower wages for migrant women and men compared to nonmigrants. The lower wages for migrant women he explains as the consequence of following the husband's career. However, confronted with wage decreases for male migrants Smits (2001: 599) asserts that, "Because people cannot be expected to make a long-distance move for their career if the gains from that move do not outweigh the costs, our results strongly suggest that before the move these men were in relatively unfavourable labor market situations." The language indicates it is inconceivable that migration would not be accompanied by wage gains for men. In contrast, lower wages for women are expected since wives defer to their husband's career.

These enduring beliefs stem from two dominant yet separate theoretical perspectives on migration: the labor theory of interregional migration and family migration theory that acknowledges gendered migration roles.

The labor theory of interregional migration assumes that people migrate from areas with relatively low wages and/or few employment opportunities to areas with higher wages and more employment opportunities. So central is this assumption that there remains a continuing belief that individuals and families experience favorable economic returns from migration. Traditionally, interregional migration literature has employed spatial variation in employment and wage rates to predict interregional population flows (Greenwood, 1985; Isserman et al, 1986; Gabriel et. al, 1993). This approach, an extension of human capital theory from the individual (Sjaastd, 1962) to the family, suggests that families migrate when the expected long-term economic returns benefit the family as a collective (Mincer, 1978). Migration is seen as a family investment in human capital and takes place if family benefits exceed family costs (DaVanzo, 1976). If net family gain determines whether a family moves and there is more than one worker, then one spouse may experience a loss from migration even though there is a total family gain. Any wage gain for one spouse must be weighed against the reduced wages or market opportunity for the other spouse.

Spatial variations in economic opportunities and compensation differentials are understood to reflect corresponding differentials in place-specific amenities and quality of life (Greenwood, 1981; Mueser and Graves, 1993). What is surprising is that although this reasoning has been the theoretical core of interregional migration studies for half a century, the relationship between cost of living and wage differentials based on individual or labor market characteristics is not widely known (Dumond et al, 1999). Interestingly, recent research has found a weak performance of unemployment and income variables in predicting migration destinations (Lee and Roseman, 1999; Pellegrini

and Fotheringham, 1999; Newbold, 1996). As well, in a cross-national comparison of the impacts of family migration, Boyle et al. (2001) note that although migration is usually assumed to be associated with economic betterment, this was not the case for all groups. Hence, it is timely to ask the simple question: Do migrants make gains?

A second theoretical stream informing family migration takes into account gendered migration roles. Traditional family migration research has argued that, due in large part to gender roles within the household and the greater economy, migration is detrimental to wives (Rytina, 1981; Markham, 1987; Maxwell, 1988; Shihadeh, 1991; Bonney and Love, 1991; Rives and West, 1992, 1993; Bruegel, 1996; Jacobsen and Levin, 1997). It is associated frequently with the loss of earnings (Smits, 1999), interrupted careers (Spitze, 1992), unemployment, underemployment (Morrison and Lichter, 1988), and leaving the labor force (Lichter, 1980; Marr and Millerd, 1988) on the part of the wife. The earnings of married women tend to be lower after migration (Mincer, 1978, Sandell, 1977; Spitze, 1984). Others have shown that the size of the effect on women's earnings is related to her share of household earnings (DaVanzo, 1976). Still others have confirmed that the most significant effect on reduced earnings is exits from the labor market (LeClere and McLaughlin, 1997). The benefit of migration to wives depends on whether they were employed prior to the move or not (Duncan and Perucci, 1976) or whether the move was motivated by their own career advancement or their partners (van Ham, 2001).

Others, however, have challenged whether family migration is detrimental to wives (DaVanzo, 1976; Bailey and Cooke, 1996; Cooke and Bailey, 1998; Clark and Davies Withers, 2002). Gendered migration theory suggests that the detrimental aspect of family migration for wives will persist due to the differential labor-market attachment of

women, the division of labor within dual-earner households, the persistent gender gap in wages, and women's geographic access to job opportunities in urban labor markets (Halfacree, 1995). Fielding and Halford (1993) have questioned whether it is always true that men benefit more than women from interregional migration regardless of origin and destination. Although their focus is the connection between spatial mobility and social mobility, they raise an important question regarding the spatial variation in benefits and returns to migration for men and women. Is there a geography to the returns of migration for wives and their families?

Generally, geography is addressed in the family migration literature either through case studies of a specific place (such as New York or the Midwest), or to explain differences in the propensity of families to migrate. As well, Bailey and Cooke (1998) established the importance of migration history in discerning the effects of family migration on employment outcomes for women. Sheilds and Shields (1993) used a more explicit account of geographic variation with their concept of 'location rent' which they define as the payment that would be necessary to compensate a family to move. Location rent is determined by market variables, household characteristics, and locational characteristics, such as regional amenities. They found that the spatial variation in 'location rent' helped in understanding geographic differences in the propensity towards family migration. It is reasonable to believe that it will also assist our understanding of wives' labor-force participation after migration. There are distinct geographic variations in female labor-force participation rates (Ward and Dale, 1992).

Theoretically, the cost of living influences the labor-force participation of wives by altering the real value of labor and nonlabor wages and hence the decision to participate

(Smits, 2001). The cost of living is also likely to reflect local amenities in a spatial setting (Fosu, 1999). However, since virtually all studies of the economic returns of migration for wives and their families use nominal earnings, we argue that the importance of the local geography of these moves has been overlooked. The cost of living varies considerably from place to place and nominal earnings comparisons mask these variations in the 'returns' to migration. The presence of numerous internet sites with city "cost of living" calculators suggests that cost-of- living differences play a substantive role in private location and wage decisions (Dumond et al, 1999). However, the geographic variation in the cost of living has yet to be included explicitly in family migration research. The only study to date to use both real and nominal earnings measures is DaVanzo and Hosek's (1981) study of whether migration increases wage rates. Interestingly, this study was amongst the first to control for sample selection bias and does not support the conclusion that migration consistently increases wage rates. Unfortunately, the authors do not compare the differences between real earnings before and after migration. In this study we adjust changes in nominal earnings for the cost of housing to determine whether migration is detrimental to wives and their families, given the geography of these moves.

Married women are an important component of spatial changes in the labor force, by virtue of their increased participation and their impact on family migration in general (Halfacree, 1995). The number of wives in the labor force has doubled over the past three decades and household migration behavior is increasingly dependent on a complex process of joint decision making. Long distance commuting is increasingly being adopted as an alternative strategy for families instead of migration (Green et al ,1999). A better

understanding of the joint employment and location decisions of husbands and wives has the potential to improve the efficiency of the labor market. Industry and organizations in the United States invest about 15 billion dollars annually in job relocations (Shields and Shields, 1993). As Jarvis (1999: 1032) asserts, there remains a need to integrate issues of housing, employment, and household labor-force dynamics since macroeconomic trends in housing markets and labor markets are mediated by a dynamic household micro-economy. The challenges for women and men of balancing work and family has risen to the top of the research agenda in many of the social sciences (Hakim, 2000; Kimmel and Hoffman, 2002). This paper unpacks these household dynamics and challenges the two enduring beliefs about family migration. In essence, this paper aims to provide an empirical assessment that goes beyond the economic assumptions of the human capital model to better represents our theoretical conceptions of family decision making.

Data Source and Methodology

This study uses the Panel Study of Income Dynamics (PSID) enhanced with the geographic location of households (geocodes). The PSID is a longitudinal data file that has tracked families and the individuals in those families since 1968. The PSID is well suited to this study because it provides repeated annual measures of income levels and sources, labor-force participation, mobility behavior, family composition changes, and so forth for both husbands and wives. Migration is defined as a move between labor market areas, distinct from moves within the same labor market area. For families, the former usually are associated with employment opportunities, whereas the latter tend to be motivated by housing market adjustments within the same labor market area. Labor market areas were determined by matching the geocodes with 1990 census boundaries for

commuting zones. The geocodes were also used to match county level information about median household income, median gross rent, and median housing value, obtained from the 1990 Census STF3A detailed geography.

