Gender inequality and labour market segmentation under trade reforms:

Evidence from Vietnam, 1993 - 2004

RESEARCH PROPOSAL

This version 9 September 2007

Presented to
Poverty and Economic Policy Network

By
Pham Thi Thu Tra
&
Le Thai Thuong Quan
Nguyen Thai Thao Vi
Ngo Quang Thanh

VIETNAM
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Abstract

The proposed research aims to explore the gender impact of trade reforms by looking into a linkage between trade and the segmentation of Vietnam’s labour market regarding formal and informal employment for the period 1993-2004. Using the three household surveys conducted in this period in conjunction with trade data retrieved from the TRAINs database, the research will firstly examine the magnitude of informal employment as a source of gender inequality under trade reforms in Vietnam. Secondly, the research investigates the impact of trade reforms on multidimensions of gender inequality including employment opportunities, wages and unpaid care work. Given this focus, the study is expected to arrive at new insights and patterns of gender inequality in Vietnam as the case of a developing country. The research will also provide implications for government interventions that benefit female participants in both formal and informal sectors.

Acknowledgments:
We thank Marzia Fontana, Carmen Estrades and other reviewers for their valuable comments on the earlier versions of this proposal. In addition, our appreciation goes to Hung Pham for his helpful suggestions to this revision and his support and concerns with the topic of our study. Furthermore, we would like to thank PEP network for having given us an opportunity to present this proposal at the 6th PEP meeting, Lima, Peru.
1. Main research questions and core research objectives
Moving towards a market-oriented economy, Vietnam launched its “doi moi” in 1986 and has gone through a series of significant reforms over the past decades. One of the key reforms is to initiate and expand trade liberalization. In the period 1990 – 2004, Vietnam has witnessed an impressive growth of more than 7% in GDP and of approximately 19.3% and 13% in export and import, respectively. In Doi moi, the Vietnamese government has claimed to ensure the effects of trade reforms to advantage women. It has not been clear to what extent this assertion has been acknowledged.

In terms of gender equality, Vietnam is in a much more advanced position than many other developing countries in transition. Vietnam had more pay equality between gender groups in 1993-1998 as pointed out by Liu (2004ab) and Pham and Reilly (2007). Moreover, women participation in the labour force has been on the rise. Women constituted 45.07% of total labour force in Vietnam in 1993 and this figure increased to 50.35% in 2004 (VLSS 1992/1883, VLSSH 2004).

As in many other developing countries, the labour force in Vietnam is absorbed with a large informal sector in which women are overpresented. The informal sector is broadly defined to include informal self-employment and informal wage employment as recommended at the International Conference of Labour Statisticians (ICLS, 2003). While the share of informal employment in Vietnam has declined from 90% of the labour market in 1993 to 82.81% in 2004, the participation rate of women in this sector remains as high as around 86% over the period. Despite certain benefits of the informal sector, evidences from developing countries show that the informal sector is often associated with “lower quality” jobs and thus lower earnings compared to its formal counterpart (Goldberg and Pavnick, 2004). Moreover, a hierarchy of earnings and of poverty risk exists for gender segmentation within the informal sector (Chan et al., 2005). In Vietnam informal female workers are reported to earn less than their male counterpart, though this

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1 As we are not able to strictly apply this definition in the context of our research, we will turn to elaborate this point in the data section. So defined, informal employment comprises of informal wage employment and informal self-employment. Informal self-employment consists of employers in informal enterprises; own account worker in informal enterprises and unpaid family workers in informal and formal enterprises. Informal wage employment refers employees of informal enterprises, casual or day labourers, temporary or part-time workers, paid domestic workers, unregistered or undeclared workers, called homeworkers.
disparity declines (see table 3). Informality incidence is thus supposed to have certain implications for gender inequality. On the other hand, the informal sector may grow or shrink in the era of trade reforms (Goldberg and Pavcnik, 2003, Goodfriend and McDermott, 1995). As a result, the trade – informality linkage is expected to provide different reflections on gender inequality with respect various sectors.

The proposed research aims to explore the gender impact of trade reforms by looking into a linkage between trade and the labour participation between the formal sector and informal one in Vietnam in the period 1993-2004. The main objectives of the research are (i) to uncover the magnitude of informal employment as a source of gender inequality under trade reforms in Vietnam; (ii) to investigate the impact of trade reforms on multidimensions of gender inequality including employment opportunities, wages and unpaid care work; (iii) in so doing, implications will be drawn to assist government interventions that benefit female participants in both sectors under the presence of trade. Specifically, the research addresses the following questions:

1. What is the empirical background of gender inequality in Vietnam in terms of gender employment opportunities, gender wage gap and gender allocation of unpaid care work, for both the formal and informal sectors of the economy?

2. To what extent do trade reforms affect an individual choice of employment between the formal and informal sector for across gender groups in Vietnam?

