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**Migration, Credit Availability, and
Expenditure Growth in Rural Vietnam**

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Migration, Credit Availability, and Expenditure Growth in Rural Vietnam

Since the implementation of *Doi Moi*, the economic reform begun in 1986, Vietnam has been one of the fastest growing countries in the world. Furthermore, it has brought its international trade into balance and eliminated budget deficits that caused rapid inflation throughout the 1980s and early 1990s. While Vietnam's macroeconomic performance since *Doi Moi* began has been remarkable, it does not necessarily follow that Vietnam's people are all better off. Although living standards have increased in Vietnam, the increases have not been uniform across or within regions (Benjamin and Brandt, 2001). Much of the population has benefited significantly from the economic success, but others have not. In fact, the World Bank (2003) reports that as of 2002, 23% of the population in Vietnam still lacks access to clean water and 35% of children under five suffer from malnutrition.

Benjamin and Brandt (2001) describe inequality in Vietnam and report that income inequality increases between rural and urban areas between 1992 and 1997. They find that average income levels in rural areas are roughly half of those in urban areas. As the rural-urban income gap grows, one would expect to see increasing migration from rural to urban areas (Harris and Todaro, 1970). In China or Vietnam however, land takes on an additional value, in part because of the lack of insurance markets (Ray, 1998). As a result, one would not expect to see whole families migrate, as farmers continue to work the land because of fear of expropriation in the similar setting of rural China (Brandt et al., 2002). Moreover, households aware of higher wages and living standards in urban areas might decide to use migration as part of a household level development strategy (Stark, 1991). Therefore, it could be that migrants leave the farm seasonally in Vietnam to take advantage of higher wages.

In this paper, we plan to document the effects of seasonal migration on household well-being, as measured by annual household expenditures. Glewwe, Gragnolati, and Zaman (2000) described determinants of household expenditures, primarily in sequential cross-sections of households, but also in the panel we use. However, their analysis does not include variables that could be considered endogenous, such as migration, access to credit, or land transfers. We extend their analysis to explore the effects of seasonal migration on household expenditures in rural Vietnam. To do so, we use instrumental variables and panel data techniques. By using panel data, we are able to make two specific contributions to the literature. First, we are able to describe which parts of the initial expendi-

ture distribution are more likely to participate in migration. Second, we document patterns of migration in Vietnam over the course of the 1990s, and extend the literature on Vietnam to understanding the effects of migration on its microeconomy. If household participating in migration are able to increase incomes, policy makers interested targeting poorer areas may want to design policies that encourage seasonal migration.

Our study has two primary objectives. First, we plan to document the rapid increase of seasonal migration in Vietnam over the course of the 1990s. Second, we will analyze the effects of seasonal migration on household consumption growth. The paper will meet these objectives as follows. The first section will describe the data set we will use in the analysis. The second section will further describe the literature on Vietnam's economy and will describe changes in both household expenditures and migration over time. The third section will introduce our methods of analysis, and the fourth section will present our results. The fifth section concludes with policy recommendations based on our results.

1 Data

The data for this study was obtained from the Vietnam Living Standards Survey (VLSS), conducted in 1992-93 and in 1997-98 by the World Bank in collaboration with the Vietnam State Planning Committee and the General Statistical Office. The VLSS is a comprehensive nationwide survey consisting of two main parts: a household survey and a commune-level survey. The household survey collected information on various aspects of living conditions, including individual-level health, education, off-farm employment, on-farm labor, and migration. We use a special module asked both in 1992 and 1997 about seasonal migration to investigate migration behavior by households. The survey also collected detailed information on demographics, housing conditions, family expenditures, income sources, and credit access. For the purposes of this study, we follow Deaton (1997) and use household expenditures to measure relative household welfare. Total household expenditures are calculated by summing up the consumption expenditures on food, home-produced food, nondurable and nonfood goods, the estimated rental value of durable goods, the estimated rental value of the dwelling, and the value of in-kind transfers from employers.

The household survey was accompanied by a commune-level survey, which provides further information on local living conditions. In particular, we use information on the proportion of the village workforce that was migrating in 1992.

The commune survey also provides information on various facilities and activities in the commune, such as health facilities, schools, agricultural practices, and market access.

The two surveys in 1992-3 and 1997-8 have significantly different sample sizes and geographic compositions.¹ The sample of 4799 households in the 1992 survey was chosen to be nationally representative, but the 6000 households in the 1997 survey include over fifteen hundred households that were added from the 1995 Multi-Purpose Household Survey to replace the households that were not tracked from the 1992 survey.

For this study, we construct a panel of the 3492 rural households included in both surveys. We were concerned that the 344 households were surveyed in 1992 but not in 1997 were systematically different than the households that were tracked.² To assuage these concerns, we analyzed the geographic distribution of those households, the expenditure per capita levels, and the food share in expenditures. Although they were somewhat better off at the mean, at the median the per-capita expenditures in 1992 were nearly identical (1510 thousand dong for dropped households versus 1506 thousand dong for included households).³ Still we might assume that the missing households were better off in 1992 than the typical household. Since our analysis focuses on the effects of seasonal migration on expenditures, the missing households will not affect our main regression results. However, they may slightly affect our analysis regarding the way that migration affects Vietnam's income distribution.