This study is restricted to the period 1986-1993, during which labor-force participation was measured monthly for both husbands and wives and migration was measured in each panel. We use the monthly measures of labor-force participation in combination with the month and year a family migrated to develop a very precise measure of labor-force participation and earnings for the exact 12 months before and after migration occurs for husbands, wives, and families (see also Clark and Davies Withers, 2002). We include all migrant married couple households between the ages of 18 to 65 years regardless of their labor-force participation. The final sample consists of 321 families. At the outset, it is important to consider the nature of this sample of family migrants.

Longitudinal datasets such as the PSID present challenges and opportunities not found in cross-sectional data. It is not uncommon for longitudinal surveys to suffer from attrition, which is related frequently to migration and residential mobility. The PSID, however, has continued for over three decades and an enormous effort is expended annually to track panel participants. While attrition was fairly high in the first year, it has been very low since the second wave. Independent studies have found no appreciable bias resulting from attrition (PSID, 2003). While certain demographic groups (such as minorities or the poor) are more likely to attrite, these same demographic groups initially were over-sampled to compensate for these differences and ensure representation. Numerous members of the PSID have moved repeatedly, and annual mobility figures are

similar to those derived from national cross-sectional sources. Unfortunately, some migrating families in the PSID could not be included in this study due to the absence of county information. T-tests of age, husband's income, and wife's income before and after the move between the two groups indicated no statistically significant difference. Therefore although the sample size is reduced by the missing geographic data, no apparent bias is introduced.

Lastly, family migrants are a select group. Generally, families with working wives are less likely to migrate. Recent studies of the effects of family migration on the labor-force participation and earnings of wives tend to employ statistical correction methods designed to account for this sample-selection bias (Heckman, 1979; Cooke and Bailey, 1996; LeClere and McLaughlin, 1997; Smits, 1999, 2001). Interestingly most of these studies have disputed the disruption hypothesis (Clark and Withers, 2002). However, these methods are not applied in this study. The sample of family migrants is a select group, but since they are not being compared to any other group there is no selection bias to account for.

The purpose of this paper is to consider the geography of family migration by comparing nominal earnings with earnings adjusted for the difference in the local housing markets between the origin and the destination. Ideally one would want to compare the real cost of living between origin and destination. Unfortunately, there is no readily available source of data for accurate cost-of-living measures for places across the United States. Within the literature, three general approaches have been utilized to measure interarea cost of living: the construction of indexes based on area price surveys (e.g. BLS, 1982; ACCRA, 2001); econometric methods (e.g. Fosu, 1999; McMahon, 1991; Nelson,

1991); and hedonic regression (e.g. Moulton, 1995; Kokoski et al, 1994; Malpezzi et al, 1998).

The Bureau of Labor Statistics (BLS) discontinued its publication of comparative cost-of-living indexes for 44 MSAs in 1981, but continues its collection of price data for a number of MSAs for its Consumer Price Index (CPI) program. The currently published MSA-level CPI measures are weighted by local consumer expenditures, and hence are not comparable across areas, since the basket of consumer goods is different in each area. The BLS is currently conducting research on ways to take advantage of the large amount of price data collected for the CPI for interarea comparisons through the use of hedonic quality adjustments (Kokoski, 1991; Kokoski et al, 1994). The only regional cost-of-living index regularly published is that of the American Chamber of Commerce Research Association (ACCRA), available quarterly for a number of MSAs. Unlike the BLS index, the ACCRA index measures an identical basket of goods across MSAs, using household spending weights from the Consumer Expenditures Survey of 1992 (ACCRA, 2001). Unfortunately, the sample is voluntary, and the number of MSAs covered each quarter varies. Moreover, numerous studies have found the ACCRA index to be unreliable (Dumond et al, 1999,) and subject to significant bias from various sources, including sampling error, sampling bias, and aggregation bias (Koo, 2000). It also does not include a number of key metropolitan areas (Fosu, 1999).

In the absence of complete coverage from any cost-of-living index, some researchers have employed econometric methods for estimating interarea cost-of-living indexes for areas not included in a survey-based index series. The econometric approach has two steps. First, an estimation equation is fitted with a survey-based cost-of-living index as

the dependent variable and commonly available measures, such as median house values, population change, and personal income, as regressors. Additional regressors sometimes include regional dummy variables, unemployment rates, climate variables, right-to-work laws, population density, and price of new homes (Nelson, 1991). Second, the resulting equation is used to predict the cost of living in areas out of the sample (McMahon, 1991; Nelson, 1991). Fosu (1999) uses this technique in calculating the cost of living for 150 MSAs, using the BLS cost-of-living index for 1980 for 24 MSAs as the dependent variable. He uses only median home values and regional dummies as dependent variables. He then uses the cost-of-living variable in modeling the labor-force participation of married women in urban labor markets.

In both survey-based and econometric models the cost of living is typically most closely associated with the price of housing (McMahon, 1991). Residential rent and owners' equivalent rent together account for about 25 percent of the weight in the total CPI. Moreover, interarea variation in cost of shelter tends to be larger than interarea variation in prices of other commodities and services (Moulton, 1995: 182). Consistently, housing costs are a highly significant variable in attempts to estimate regional cost of living (Fosu, 1999; McMahon, 1991; Nelson, 1991).

The third general approach is hedonic regression. Hedonic pricing is based on the premise that the price of a marketed good is related to its characteristics. For example, the price of a home reflects the characteristics of that home. To control for differences in housing quality some studies use hedonic modeling in valuation of housing. Moulton (1991) estimates alternative hedonic price models for quality-adjusted interarea cost of housing indexes. His models use rent (or CPI-adjusted rental equivalent for owners) as

the dependent variable and structural characteristics, contractual characteristics, and neighborhood characteristics as the independent variables. In essence, instead of comparing prices directly across areas, a hedonic model allows one to compare the marginal price imputed to housing characteristics across areas. Similarly, housing costs play an important role in hedonic wage models which underscore that high wages or low housing costs compensate for poor regional amenities (Knapp and Graves, 1989; Shields and Shields, 1993).

None of the above approaches provides a satisfactory method for adjusting nominal income in the PSID. The few cost-of-living indexes available are unreliable, dated, and limited in coverage. Our geography of origin and destination counties for the sample of migrant families from the PSID includes a significant proportion of nonmetropolitan areas. Lastly, hedonic approaches move the analysis in the opposite direction from the interest of this research. Hedonic modeling is appropriate when one wants to control for the variation in housing costs beyond the quality and quantity of the house itself. For the purpose of this research it is an *advantage* that housing costs represent not only real differences in economic costs but also subjective valuations of local environmental conditions and amenities.

In this study we develop a simple approach to adjust nominal earnings by calculating the ratio of median housing costs to median family income at the origin and the destination. We then calculate the difference between the housing-to-income ratio at the destination and the origin. A positive measure indicates a move to a more expensive place, whereas a negative value indicates a move to a more affordable place. For example, if the origin place has a median home value of $150,000 and a median family

income of $50,000 then the ratio of the two is 3:1. If the destination place has a median home value of $300,000 but the median family income is $50,000 then the ratio of the two is 6:1. We then take the ratio of the housing costs-to-income at the destination to the housing costs-to-income at the origin and use this as a multiplier to adjust the change in nominal earnings for the variation in the cost of housing. The adjusted difference in family earnings is calculated by multiplying the family wages after the move by the cost-of-housing multiplier, and then subtracting this value from the premigration family wages. Similarly, the husband's or wife's difference in earnings is calculated by multiplying his or her postmigration wages by the cost-of-housing multiplier and then subtracting this value from their premigration wage level. So, *ceteris paribus*, using the figures from the previous example, to have similar real earnings in the destination as the origin one would need to earn $100,000. More to the point, to say that there are no earnings differences for such a migrant is true in nominal terms but is a gross underestimation in real terms. In real terms there is a significant reduction in earnings.

To clarify, this adjustment mechanism in no way reflects the amenity value of the origin and destination. It does not indicate whether one place is 'better' or 'worse' than another in qualitative terms. Two places may have the same ratio of housing costs-to-income, yet strikingly different absolute values for median family income and housing costs. As well, housing is complex because it is both a consumption good and an investment good. Some families may move to more expensive housing markets cognizant that their home will serve as an investment. Short-term costs may lead to long-term gains. Similarly some may move and benefit from simultaneously liquidating their investment and entering a cheaper housing market. This assessment of migration outcomes reflects

the immediate differences and not necessarily financial outcomes that will prevail over the long term. Nonetheless, earning a similar amount of family income but being situated within a much more expensive housing market is a measurable outcome from family migration, regardless of the long-term impact of housing wealth.