3. What is the impact of trade on gender wage gap for the formal and informal sector?

4. What are the impact of trade on gender gap of unpaid care work for the formal and informal sector?

2. Scientific contribution of the research

Trade is not new. It is as old as any human economic behaviour. The role of women in trade is well acknowledged by both conventional wisdom and by research. The labour market in developing countries is segmented regarding employment opportunities and earnings as well as gender. Whereas the trade – gender linkage has been documented in the trade literature, its connection to the segmentation of the labour market remains unexplored. In pursuit of filling this gap, the proposed research attempts to look at the impact of trade on informality and to translate this impact into explaining gender
inequality. This section will briefly review the main literature relating to the main concepts of this study and their interlinkages: Trade, gender, informality and different dimensions of gender inequality.

*Trade and gender*

A foremost mission delegated to trade liberalization is to improve human capital development. In this perspective, the role of trade liberalization towards gender has been a central issue in research over the past decades. Fontana (2003) provides a comprehensive review of the empirical literature on the gender impact of trade. Impacts of trade liberalization on gender can be postulated in several ways: changing patterns and conditions of employments, gender wage gap and reallocation of unpaid intrahousehold activities, or the so-called *unpaid care work*\(^2\). Whilst evidence on these issues is diverse, several findings are worthy to highlight. First, *the employment effect* of trade has been most favourable to women in countries that specialize in producing labour-intensive manufactures. Evidence shows a strong relation between increased exports and increased women’s participation in the formal paid employment, mostly in the manufacturing sector. Examples are studies by Standing (1999) and Pearson (1999). Second, evidence on the impact of trade on *gender wage gap* remains mixed. A negative association is found between trade openness and the size of gender wage gap by Oostendorp (2002) in a sample of both developed and developing countries, by Fleck (2001) for Mexico, by Reilly and Dutta (2006) for India. Alternatively, evidence of widening of the gender wage gap is found, among others, by Nicita and Razza (2003) for Madagascar, Paul-Majumder and Begun (2000) for Bangladesh. Finally, by changing employment opportunities and earnings patterns, trade is likely to influence *dynamics of unpaid care work*, i.e. the division of time and resources among household members. A well-accepted constraint that prevents women from seizing new opportunities in wage employment is the heavy burden of household responsibilities that falls disproportionately on them. Any assessment of the impact of trade liberalization on gender equality must look at its impact not only on changing employment opportunities and earnings patterns, but also on unpaid care work. Some evidences show that increases in women’s labour force participation are

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\(^2\) Unpaid care work refers to the provision of services within households to serve well-being of other household members (UNIFEM 2000)
not accompanied by a commensurate reduction in their unpaid care work, as men have been reluctant to pick up the slack (Cagatay, 2001). In Ecuador, men appear to participate more in housework as their wives work in a certain industry, i.e. the flower industry (Newman, 2001). In Nepal, time spent for childcare increases for women and declines for men as they commence to commercialize vegetables and fruits (Paolisso et al., 2002).

Overall, empirical work on the effects of trade on gender has pursued different dimensions of gender inequality and found some evidence for the improved role of women under trade reforms. The evidence, particular for gender wage gap and gender allocation of unpaid care work, remains inconclusive, though. One possible explanation is that most studies on gender effects of trade concentrate on a particular sector, e.g. the manufacturing sector while most women work in agriculture and in the informal sector (Fontana, 2003). To our knowledge, no other empirical work has attempted to relate the labour force segmentation, which we turn to discuss below, to the trade-gender linkage in the developing world.

Informality and gender

Informality and gender have been a central point of focus among policy makers and academics over the past decades. In this research, we adopt for an extended definition promoted by ICLS (2003). According to this definition, all dimensions of informal employment – i.e., employment that is not protected or regulated - both inside and outside informal enterprises are captured (see above). In developing countries, informality is widespread “… in developing countries, informal employment comprises one-half to three-quarters of non-agricultural employment in developing countries and, if informal employment in agriculture is measured, a higher percentage still of total employment” as noted by ILO (2002) (see appendix A for more detail). Based on a six-developing country case study, Chen et al. (2005) draw attention to the labour force segmentation in terms of sex and employment status, with women more likely to work in informal activities. As for formal employment, women appear to have less access to private formal wage employment than men. For informal employment, the segmentation mirrors in the concentration of women in the more precarious and lower quality forms of informal employment, i.e. domestic workers and industrial outworkers. The labour force segmentation is also reflected in a given category of both formal and informal
employment, with woman’s earnings and work hours lower than men’s. A reversed pattern is observed in time spent working in unpaid care work, with employed women spending more time in unpaid care work than employed men. In sum, the segmentation of the labour force may suggest an imperative and interesting issue in examining sources of gender inequality.