2 Economic Reform in Vietnam in the 1990s

Vietnam's transition to a market economy accelerated in many ways during the 1990s. The collapse of the Soviet Union in 1989 may have been a catalyst for these reforms. Vietnam had been fiscally dependent on Soviet aid, but had been forced to invest in heavy industry and to sell products back to the Soviet Union

¹One important question that affects analysis with the VLSS is exactly when the survey took place. Since the VLSS took place over the course of a calendar year, some households were surveyed about what happened to them in the first year, and some were surveyed more about the second year. Since we difference the data in much of the analysis in the paper, this difference is unimportant; however, it may cause labeling confusion. Therefore in the remainder of the paper we will use the years 1992 and 1997 to refer to the two surveys.

²Three households were dropped from the sample because of incomplete records.

³All currency values in this paper are expressed in 1998 Vietnamese dong. In 1998, the exchange rate was approximately 13,900 Vietnamese dong to US\$1.

(Dollar and Litvack, 1998). The immediate halt in Soviet aid may have spurred Vietnam to open its economy to foreigners and to make several new reforms, including liberalization in agriculture that included a change to an individual farming system.

As the Vietnamese markets became increasingly open during the early 1990s, agricultural growth accelerated; Vietnam developed into the second largest rice exporter in the world. This fact is particularly remarkable, as Vietnam was a net importer of food throughout the 1980s and many regions suffered from food shortages. The output growth of rice and other agricultural products can be attributed to the liberalization of fertilizer markets, which reduced input costs; the liberalization of output markets, which increased prices and exports; and the expansion of the individual household farming system. While output increased across the country, the disparity between the North and the South continued to increase in the 1990s (Benjamin and Brandt, 2001). Although the price of fertilizer fell in both the North and the South, the producer price of rice increased more in the South, encouraging higher production there. Because rice farmers in the South were more efficient than the rice farmers in the North, production in the North shifted from rice to other agricultural products. The diversification of agricultural production became possible because internal trade barriers between the North and the South were completely removed by the early 1990s. Rice could flow from the South to the North, which had not occurred before. As a result, growing agricultural output benefited farmers in both regions (Benjamin and Brandt, 2001).

A further economic reform that improved the performance of the agricultural sector in the 1990s was the enactment of the new Land Law in 1993. Under this law, the land tenure— the land-use right— was extended to twenty years or more, and the government allowed transfers of land-use rights. Although land ownership remained in the hands of the government, the longer lease period provided farmers land security and encouraged them to invest in their land productivity. In theory, the establishment of land-use rights would enable transfers from inefficient to efficient users and encourage inefficient farmers to work off-farm. However, this adjustment was relatively slow in Vietnam; Ravallion and Van der Walle (2003) estimate that only one third of the initial inefficiency has been eliminated through land-use right transfers between 1992 and 1997. They also find that farmers who had inefficiently low land endowments in 1992 have reduced inefficiency— meaning that they increased their land holdings— at a faster rate than those who had inefficiently high land endowments. In other words, the new law benefited poor, small land holders more than the richer, large land holders.

Deininger and Jin (2003), however, suggest that the greater access to land for

initial small landowners is the result of the rich people selling their land, working off-farm, and increasing their earnings; therefore, even though the new pattern of land distribution might be more efficient, it does not necessarily imply enhanced equity. They recognize two types of land suppliers: those who find off-farm employment—generally wealthier households— and those who experienced an economic shock and were forced to sell their land-use rights. In the latter group of suppliers, the sale of land-use rights is motivated by a desperate need for cash to smooth consumption, which cannot be accomplished through credit markets or transfers. Although Deininger and Jin do not provide clear conclusions on the impact of land distribution on equity, the establishment of the long-term land security played an important role in the welfare improvement in rural households by providing them with valuable assets and collateral.

2.1 Increasing Household Expenditures

The household expenditure data for the sample indicate that economic growth in Vietnam translated to increased living standards for most households in rural Vietnam. Whereas the median per capita expenditure level was 1506 thousand dong in 1992, by 1997 the median household per capita expenditures had increased to 2015 thousand dong, or an increase of 33%. Although many transition countries have experienced increased inequality along with economic growth, descriptive statistics on Vietnam's inequality show little change. Whereas the Gini ratio for household per capita expenditures was 26.9 in 1992, it only increased to 28.0 in 1997. When considering Vietnam's rural households, it seems that households in Vietnam have become better off without experiencing the expected increase in inequality for its level of development (Kuznets, 1955).

However, we cannot and should not assume that each household has maintained the same place in the income distribution between 1992 and 1997. Rather, some households will have benefited more than others. To assess how different households have fared over the sample period, we calculated an expenditure growth rate for each household, r_h :

$$r_h = \frac{\ln(pexp_{h,1997}) - \ln(pexp_{h,1992})}{t} \quad (1)$$

where $pexp$ represents per-capita expenditures, and t is the time between surveys. We find that expenditures in some households have grown much faster than average, whereas others have grown slower (Figure 1). The kernel density of ex-

penditure growth rates, in fact, is a relatively smooth distribution.⁴ The mean household's expenditures grow by 5.8% over the sample period, but roughly one-fifth of households experience decreases in consumption over the study period.