A large body of econometric modeling has consistently upheld that differences in housing costs represent the lion's share of differences in the cost of living between places (Moulton, 1995). To further assess the reliability of our earnings adjustment procedure, we used U.S. census data in a series of ordinary least-squares regression models to test the relationship between housing costs and family income. We used five different model specifications, and for each of the five we applied a separate regression model to owners and renters (Table 1).

Model 1 is an area model that uses census data for the 284 MSAs and CMSAs in the United States as defined by the 1990 census. For owners, we regressed median family income against median housing values, median housing values squared, and the natural logarithm of the population of the area. For renters, the independent variables are median gross rent, median gross rent squared, and the natural logarithm of population. These are intentionally simplistic models meant only to determine to what extent the variation in housing costs across MSAs helps us to predict the variation in median family income. The model produced an R-squared value of 0.55 for owners and 0.59 for renters, rather high values for such a simple model specification.

Model 2 is a pairwise regression of all possible destination/origin pairs of the 284 MSAs from the 1990 Census (without double counting n=40,185). This pairwise model uses the same variables, but in ratio form specified by destination/origin. Unlike the

previous model, this specification determines how much of the variation in the ratio of median family income measured between pairs of MSAs can be explained by the variation in the ratio of median housing costs between pairs of MSAs. The results (Table 1) show an R-square value of 0.49 and 0.54 for owners and renters, respectively. These are slightly lower values than those found in model 1, but still suggests that the bulk of the difference in median family income from one place to another is explained by the difference in housing costs from one place to another.

While this is encouraging, the previous models are applied at the MSA scale, whereas our PSID data is measured at the county level, a much more refined scale for measuring median family income and housing costs. To further test the validity of our income adjustment method, Models 3 through 5 were specified at the county level using PSID data. Model 3 is an area model for all unique counties contained in our PSID family migrant sample. The sample consisted of 321 cases, with 348 unique origin and destination counties. The dependent variables are the same as those in model 1. The results indicate a greater ability to predict the variation in median family income at the county level using measures of median housing costs and county population size. The R-squared value for owners is 0.70 and for renters it is 0.76.

Model 4 is a pairwise model restricted to cases contained in the PSID migrant family sample. Like Model 2, the variables are expressed in ratio form (X_{dest} / X_{origin}). These results are also strong, with R-square values of 0.63 and 0.67 for owners and renters, respectively. Lastly, Model 5 is a pairwise model encompassing all possible origin-destination pairs of the 348 unique counties contained in the PSID family migrant sample (with no double-counting n=60,377). Again the variables are expressed in ratio form. The

findings indicate an R-square value of 0.64 for owners and 0.72 for renters. Therefore, especially at the county level, the difference in median family income from one county to another is explained largely by the difference in housing costs between the counties. These empirical findings provide convincing evidence of the strong relationship between housing costs and median family income. These results validate the use of housing costs as a strong proxy for differences in the cost of living from one place to another.

Findings

Who gains and who loses from migration?

Table 2 provides the average housing and income values for origins and destinations of all migrant families in the sample. Overall the median home value at the origin was $86,815 with a median family income of $35,024. At the destination, the median home value was $82,895 and median family income was $34,777. Using the adjustment method outlined previously, the average housing-to-income ratio at the origin was 2.33, and at the destination it was 2.27. The difference between these two measures is a small negative value (-.06) which indicates that on average families moved to slightly more affordable places. These findings confirm the relatively conservative nature of this adjustment procedure.

When disaggregated by the geography of these family moves the impact of changes in the cost of housing relative to changes in income level are striking. For moves to more affordable destinations, the median home value at the origin was $107,661 with a median family income of $37,250. At the destination median home value was $71,586 and median family income was $33,889. This corresponds to average housing-to-income ratios of 2.73 and 2.03 at the origin and destination, respectively, and the average cost-of-

housing multiplier is 0.80. For example, in nominal terms a family that earned $50,000 before and after migration would have no measurable earnings change. However, given a multiplier of 0.8 for the more affordable destination, the households adjusted earnings would be an increase of $10,000 ($50,000 - $50,000*0.8).

The opposite effect of course holds true for the more expensive destinations. The median home value at the origin was $63,080 with a median family income of $32,489. At the destination these figures increase to $95,770 and $35,789, respectively. Families that moved to more expensive destinations went on average from a place where the housing cost-to-income ratio was 1.87 to a place where it was 2.55, and average cost-of-housing multiplier is 1.39. Using the same example of a family that has no nominal change in earnings when they earn $50,000 before and after migration, the average family moving to a more expensive destination would in fact incur a reduction in earnings of $19,500.

The impact of whether households move to a more affordable or a more expensive destination is profound for considering the 'return' to migration. These findings challenge the enduring belief that generally migration is economically beneficial. It is clear that the geographic specificity of where people move from and where people move to has a *profound* impact on the economic 'returns' of migration.

Gender differences in benefits of migration

One question that remains is whether the geography of family migration lends further insight into gender differences in the 'returns' to migration. Figure 1 displays the mean difference in nominal earnings for migrant families by the cost-of-housing differences at the destination. The graph includes mean differences in wives' earnings, husbands'

earnings, and family earnings. For all migrant families the nominal returns to migration are practically nil. Husbands on average earn just over $1000 more but wives earn just over $1000 less. This image represents the classical assumptions regarding the returns to family migration: the husband experiences economic gain but the migration has a negative impact on the earnings of wives.

If we disaggregate these moves by the geography of the destinations we find predictable differences that reflect the wage effect. Generally, wages are higher in large expensive metropolitan areas, and lower in smaller, more affordable places. For the migrant families that moved to more affordable places, the families overall do not benefit in terms of nominal earnings, due to both the wage effect and wives' earnings being considerably reduced. In contrast, for migrant families that moved to more expensive places the families benefit in terms of nominal earnings, again due to the wage effect. Wives are only modestly impacted from these moves.

So, nominally there are gender differences in the impact of migration by the level of affordability of the destination. Women are negatively affected when moving to a more affordable place and virtually unaffected when moving to a more expensive place. Men are virtually unaffected when moving to a more affordable place and benefit in terms of nominal earnings when moving to a more expensive place.

An entirely different scenario presents itself once the differences in earnings have been adjusted for differences in the cost of housing between the origin and the destination. Figure 2 indicates that overall on average households do not gain from migration in terms of family earnings. For men the transition is a wash since the bulk of the family loss is derived from the negative impact of migration on wives' economic

returns. Yet, once these migrations have been disaggregated by the relative affordability or expense of the destinations there are very stark and rational differences. Families migrating to more affordable destinations, while negatively impacted in terms of nominal wage differences, have sizeable gains once the cost of housing is taken into account. On average these families have about a $7500 gain. Interestingly, wives also gain, although the main contribution to family earnings comes from the husband's earnings. On the other hand, migrant families that move to more expensive places, while nominally benefiting from a higher wage rate, actually lose considerably once the cost of housing is factored. An average family loses just over $12,000 from these moves. More interesting still, husbands and wives appear to share equally in this loss, whereas they did not share equally in the nominal gains. This contrast begs the question of the extent of labor-force participation on the part of wives prior to the migration.

Figure 3 displays nominal and adjusted earnings differences from migration for husbands, wives, and families who have migrated to more affordable and more expensive destinations. It is restricted to one-worker households prior to the move. Figure 4 displays the same information for families that were two-worker households prior to the move. To clarify, a one-worker household is a household in which one partner (almost always the husband) works continuously (defined as 10 months or more) in the year prior to migration. The partner (almost always the wife) does not participate continuously, meaning she either never works or works for less than 10 months prior to the migration. Hence the partner has earnings as well as the primary worker.[1]

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[1] See Clark and Davies Withers (2002) for a further explanation of the variation in labor-force participation by married couples before and after migration.

Families with one primary worker prior to migration do not have economic gains from migration in nominal terms when they move to more affordable destinations (figure 3). Neither do families with two workers prior to migration (figure 4). Interestingly, in both cases men on average make a slight increase in earnings. Once the earnings are adjusted for differences in the cost of housing, one-worker families do gain economically from the transition (figure 3). Husbands have sizeable gains and wives have slight losses. Two-worker families gain far more economically from the move to a more affordable location. Husbands gain in similar magnitude to one-worker families, but wives also gain a considerable economic return.

Moves to more expensive destinations indicate that one-worker families have modest nominal gains (figure 3) whereas two-worker families have more considerable nominal gains (figure 4). For two-worker families however virtually all of the gain is driven by the husbands' earnings. Wives on average have only a miniscule change in earnings subsequent to migration. This suggests that wives are following husbands to more expensive destinations that represent nominal returns for the husband. Again, once adjustments have been made to these nominal measures we see strikingly different scenarios. One-worker families that move to more expensive places experience on average a loss of over $16,000 from the migration. For two-worker families the magnitude of the loss is closer to $10,00 on average and is shared virtually equally by the husband and wife. It has been well documented (Boyle, 2001; LeClere and McLaughlin, 1997) that migration has a negative effect on wives' labor-force participation and earnings. These findings can be further clarified by appreciating the connection between

the geography of family migration and the household labor-force dynamics that accompany these moves.

The link between household labor-force dynamics and the geography of migration

We examine four types of labor-force dynamics among family migrants. Each type has the husband working continuously before and after the migration. The differences lie in the labor-force behavior of the wives. Wives can be (1) discontinuously in the labor force both before and after the migration; (2) continuously in the labor force both before and after migration; (3) continuously in the labor force before and discontinuously after migration; or (4) discontinuously in the labor-force before and continuously after migration. The last two types reflect wives who leave and those who enter continuous employment, respectively.

Is migration to a more affordable destination associated with wives leaving the labor market? Is migration to a more expensive destination associated with wives entering the labor market? The evidence suggests support for both of these conjectures. Table 3 lists the housing-to-income ratios and adjusted earnings differences between origins and destinations by labor-force participation of the husband and wife before and after migration. Note that there is not a great deal of difference in the average housing-to-income ratio at the origin and destination for migrant families in which the husband is continuously employed before and after and the wife is discontinuously employed before and after migration. Yet, overall, this family type experiences economic losses from migration. Similarly, there is not a great deal of difference in the average housing-to-income ratio at the origin and destination for migrant families in which both the husband and the wife are continuously employed before and after migration. However, this family

type does benefit on average. For families where the wife was continuously employed prior to migration yet discontinuously employed after migration the average migration is to a more affordable place. In fact, this group has the highest average housing-to-income ratio at the origin (2.51) and the lowest at the destination (2.14) of all of these four family types. By virtue of the wife's labor-force dynamics the family does not gain economically, but the husband does experience, on average, an increase in adjusted earnings. However, the opposite holds true for households that have women entering continuous labor-force participation subsequent to migration. The average housing-to-income ratio at the origin is 2.38 and at the destination it is 2.85. This is the most expensive destination of the four groups. As well, husbands experience a significant decrease in earnings, yet the wives increase in earnings appear to go a long way towards minimizing the impact on overall family earnings.

It has been well established that wives move in and out of the labor market frequently, especially in association with migration (LeClere and McLaughlin, 1997; Clark and Davies Withers, 2002). The evidence presented here suggests that an important element of wives' labor-force participation subsequent to migration is the relative affordability of the destination. To examine the link between household labor-force dynamics and the geography of family migration, we examine the contributions of both husbands and wives to changes in family earnings after migration for the four family types and for relatively affordable or expensive destinations compared to the place of origin (figures 5-8). Figure 5 displays the husband and wife contributions to family earnings change for households with a continuously employed husband but a discontinuously employed wife before and after migration. Overall, husband's nominal

earnings increase and the wife's nominal earnings decrease. In adjusted terms, overall both partners lose financially. Disaggregating by destination, for both more affordable and more expensive locations, husbands gain nominally, where as wives' earnings decrease in both nominal and adjusted terms for either destination type. Adjusted earnings tell a different story for husbands. Husbands' adjusted earnings increase greatly when moving to a more affordable location, but decrease even more when the destination is more expensive. Of all of the various types of moves based on family employment types and the geography of the destination, families with the wife discontinuously employed before and after are amongst the greatest gainers, *provided they move to a more affordable destination*. In contrast, these families are the greatest losers when they move to a more expensive destination. The earning differences of wives are only a small part of this loss.

Figure 6 displays the relative contributions from husbands and wives to family earnings change after migration for families in which the wife became continuously employed after migration. In nominal terms, wives overall contribute the majority of the gain in family earnings these families experience. In adjusted terms, the husbands' earnings are considerably reduced yet the impact is largely offset by the wife entering the labor force continuously. While the absolute values are greater, the relative shares between husband and wife are very similar when families move to more expensive destinations. In nominal terms they both gain, but in adjusted terms wives' earnings gain has little impact relative to husbands' earnings loss. The husbands' and wives' share of earnings gains for moves to affordable destinations are distinct. Nominally he earns less

and she earns more by virtue of entering the labor-market. Yet in adjusted terms they both gain.

Figure 7 displays the partners' shares of family earnings change for couples both continuously employed before and after the migration. Overall, these households gain nominally and in adjusted terms, more so in the former than the latter. For families that moved to a more affordable destination her nominal earnings, on average, change very little and the bulk of the family gain is from his wage differences. Yet, once these figures are adjusted for the cost of housing this group is the largest gainer of all migrant families, on average. She contributes about one-third of the adjusted family gains from migration. Interestingly, when these households move to more expensive destinations she gains more in nominal terms than he does, on average. Yet, overall, when adjusted for the cost of housing these families experience a significant financial loss from migrating to a more expensive destination.

The families represented in figure 8 are similar to those just discussed but differ in that the wives are no longer continuously employed after migration. Overall, due to her becoming discontinuously engaged in the labor force, family earnings decrease in both nominal and adjusted terms. Moves to expensive destinations are associated with nominal gains for the husband but again, once adjusted, such moves represent significant economic disadvantage for families. Arguably, the most interesting shares of family earnings change are found for these families moving to more affordable destinations. In nominal terms *neither* gain from migration. In fact, these families take a significant financial knock that is not completely accounted for by the wife leaving continuous engagement in the labor force. Yet, an entirely different scenario appears once the

earnings changes are adjusted for the cost of housing. The wife's loss is relatively small, in both relative and absolute terms, and the husband gains significantly. The move to a more affordable destination more than compensates for the wife leaving continuous employment.

Conclusion

The findings reported in this paper advance our understanding of migration in general and family migration in particular. The real advance of this paper is to show that it is essential to set the relocation decision and behavior within a geographic context. What might seem to be a single economic gain may be a more complex outcome placed in the context of local housing market costs.

The paper has challenged the dual notions that (a) migration leads to economic gains for families and (b) that migration has negative outcomes for women. The research reported in this paper shows that there are very important outcomes based on whether the migration is to a more expensive or a more affordable housing market. Families that make the transition to more affordable markets in general benefit financially, hardly a surprising outcome, but it is the difference between nominal and adjusted earnings that is important. Families that migrate to more affordable destinations may be negatively affected nominally but have sizeable adjusted gains. Wives gain as well. Families that move to more expensive places benefit nominally but lose in adjusted earnings.

The outcomes for women are also geographically dependent. For one-worker households, husbands have big gains and wives small losses in adjusted terms. In two-worker households both husbands and wives have gains nominally. The adjusted returns are very much dependent on whether or not they move to relatively more expensive or

more affordable housing markets. The family has an overall loss but the loss is shared equally by husbands and wives.

The research supports the notion that wives exit the labor market when the move is to a more affordable place. Wives who leave the labor market after a move are very likely to have moved to a more affordable housing market. Conversely, wives enter the labor market when the move is to a more expensive housing market. For this group, wives earnings go a long way towards minimizing the impact on overall family earnings.