Since we are not only interested in ascertaining the effect of migration on living standards, but also how migration affects a household's position in the income distribution, we create categories for "performers" and "non-performers" over the study period. We consider the 873 households in the top quartile of the growth rate distribution to be performers, and we consider the 873 households with growth rates in the lowest quintile to be non-performers. The growth rates are somewhat negatively correlated with expenditures per capita in 1992 ($\rho = -0.41$), so the faster growing households tend to come from the lower end of the 1992-3 expenditure distribution. Although these cutoffs are relatively arbitrary, they correspond well to households with extremely fast growth rates and households with stagnant consumption. The 75th percentile of the distribution is 11.0%, and the 25th percentile is 0.4%, which implies that performers have seen their expenditures rise by 75% or more, and most of the households in the non-performers category have actually had their expenditures decrease.⁵ Therefore, the non-performer category includes households that policy makers might be particularly interested in helping gain from improving national living standards.

2.2 Seasonal Migration in Vietnam

According to the VLSS, seasonal migration has increased nearly sixfold between 1992 and 1997. We define seasonal migrants as any migrants who left the household for part of the year to work, but returned to the household. Typically, these migrants indicated that they were away between busy seasons on the farm. The data indicate the destination for a sizeable proportion of these seasonal migrants is either Hanoi or Ho Chi Minh City to work; over $\frac{1}{3}$ of the migrants in 1997 migrate to one of the two big cities.

The aggregate number of households sending out seasonal migrants in the panel increases from 65 in 1992 to 369 in 1997 (Table 1). Households that sent out migrants had a slightly lower expenditure level than the national median, though their growth rate was slightly higher than the median (5.9% versus 5.8%). The

⁴Although the distribution appears normally distributed, we computed a Kolmogorov-Smirnov test statistic for the null hypothesis that a transformed distribution was a standard normal, and rejected it at the 10% significance level. Therefore we cannot conclude the distribution is normal.

⁵We also used alternative definitions of performers and non-performers and our estimation results did not change substantially.

data show an interesting connection between the geographic characteristics of the commune and participation in migration. In 1997, over 20% of households in coastal areas and hills/midlands had at least one seasonal migrant in 1997 (rows 4 and 6). In contrast, few migrants left high mountainous areas (2.4% of rural households). The lack of mobility in high mountainous areas is likely due to underdeveloped transportation networks and limited off-farm employment opportunities. Thus, the typical household with migrants can be characterized as a relatively poor household that reside in lower lying areas, and therefore may have more developed networks through which to migrate.

Households may participate in seasonal migration, or desire to participate in seasonal migration, for a number of reasons. First, individuals within households may realize that they can make higher wages in urban areas than rural areas, particularly if rural-urban inequality is increasing. Harris and Todaro (1970) suggested that labor mobility is determined by employment rate and wage differentials between cities and villages. In theory, workers keep moving to high-wage and low-unemployment locations until a wage-equilibrium between high and low wage areas is reached, and such an outcome is economically efficient; thus, as transportation costs and information asymmetry diminish in developing countries, a large proportion of the rural population migrates to urban areas.

However, Harris and Todaro's model leave out many other important factors, and model migration as an individual rather than a household decision. Stark (1991) suggests that migration decisions are far more complex. Households in developing countries may send out migrants in order to alleviate economic constraints on households, such as the lack of good credit or insurance markets. Migrants can alleviate credit constraints by bringing home savings from their time away, allowing households either to invest in agricultural or other home production (Taylor and Martin, 2001). However, there is a possible cost to migration. If migrants are absent from the household at important points in the agricultural production cycle, there may also be a negative, lost labor effect on household income or consumption (Taylor, Rozelle, and de Brauw, 2003).

Migration may not just be costly in terms of production, but households may face other costs that hinder their migration behavior. For example, moving costs may be high for some households, particularly if information in the village about jobs in the city do not exist.⁶ Information about jobs often flows through migrant networks (e.g. Massey et al., 1987). Munshi (2003) shows that network quality

⁶Several authors have modeled migration with moving costs, including Carrington, Detragiache, and Vishnawath, 1996.

may be affected by the weather in Mexico. Mexico, though, is a mature migrant source; international migrants have gone from Mexico to the United States seasonally for years. We believe that because levels of migration were quite low in 1992, the networks were quite new. Therefore we assume that the presence and strength of the migration network in a commune in 1992 affects household level migration behavior, but it will have no independent effect on household expenditures five years later.

When we characterize households as either migrant households, which are defined as households that have increased participation in migration between 1992 and 1997, and others, we find some interesting differences (Table 2). Migrant households may have been a bit poorer than other households in 1992 (rows 1 and 2), as the mean and median expenditure levels in 1992 were both lower. These households seem to have grown a bit faster than other households, as the growth rate was 6.3% for migrant households versus 5.7% in others. This difference is small, but might matter for poor households; more of the migrant households were below the World bank's poverty line for Vietnam in 1992. Furthermore, these figures do not account for other differences between migrant and other households. For example, migrant households tend to be a bit larger than other households. The average migrant household has 5.38 members, versus 5 members for other households. In the results section, we will control for such household level differences.