The current paper introduces a new and important aspect of family migration by positioning the analysis in the context of local labor and housing market costs. Gains and losses can only be assessed in the context of the transition between local housing markets. A gain can only be a gain in relative terms and similarly a loss can only be a loss in relative terms. Using assessments of nominal earnings is not the way to analyze migration outcomes. In addition, the dynamic role of women as they enter and exit the labor market is much more critical in the analysis of outcomes than has been documented previously. Women's labor market behavior is dynamic and complex.

The paper has not provided all the answers to the way in which family migration is played out as households move from place to place. For example, we have not specifically assessed the effects of family composition changes, nor the nature of occupational changes that may have accompanied these moves. We have yet to consider variations that may be related to the wives contribution to family earnings. While this paper made a distinction between more expensive and more affordable housing markets, the connection between the magnitude of these differences and labor force dynamics has yet to be examined. These factors can and will be addressed in future research. However,

we believe that we have changed the context in which family migration must be discussed. Without a specific recognition of the local housing market costs it is not possible to make an informed analysis of the costs and benefits of family migration. Clearly, there are many, many reasons for families to migrate. This research indicates, beyond doubt, that economic gain is only one of many motivations. In fact, for many migrant families, the experience involves significant economic costs. As a commodity, housing has both consumption value and investment value. It may be the latter that encourages families to locate and invest in expensive housing markets. Beyond all else, this research encourages a much more comprehensive consideration of why families move, and geography is at the core of understanding the complexity of these decisions. There are profound economic benefits for families moving to more affordable destinations. Regional amenities, families and social networks, preferences for community size, quality of schools, and quality of life are but a few factors that vary geographically and motivate the family migration decision. Geography is central to our understanding of who gains and who loses from family migration.

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Table 1: Model results from regression analyses predicting median family income

	1990 Decennial Census (MSAs)				PSID migration sample households (counties)					
	Model 1			Model 2	Model 3		Model 4		Model 5	
	Owners	Renters	Owners	Renters	Owners	Renters	Owners	Renters	Owners	Renters
ANOVA & Fit										
N	284	284	40,185	40,185	398	398	355	355	79,002	79,002
F-Value	115.9	133.7	12,907.1	15,798.2	312.8	427.1	198.4	236.9	47,169.0	66,349.3
p	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
R-square	**0.55**	**0.59**	**0.49**	**0.54**	**0.70**	**0.76**	**0.63**	**0.67**	**0.64**	**0.72**
Adj. R-square	0.55	0.58	0.49	0.54	0.70	0.76	0.63	0.67	0.64	0.72
Parameters (standardized)										
Median house value	1.43				1.59					
Median house value (sq)	-0.87				-0.99					
LN Population	0.18				0.13					
Median rent		1.17				0.75				
Median rent (sq)		-0.47				0.10				
LN Population		0.11				0.03				
Ratio destination:origin										
Median house value			1.10				1.67		0.97	
Median house value (sq)			-0.56				-1.14		-0.45	
LN Population			0.16				0.09		0.2	
Median rent				0.88				1.28		1.09
Median rent (sq)				-0.20				-0.47		-0.28
LN Population				0.09				-0.02		0.02

Note: All estimated parameters significant at .01 level.

Table 2: Housing and income values comparing origin and destination of migrant families

Variable	All Destinations (mean)	Destination More Affordable (mean)	Destination More Expensive (mean)
median home value origin	$86,815	$107,661	$63,080
median home value destination	$82,895	$71,586	$95,770
median family income origin	$35,024	$37,250	$32,489
median family income destination	$34,777	$33,889	$35,789
origin housing-to-income ratio	2.33	2.73	1.87
destination housing-to-income ratio	2.27	2.03	2.55
difference between destination and origin	-0.06	-0.70	0.68
Cost-of-housing multiplier (ratio of destination to origin)	1.08	0.80	1.39

Table 3: Housing-to-income ratios and adjusted income differences between origins and destinations by labor market participation of husband and wife before and after the migration

Variable	Husband Continuous, Before and After Wife Discontinuous, Before and After	Husband Continuous, Before and After Wife Continuous, Before and After	Husband Continuous Before and After, Wife Continuous Before and Discontinuous After	Husband Continuous Before and After, Wife Discontinuous Before and Continuous After
	n=101 (means)	n=82 (means)	n=48 (means)	n=30 (means)
Housing-to-income ratio at origin	2.49	2.21	2.51	2.38
Housing-to-income ratio at destination	2.44	2.16	2.14	2.85
Difference	-0.04	-0.05	-0.38	0.47
Ratio of Origin-to-Destination	1.09	1.04	0.99	1.31
Difference in Adjusted Income				
Husband's	-$1,178	$817	$640	-$3,852
Wife's	-$2,779	$266	-$4,633	$2,389
Family	-$3,957	$1,083	-$3,993	-$1,463