3 Empirical Strategy

We are interested in understanding the effect of migration on household per-capita expenditures. However, we are concerned that unobservable factors about the household that affect its expenditures may also be correlated with its propensity to migrate, which would bias OLS estimates of a coefficient relating migration to household expenditures. Therefore, in our analysis we must be concerned about controlling for exogenous factors at the household level.

The first thing we do to control for potential endogeneity is to exploit the panel nature of the VLSS. By including a household fixed effect in our regressions, we can control for all household level unobservables that do not vary over time. The household fixed effect forces us to measure the effect of the *difference* in migration behavior between 1992 and 1997 on the *difference* in household expenditures. Our results will be no different if we use the growth rate, so we simply use the growth rate in per-capita expenditures as our dependent variable.

Using household level fixed effects comes with a cost. If other, non-time varying effects have an interesting relationship with household expenditures, we will miss these effects in our analysis. However, since a differenced estimator will measure the effect of migration on consumption growth, we can add variables to the model that help explain consumption growth, particularly if they are measured in the first period. The second specification is similar, then, to a cross-country growth regression (e.g. Barro, 1991; Sala-i-Martin, 1997). In a second specification of our main results we relax the differenced estimation strategy and add several variables that were measured in the first sample, as well as some commune characteristics and regional fixed effects, to control for differences in regional growth over time.

Unfortunately, it could be that something that varies over time about households that is correlated with expenditure growth as well as its changes in migration behavior. To counter this possible endogeneity, we run a first-stage regression using the proportion of the commune workforce that was seasonally migrated at the time that the first survey was done as an instrument. Previous research has shown that networks are important determinants of migration decisions, since they lower information costs about work outside the local area and help migrants with other moving costs (Taylor et al., 1996). Although one might be concerned that the quality of the network is itself endogenous to the migration decision (Munshi, 2003), we are not concerned that this is the case in Vietnam, because the networks are quite new, and therefore people would not have changed their migration behavior five years previous in response to weather shocks, as Munshi finds.

Finally, we are interested in knowing which part of the expenditure distribution in 1992 was affected by migration. Therefore, we also test whether or not migrants are more likely to be categorized as performers or non-performers, based on the definitions above. We cannot include household level fixed effects in these regressions, because categorical variables cause bias in logit and probit regression coefficients (Wooldridge, 2002). Since the bias is inversely proportional to category size, we can safely include regional fixed effects in these regressions. We still have to deal with the endogeneity problem, so we use an instrumental variable probit regression developed by Newey (1987). The estimator requires that the error terms of the first and second stage regressions are bivariate normally distributed, so we will test whether or not they are normally distributed after estimation.

To summarize, our estimation strategy broadly has two parts. We are interested in understanding the effect of migration, M_h , on the logarithm of per-capita household expenditures, X_h , controlling for other exogenous characteristics Z_h as

well as household fixed effects α_h .⁷ We will therefore estimate:

$$X_{ht} = \alpha_h + \delta_t + \beta M_{ht} + \gamma Z_{ht} + \varepsilon_{ht} \quad (2)$$

where δ_t are year fixed effects and ε_{ht} is the residual. To control for endogeneity, we do the following. First, we run a differenced version of equation (2), while replacing the change in expenditures with the growth rate r_h :

$$r_h = \delta_{1997} + \beta \Delta M_h + \gamma \Delta Z_h + \Delta \varepsilon_h \quad (3)$$

Second, we run a first-stage regression in which we use the commune level propensity to migrate in 1992 to explain the change in migration between 1992 and 1997.⁸ The two stages of estimation are run simultaneously to improve efficiency.

4 Estimation and Results

We estimated equation (3) using OLS and two stage least squares, using both commune level fixed effects and household level fixed effects (Table 3). The results are robust to specification. In the most parsimonious version of our OLS model, we regress growth on changes in migration behavior, the average education level of adults, and household composition excluding births (column 1).⁹ We find that the coefficient on the migration variable is positive but statistically insignificant.

However, there could be unobservables that are correlated with the migration variable. Indeed, we can reject the null hypothesis that the migration variable is exogenous through a Durbin-Wu-Hausman test.¹⁰ Our first stage regression indicates that our instrument is strongly correlated with the migration variable. When we run the complete model, we find that an additional seasonal migrant implies a growth rate that is 4.8% faster than a household that does not participate in migration, and the effect is significant at the 0.01 level of significance (column 2). These results imply that households able to participate in migration in rural Vietnam have grown much faster than households that have not. As discussed earlier, it could be that these households participate in migration because wages

⁷We use the logarithm of per-capita expenditures because it is close to log-normally distributed and provides a better fit than the linear equation.

⁸When we use time invariant variables in the analysis, we have to use regional fixed effects so that the estimator is identified.