Figure 1: Mean Difference in Nominal Earnings for Migrants by Cost of Housing Differences
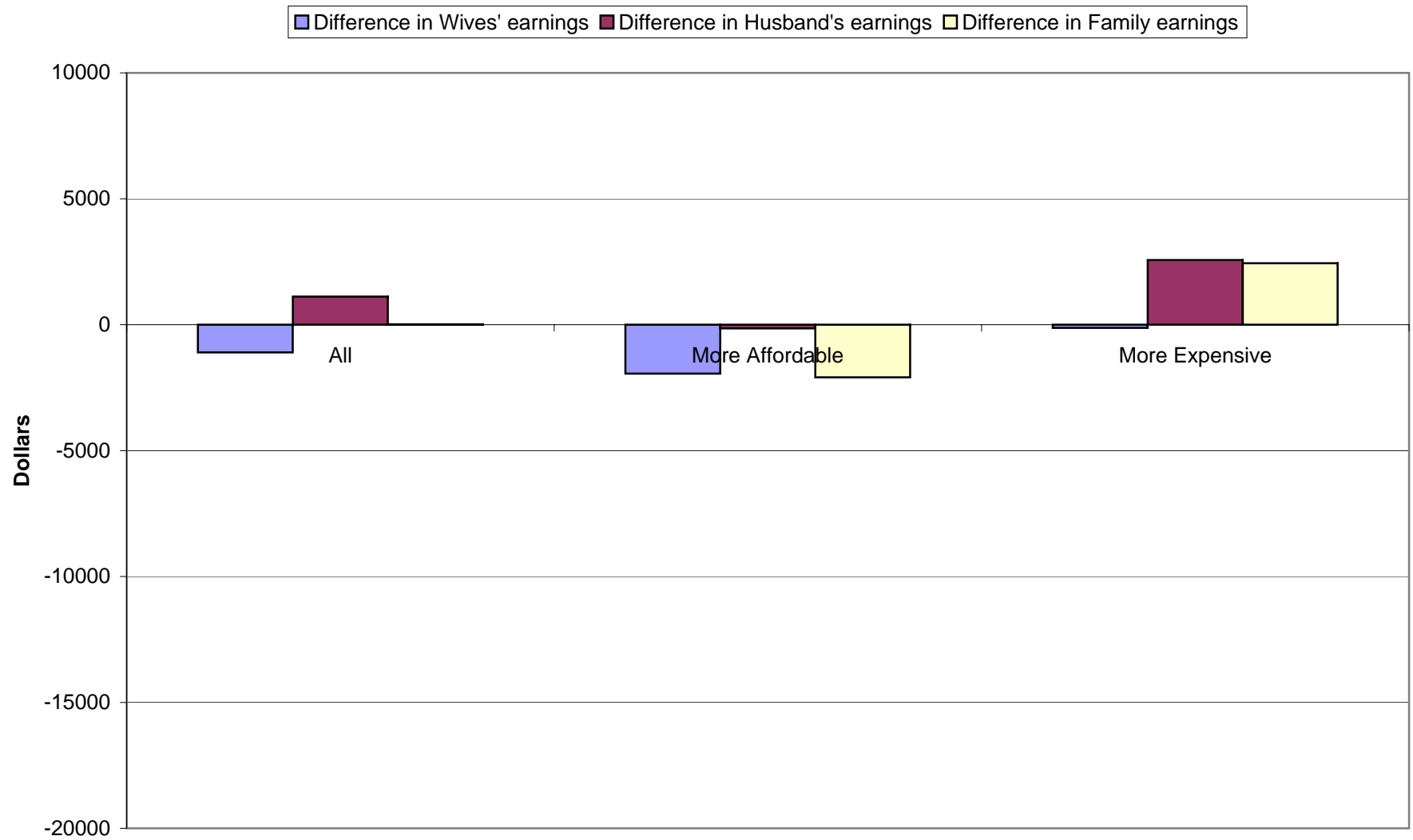
Figure 2: Mean Difference in Adjusted Earnings for Migrants by Cost of Housing Differences
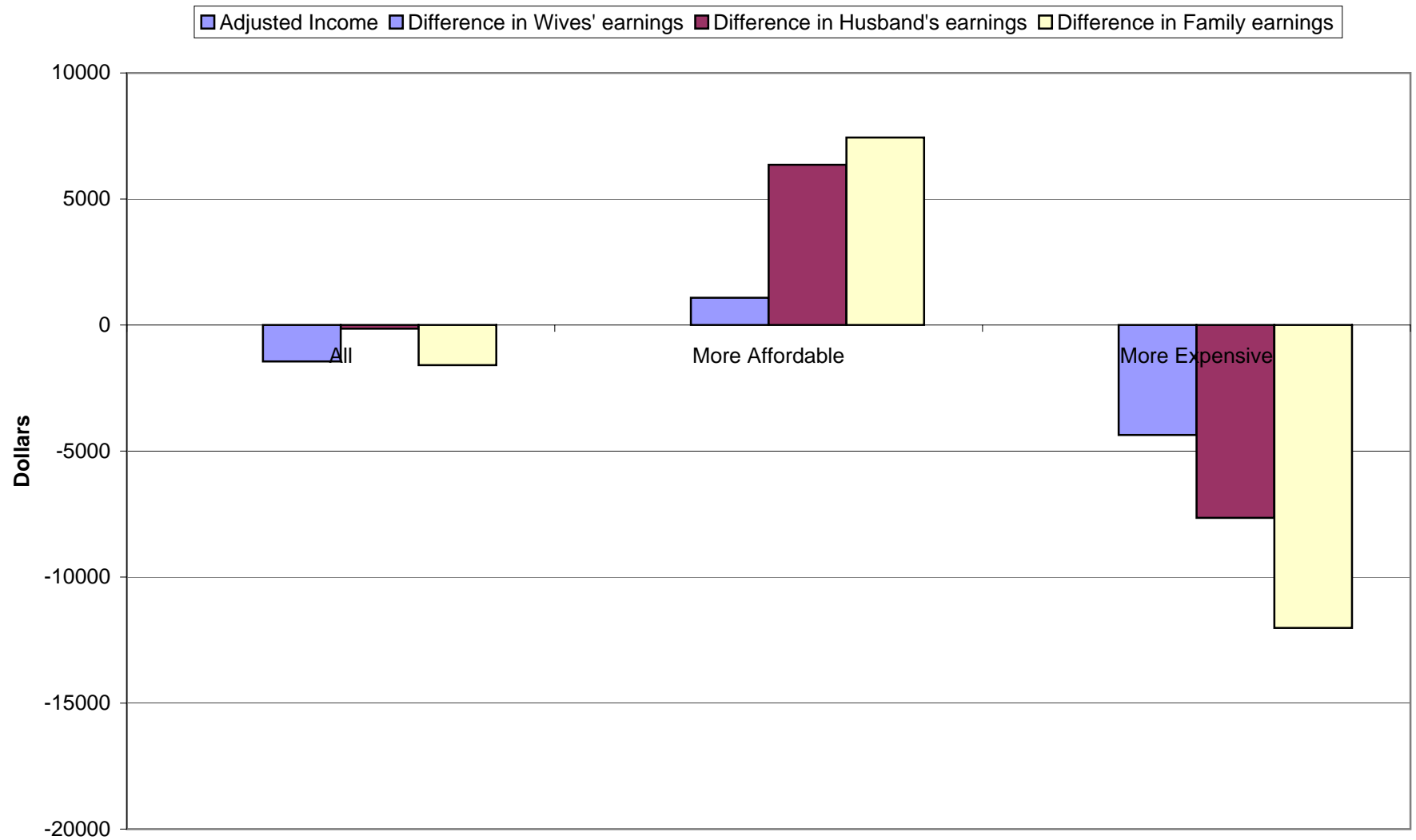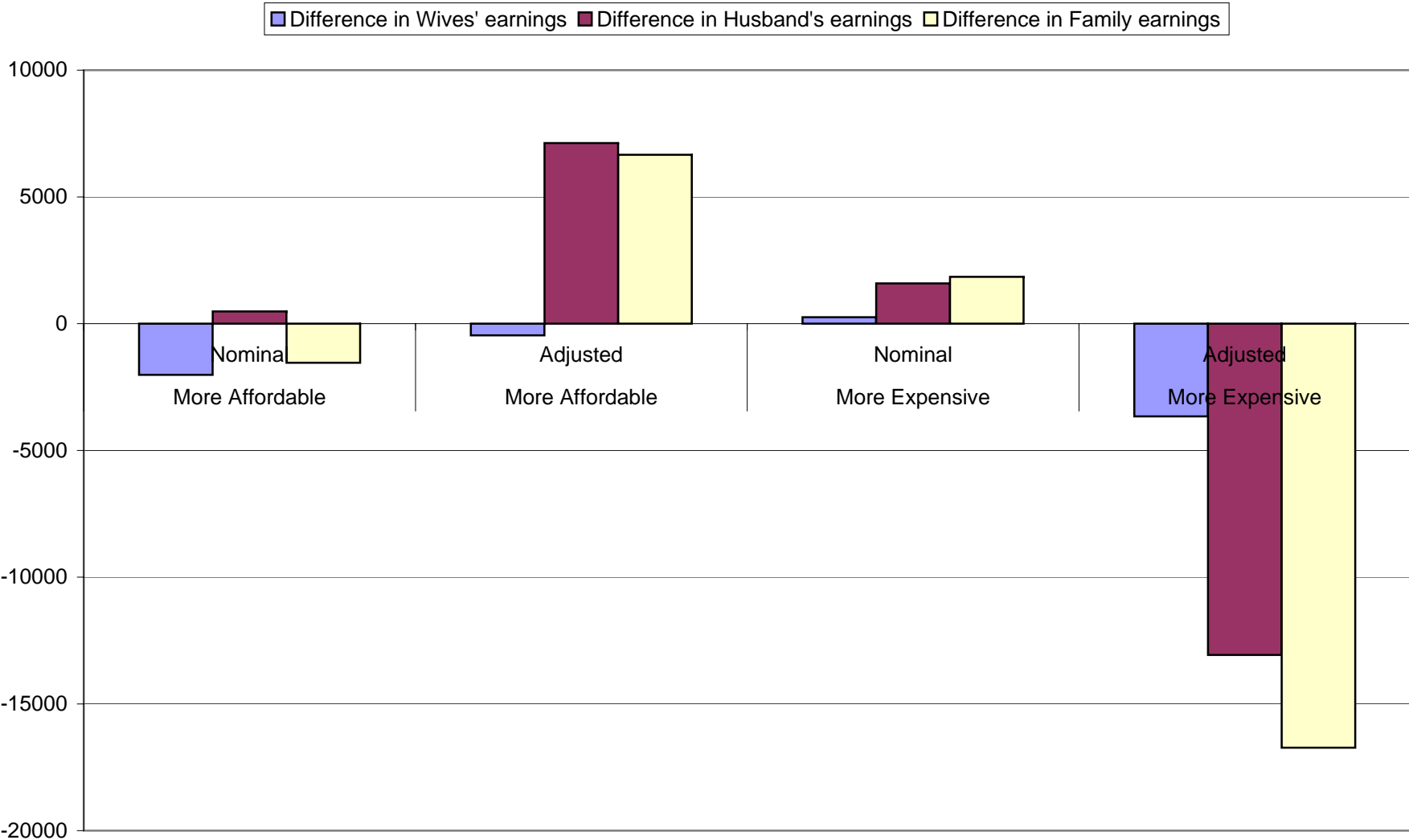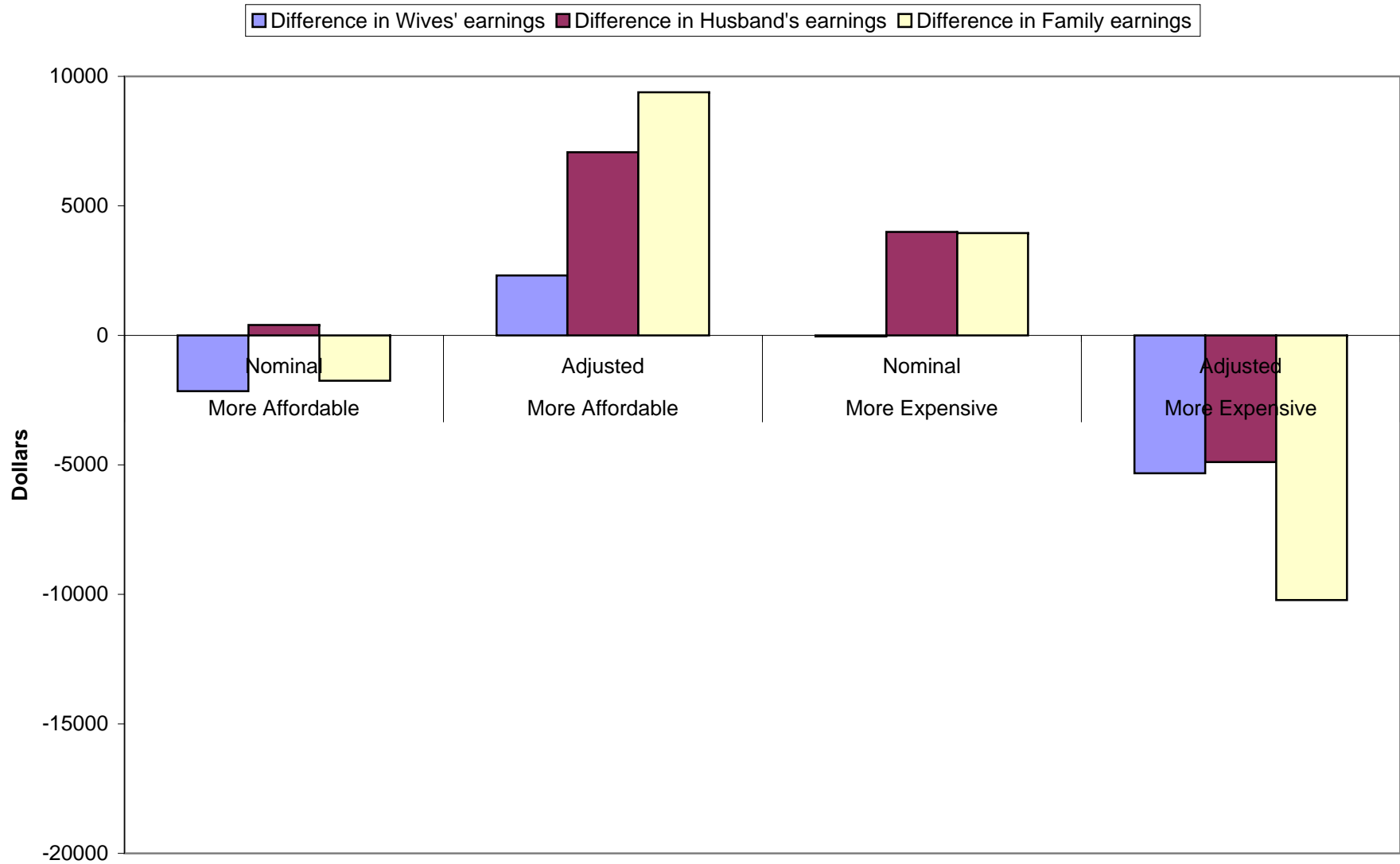
Figure 3: Migration Outcomes for One worker households (prior to move) by Cost of Housing Differences

□ Difference in Wives' earnings ■ Difference in Husband's earnings □ Difference in Family earnings

|			
Nominal	Adjusted	Nominal	Adjusted
More Affordable	More Affordable	More Expensive	More Expensive

Figure 4: Migration Outcomes for Two earner households (prior to move) by Cost of Housing Differences
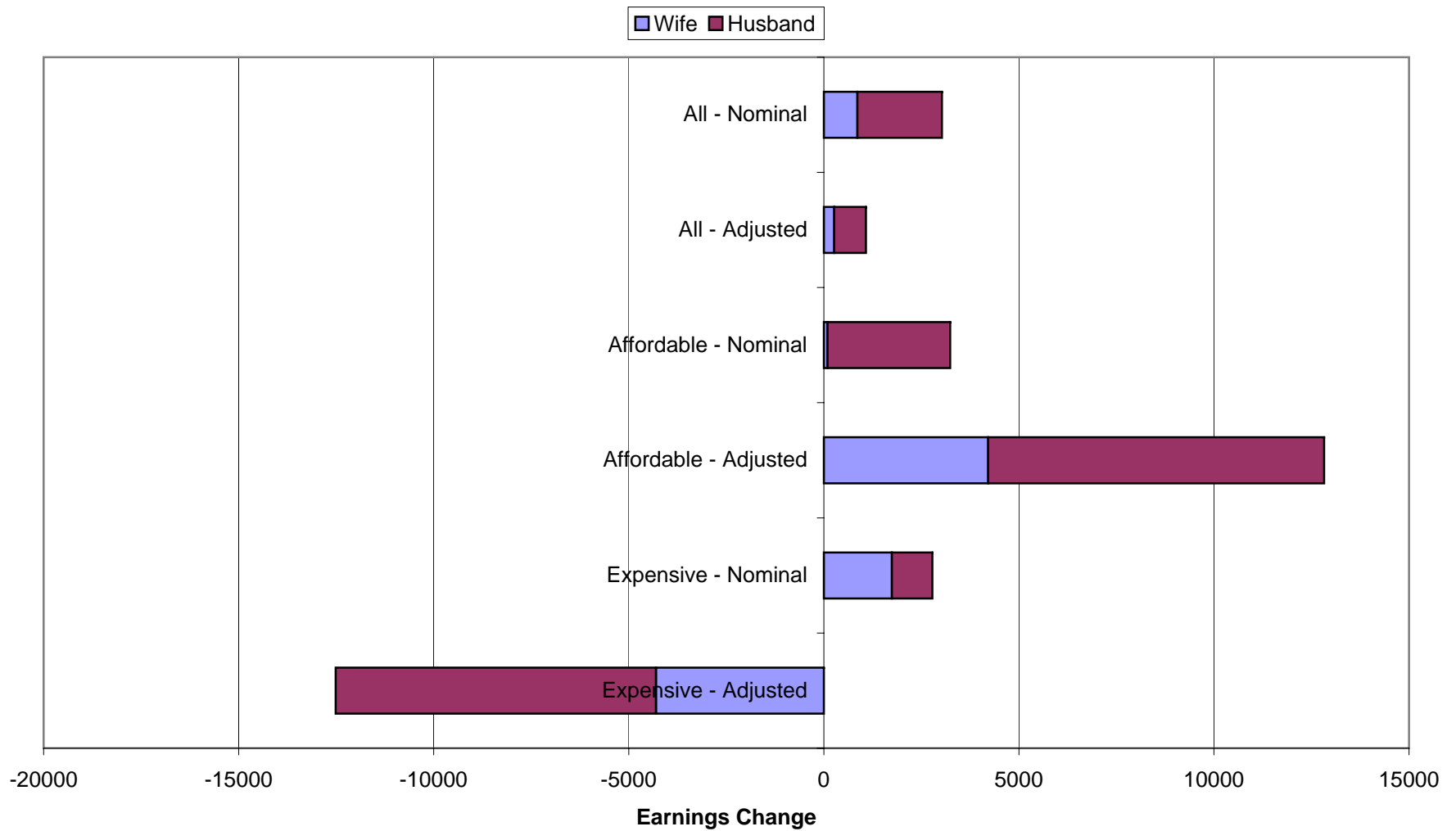
**Figure 5: Contributions to Family Earnings Change After Migration:
Husband Continuously and Wife Discontinuously Employed Before and After Migration**