⁹See Appendix Table ?? for descriptive statistics on included variables for 1992 and 1997.

¹⁰The test statistic is 9.30, and as it is distributed χ^2 with one degree of freedom, we strongly reject the null hypothesis of exogeneity.

are higher outside the village, or because they are able to relax constraints on household production, which leads to higher incomes and therefore consumption. With this test, we cannot discern between these two hypotheses.

Other results from our initial regression are also consistent with our expectations. In particular, we find that increases in the number of working age men or women have sizeable increases in the household growth rate (rows 3 and 4). Additional adult members of the household are likely to participate in agriculture in rural Vietnam, which leads to higher household incomes and expenditure levels. The number of children between 6 and 17 also has a positive significant impact on household expenditure growth, but this effect is not due to work. Rather, it is likely that more children went to school by 1997 than in 1992, and the increase in expenditures at least partially reflects the fact the enrollment rates have increased. Using the same data set, Nguyen (2002) finds that the primary school enrollment rate has increased by 10 percentage points for the poorest expenditure quintile. Controlling for demographics, changes in household size has a negative effect on the per capita expenditure growth rate. This result may reflect economies of scale in food consumption, which is the largest share in the household budget (Deaton and Paxson, 1998).

We add variables describing the human capital of the household head, the land and asset holdings of households, and characteristics of the commune to the model (Table 3, columns 3 and 4). The additional variables yield further insight into the determinants of higher living standards in Vietnam. Households with older household heads seem to grow more slowly, although the effect of an additional year decreases as heads get older (rows X and Y). Households with more land planted in annual crops also seem to grow more slowly (row Z). However, households that owned a bicycle in 1992 grow 0.6% faster than those that did not. If the lack of a bicycle indicates deep poverty, this result could suggest that really poor households did not grow that quickly.

Our primary coefficient of interest does not change appreciably when we add initial conditions to the model. Although the OLS version is still statistically insignificant, the instrumented estimate implies that an additional migrant increases consumption growth by 4.5%, *ceteris paribus*. When controlling for a variety of initial conditions about the household, we confirm that in rural Vietnam, participating in migration yields higher living standards.¹¹

¹¹We also ran our regressions on subsamples by geographical characteristics (e.g. river delta, coastal) and by region. Many of these regressions were underidentified, because of a lack of migrant households from those regions/geographic characteristics. However, we did find that migration in the Red River Delta has a positive, significant effect on expenditure growth, and migrants

Our findings are broadly consistent with Stark's theory of migration, rather than Harris and Todaro or the Lewis model. If the Harris-Todaro model completely characterized migration, it is unclear why there would be seasonal migration in the first place, particularly given the presence of moving costs. People might be responding to wage fluctuations, but then there is no reason that household expenditures would increase upon the migrant's return, according to Harris and Todaro; the migrant would add to household production potentially at the rural wage, but no more. So it is more likely that households are participating in migration as part of a larger household development strategy, as suggested by Stark (1991).

4.1 Migration, Performers, and Non-Performers

Although households may be participating in migration to help improve the living standards of all members, we have left it unclear which part of the income distribution households that migrate come from. In this subsection, we run our full set of regressors on dummy variables for whether or not a household is a performer or not. Although these variables are not the same as the income distribution *per se*, they speak to where households participating in migration ended up in the income distribution in 1997. Since we know that the migration variable is endogenous, we use an instrumental variable estimator developed by Newey (1987). Finally, we run the regressions on both the entire sample and on the subsample of households that fell below the poverty line calculated by the World Bank in 1992, to understand whether or not these households were affected differently (World Bank, 2003).

We find that migration does not affect the probability of a household being a performer (Table 4). Although the coefficients are all positive, they are statistically no different from zero (row 1). This is true whether we look at the whole sample or the sample of poor households only. Therefore, it seems that the fastest growing households in the sample did not turn to migration to fuel their growth. Other characteristics that affect whether or not a household is a performer are sensible; for example, the more working age men live in a household, the higher the probability that the household grew faster than 11%. Larger households were less likely to grow quickly, and households that had more area planted in grains or other annual crops also were less likely to grow their consumption quickly. Households

from hilly areas also had a positive, significant effect on growth, which is not surprising as migration grew fastest from hilly areas (Table ??).

with more men of working age are probably better able to produce more income, making them better off, whereas households that have either specialized in grain production or have more of their labor allocated to grain production are less likely to have grown quickly, because returns to labor in other activities are typically much higher.

Migration has a negative, statistically significant effect on the probability that a household is a non-performer (Table 5). The coefficient is somewhat difficult to interpret, because the distribution changes a great deal as an additional migrant is added to the household (row 1); however, if we use the standard definition, the slope of the distribution at the mean implies that an additional migrant would decrease the probability of a household being a non-performer by 39%, *ceteris paribus*. Households that have been able to send out seasonal migrants are far more likely to have growth rates that were above the 25th percentile of the distribution than households that were not. This finding holds for the subsample of poor households; conditional on a household having been poor in 1992, they were significantly less likely to have experienced stagnant growth if they have begun to send out migrants.

Combined, the results of our exercise show that households that have begun to participate in migration have experienced faster growth than other households, *ceteris paribus*. Although migrant households are not any more likely to have experienced extremely rapid growth during the study period than non-migrant households, we find that they are much less likely to have stagnated. The latter finding is true whether or not households were below the poverty line in 1992-3. Households may be taking advantage of migration to limit income and therefore consumption risk, as the covariance of migrant earnings and agricultural earnings should be weak. The second effect we are likely seeing is that migrants are able to take advantage of higher seasonal wages away from the farm, conditional on having information about these jobs through networks.

5 Conclusion

Vietnam's rapid economic growth since the beginning of *Doi Moi* has led to strong, rapid economic growth. In this paper, we explore how that growth has spread microeconomically. Between 1992 and 1997, the mean growth rate of household per capita expenditures in rural Vietnam was 5.8%. However, as we show in this paper, some households benefited much more from growth, whereas other households saw their expenditures stagnate.

We further show that households that have begun to send out seasonal migrants have benefited more from transition than those that have not. Whereas migration participation was quite low in 1992, we find that at the household level it had increased sixfold. Our regression results show that once we instrument the migration variable with a variable that proxies for the strength of the migrant network at the commune level commonly used in the literature (e.g. Taylor et al., 1996), we find that an additional migrant will increase expenditure growth by 4.8%, holding everything else constant. Furthermore, we find that migrant households were much less likely to have seen their expenditures stagnate over the period, as they were less likely to be categorized as non-performers.

There are several reasons that households may be using migration as part of their development strategy, all of which fall out of Stark's theory of migration. It could be that households want to limit income or consumption risk, though in a growing environment, this motivation is somewhat less likely, since expectations of the next year's income should be higher than present income for most households. These households, conditional on knowing that jobs are available, may be taking advantage of higher returns to labor to help the family while their labor is not required on the farm. Unfortunately, we cannot discern between these motivations in this paper.

We do find that the households that have begun to participate in migration seem to have had lower incomes than other households in 1992, which implies that encouraging migration would seem to be a sensible government policy. There are several ways that Vietnam's government could help encourage the creation of migrant networks. Since the proportion of the population living in rural areas always declines with economic growth (Taylor and Martin, 2001), Vietnam's government should want to help rural residents find jobs outside of rural areas, particularly more remote areas. Better roads or transportation links with areas not currently sending out migrants would help. Two regions stand out in our analysis; the Northern Uplands and the Central Highlands both have much lower than average participation in migration, as well as lower growth rates. The government could also attempt to educate people in regions not being served about job possibilities and wages in other areas.

In future work, we plan to more exactly pinpoint the way migration has affected Vietnam's economy by studying two aspects of migration more closely. First, we plan to study the role of migrant destinations in the household level outcomes. It is likely that migrants that go to Hanoi or Ho Chi Minh City, where wages are higher, have an even larger effect on household expenditures. Second, we plan to describe the effects of migration on the expenditure distribution in rural

Vietnam in general. We know that migration has increased the growth rate, and we know that migrant households are more likely to have come from the lower half of the expenditure distribution in 1992. However, we do not know whether migration has helped Vietnam limit inequality or whether migration has exacerbated inequality. Since Vietnam's growth has largely come without increases in inequality, policy makers might be interested in understanding whether or not further increases in migration would increase or decrease inequality.

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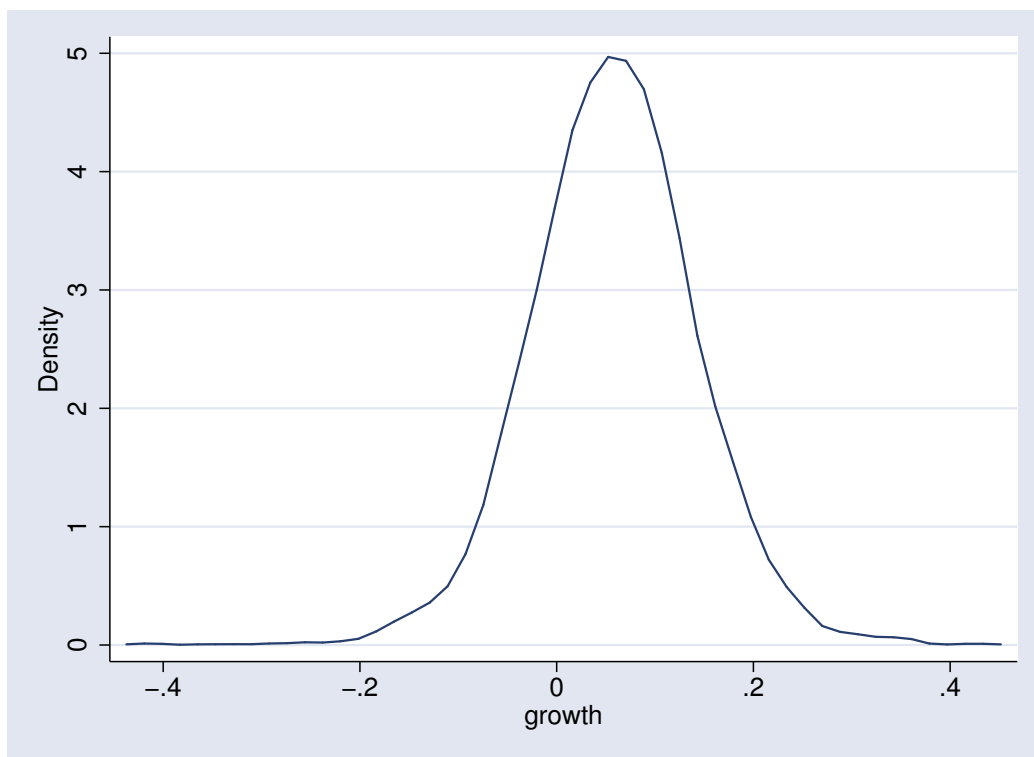