- Wife
- Husband
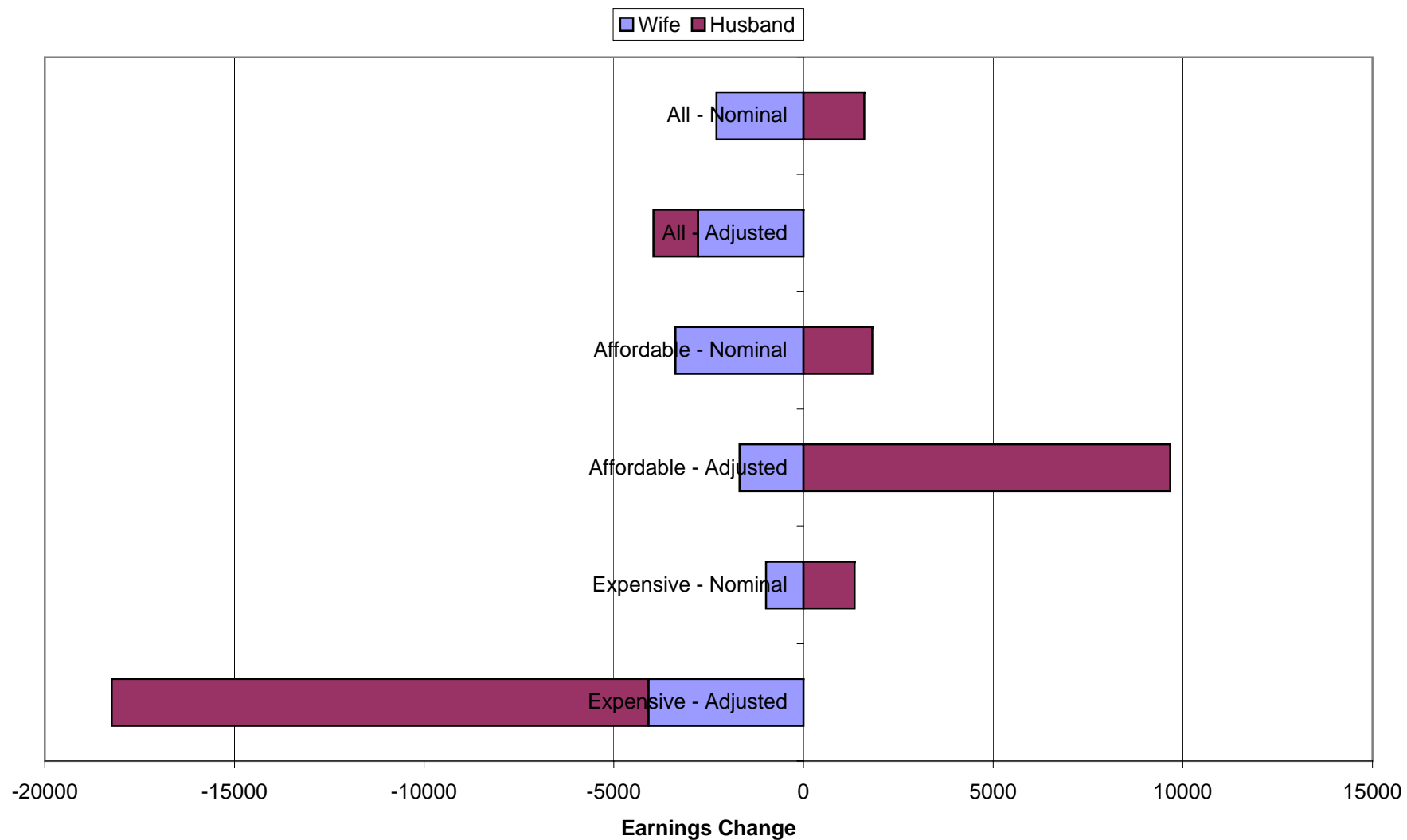
Earnings Change

Figure 6: Contributions to Family Earnings Change After Migration: Husband Continuously Employed Before and After Migration, Wife Discontinuously Employed Before and Continuously Employed After Migration
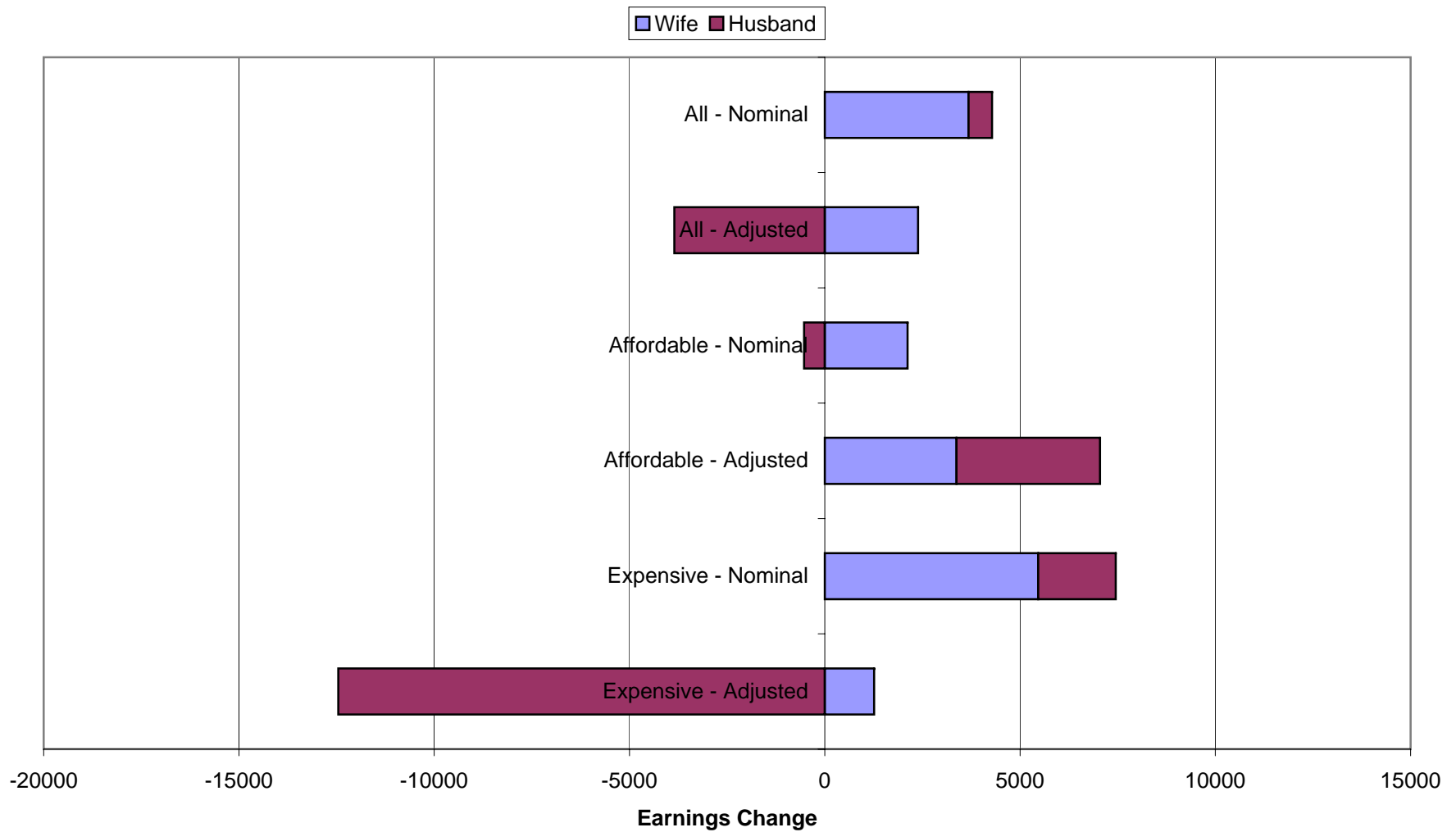
**Figure 7: Contributions to Family Earnings Change After Migration:
Husband and Wife Continuously Employed Before and After Migration**

Figure 8: Contributions to Family Earnings Change After Migration:
Husband Continuously Employed Before and After Migration,
Wife Continuously Employed Before and Discontinuously Employed After Migration