Figure 1: Household Per-Capita Expenditures

Table 1: Selected characteristics of Migrant Households, VLSS, 1992 and 1997

| | 1992 | 1997 |
|------------------------------|------|-------|
| Number of Migrant Households | 65 | 369 |
| Median Expenditures | 1264 | 1437 |
| Median Growth Rates | 7.3 | 5.9 |
| Commune Geography | | |
| Coastal | 5.3% | 21.3% |
| Inland Delta | 2.1% | 11.2% |
| Hills/Midlands | 0.5% | 24.2% |
| Low Mountains | 1.3% | 5.6% |
| High mountains | 0.2% | 2.4% |

Notes: “Median Expenditures” refers to the median household per-capita expenditures.
All descriptive statistics are conditional on migration occurring.

Source: VLSS.

Table 2: Selected Differences Between Migrant and Non-Migrant Households, Vietnam

| | Migrant HHs | Other HHs |
|------------------------------------|-------------|-----------|
| Median Per-Capita Expenditures | 1447 | 1514 |
| Mean Per-Capita Expenditures | 1693 | 1736 |
| Below Poverty Line | 63.1% | 56.4% |
| Mean Expenditure Growth Rate | 6.3% | 5.7% |
| Age of Household Head | 44.1 | 45.2 |
| Years of Education, Household Head | 66.39 | 5.50 |
| Household Size | 5.38 | 5.0 |

Notes: Households characterized as “migrant households” increased their participation in migration between 1992 and 1997. Therefore, any households either with the same level of participation or discontinuing participation in migration are categorized as “other” households, which explains the difference between this table and Table 1.

Source: VLSS.

Table 3: Effects of Migration on Household Expenditure Growth, Vietnam

| Variable | (1) | (2) | (3) | (4) |
|---------------------------------------|---------------------|----------------------|----------------------|-----------------------|
| Migration | 0.0019 (0.0031) | 0.048** (0.016) | 0.0017 (0.003) | 0.045** (0.017) |
| Household Demographics | | | | |
| Women, aged over 55 | 0.005 (0.004) | 0.005 (0.004) | 0.007* (0.004) | 0.006 (0.004) |
| Men, aged over 60 | 0.014** (0.005) | 0.012** (0.005) | 0.011** (0.005) | 0.010** (0.005) |
| Women, aged 18-55 | 0.006** (0.003) | 0.0053** (0.0027) | 0.006** (0.0025) | 0.005* (0.0026) |
| Men, aged 18-60 | 0.017** (0.002) | 0.014** (0.003) | 0.015** (0.002) | 0.013** (0.003) |
| Children, aged 6-17 | -0.008** (0.001) | 0.009** (0.001) | 0.006** (0.001) | 0.007** (0.001) |
| Logarithm, Household Size | -0.104** (0.006) | -0.103** (0.007) | -0.106** (0.007) | -0.106** (0.007) |
| Household Head Characteristics | | | | |
| Years of Schooling | -0.001 (0.0006) | -0.001 (0.0006) | -0.0004 (0.0006) | -0.0003 (0.0006) |
| Age of Head | | | -0.0012* (0.0007) | -0.0013* (0.0007) |
| (Age Squared)/1000 | | | 0.009 (0.007) | 0.011 (0.007) |
| Household Endowments, 1992 | | | | |
| Logarithm, Land in Perennials | | | 0.007 (0.006) | 0.007 (0.005) |
| Logarithm, Land in Annuals | | | -0.002** (0.0006) | -0.0014** (0.0006) |
| Own Bicycle? (1=yes) | | | 0.006** (0.003) | 0.006** (0.003) |
| Own Motorbike? (1=yes) | | | 0.003 (0.007) | 0.006 (0.007) |
| Equation Statistics | | | | |
| N | 3492 | 3492 | 3492 | 3492 |
| R^2 | 0.11 | | 0.18 | |
| Durbin-Wu-Hausman | 9.30 | | 6.78 | |

Notes: Robust standard errors in parentheses. * denotes significance at the 10% level; ** denotes significance at the 5% level. All variables that appear in columns 1-4 are changes in the variables; variables that appear in only columns 3-4 are levels in the 1992-3 survey. Regional dummies and some commune characteristics included in columns 3 and 4, but not reported.

Source: VLSS.

Table 4: Effects of Migration on Performer Categorization, Vietnam

| Explanatory Variable | All HHs | | Poor HHs | |
|---------------------------------------|--------------------|---------------------|--------------------|------------------------|
| | (1) | (2) | (3) | (4) |
| Migration | 0.394 (0.263) | 0.134 (0.304) | 0.525 (0.338) | 0.187 (0.400) |
| Household Demographics | | | | |
| Women, aged over 55 | 0.050 (0.067) | 0.063 (0.071) | 0.159* (0.089) | 0.215** (0.095) |
| Men, aged over 60 | 0.129 (0.079) | 0.111 (0.084) | 0.088 (0.111) | 0.038 (0.107) |
| Women, aged 18-55 | -0.005 (0.041) | -0.015 (0.043) | -0.036 (0.054) | -0.016 (0.056) |
| Men, aged 18-60 | 0.165** (0.041) | 0.172** (0.043) | 0.122** (0.055) | 0.165** (0.058) |
| Children, aged 6-17 | 0.056** (0.023) | 0.024 (0.025) | 0.030 (0.028) | 0.015 (0.013) |
| Logarithm, Household Size | -1.05** (0.107) | -1.17** (0.113) | -1.04** (0.145) | -1.28** (0.157) |
| Household Head Characteristics | | | | |
| Years of Schooling | -0.008 (0.009) | -0.003 (0.010) | 0.013 (0.013) | 0.013 (0.013) |
| Age of Head | | -0.017 (0.013) | | -0.034** (0.016) |
| Age Squared | | 0.0001 (0.0001) | | 0.00034** (0.00016) |
| Household Endowments, 1992 | | | | |
| Logarithm, Land in Perennials | | 0.108 (0.155) | | |
| Logarithm, Land in Annuals | | -0.034** (0.010) | | -0.047** (0.014) |
| Own Bicycle? (1=yes) | | 0.062 (0.054) | | 0.017 (0.067) |
| Own Motorbike? (1=yes) | | 0.033 (0.130) | | 0.614** (0.292) |
| Equation Statistics | | | | |
| N | 3492 | 3492 | 1993 | 1993 |

Notes: Standard errors in parentheses. * denotes significance at the 10% level; ** denotes significance at the 5% level. All variables that appear in columns 1 and 3 are changes in the variables; variables that appear in only columns 2 and 4 are levels in the 1992-3 survey. Regional dummies and some commune characteristics included in columns 2 and 4, but not reported. Columns (3) and (4) only include households designated "poor" by the World Bank poverty line in 1992.

Source: VLSS.

Table 5: Effects of Migration on Non-Performer Categorization, Vietnam

| Explanatory Variable | All HHs | | Poor HHs | |
|---------------------------------------|---------------------|---------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) |
| Migration | −1.02** (0.316) | −1.31** (0.387) | −1.50** (0.540) | −1.39** (0.637) |
| Household Demographics | | | | |
| Women, aged over 55 | −0.026 (0.075) | −0.031 (0.080) | −0.063 (0.122) | −0.077 (0.122) |
| Men, aged over 60 | −0.183** (0.084) | −0.128 (0.090) | −0.124 (0.140) | −0.143 (0.146) |
| Women, aged 18-55 | −0.078 (0.044) | −0.059 (0.047) | −0.084 (0.072) | −0.095 (0.074) |
| Men, aged 18-60 | −0.244** (0.044) | −0.216** (0.049) | −0.177** (0.075) | −0.191** (0.080) |
| Children, aged 6-17 | −0.147** (0.024) | −0.131** (0.027) | −0.125** (0.036) | −0.137** (0.039) |
| Logarithm, Household Size | 1.58** (0.112) | 1.40** (0.178) | 1.48** (0.196) | 1.48** (0.196) |
| Household Head Characteristics | | | | |
| Years of Schooling | 0.006 (0.011) | −0.003 (0.011) | 0.004 (0.017) | −0.003 (0.018) |
| Age of Head | | 0.012 (0.014) | | 0.013 (0.020) |
| Age Squared | | −0.0001 (0.0001) | | −0.0002 (0.0002) |
| Household Endowments, 1992 | | | | |
| Logarithm, Land in Perennials | | 0.092 (0.143) | | |
| Logarithm, Land in Annuals | | 0.001 (0.010) | | 0.011 (0.0120) |
| Own Bicycle? (1=yes) | | −0.102 (0.058) | | −0.084 (0.087) |
| Own Motorbike? (1=yes) | | −0.147 (0.154) | | |
| Equation Statistics | | | | |
| N | 3492 | 3492 | 1993 | 1993 |

Notes: Standard errors in parentheses. * denotes significance at the 10% level; ** denotes significance at the 5% level. All variables that appear in columns 1 and 3 are changes in the variables; variables that appear in only columns 2 and 4 are levels in the 1992-3 survey. Regional dummies and some commune characteristics included in columns 2 and 4, but not reported. Columns (3) and (4) only include households designated “poor” by the World Bank poverty line in 1992.

Source: VLSS.