*Trade and informality*

The linkage between trade reforms and informality for developing countries marks interesting strand of the trade literature (Stallings and Peres, 2000). Little empirical work has examined this relationship, though (Goldberg and Pavcnik, 2004). A recent view on the impact of trade policy on informal employment claims that the informal sector is likely to absorb the negative effects of trade expansion (Goodfriend and McDermott, 1995). Trade liberalization results in market expansion, leading to a larger scope for specialization and inducing gains from specialization. Accordingly, production from households – the informal sector, will be shifted towards specialized firms – the formal sector. Wages in the formal sector will be increased more than the value of household’s labour marginal product as predicted by Edmonds and Pavcnik (2004). An alternative view argues that trade can increase the size of the informal sector (Goldberg and Pavcnik, 2003). They argue that trade liberalization and the intensified import competition may lower product prices, and thus increase the chance that the firm will need to lay off formal workers in response to demand fluctuations. These fired worker subsequently may seek employment in the informal sector. In this way, trade is proposed to increase the probability of working in the informal sector. This argument, however, receives mixed evidence (Goldberg and Pavcnik, 2004). While a negative association between tariffs and the probability of informal work is found for public-sector firms in Morocco (Currie and Harrison, 1997) and for Columbia prior to the country’s labour market reform (Goldberg and Pavcnik, 2003), Brazil is not the case where the labour market is less rigid.

Overall, though the above evidence provides some, albeit mixed, hints on the linkage between trade and informality, a muteness about the partipartion of women in the informal sector and the segmentation of the labour force in terms of gender and employment status as previously discussed does exits.
Arguably, the three issues including trade, gender and labour market are interlinked from a theoretical point of view. As such, one should look into the trade-gender linkage intersected with the features of the labour market in order to better understand gender inequality under trade reforms. To our knowledge, this important issue has not been empirically investigated. In an attempt to fill this gap, we raise a question as to what extent trade reforms forces or reinforces gender inequality through the links with the labour market segmentation, notably the incidence of the informal sector. The scientific contribution of the proposed research is twofold. First, it provides a new look into the gender impact of trade, taking into account the segmentation of the labour market regarding formal and informal employment. Given this focus, the study will arrive at new insights of the gender inequality in Vietnam as the case of a developing country. Second, the study incorporates multi-dimensions of gender inequality analysis, i.e. employment opportunities, wage gap and unpaid care work, into one research. Whereas this type of analysis is more in accordance with reality, it has been mute in previous studies. Overall, the proposed research aims at extending our understanding on the gender impact of trade vis-à-vis implications of the labour market in developing countries.

3. Policy relevance
The active role of women in Vietnam’s labour market has been widely acknowledged, evident from an increasing participation rate of women in economic activities (see section 1 below). This is also accompanied by a rising in women’s earnings relative to men over the 1993 – 2002 period (Pham and Reilly, 2007). Taking into account the heterogeneity across the state and private sectors, evidence on gender pay gap is attributable to the within-sector differences rather than between-sector differences (Liu, 2004a). Having focused only on gender wage gap in the wage employment sector which accounts for less than a quarter of the Vietnamese labour force, the current studies pay little attention to the presence of other sectors, e.g. the informal sector, in which women are concentrated on, and also leave the potential linkage between trade and gender inequality abandoned. In a field study on female workers in the garment sector, Kabeer and Tran (2006) characterize working conditions of and problems faced by women employed in this sector in 2001. They conclude that women are crowded into the garment industry as a path out of rural poverty as other sectors are not open to them. While this finding helps
clarify the employment status of women and necessitate policies for a sustainable employment solution for women, it fails to link the effects of trade to the employment issues of women. Another reason for our interest in Vietnam is accredited to the empirical background of the country. The twelve-year 1993 – 2004 period has marked several impressive changes of Vietnam with respect to trade and labour market. Trade reforms have been remarkable, as highlighted by an enormous increase in international trade in this period (see table 1). The labour market experiences some notable changes regarding participation rates, structure of employment and gender segmentation et cetera. This promises some interesting reflections in examining the impact of trade on gender issues vis-à-vis the labour market.

The proposed research is of particular policy-relevance for Vietnam. It considers the position of Vietnamese women in different sectors while taking into account changes in Vietnam’s labour market under trade reforms. The fact that women continue to be overrepresented in the informal sector poses an essential question as to what extent what informality and its dynamics in the era of trade reforms can explain gender inequality. Aside from employment opportunities and the wage dimension, this research will ascertain another important patterns of gender inequality, i.e. unpaid care work. By doing so, the study discerns not only the economic status, but also the social status of women in the context of a developing country.

As a primary objective, the research will distinguish sources of gender inequality as pertaining to the impact of trade and/or to the inherent features of formal or informal employment. Overall, the findings of the study aim at motivating policy implications towards gender equality target. For instance, if the gender effect of trade is found to be adverse in the informal sector\(^3\), government interventions should aim at reducing women’s vulnerability in the informal sector and for a longer-run gradually reducing the share and size of the informal sector so that the formal sector grows. Foremost, a key issue remains as to what would be the best way of providing social protection for women working in the informal sector.

4. Methodology

\(^3\) A hypothetical finding may be that trade reduces the size of informality, crowding capable women into the formal sector while leaving low skilled women who suffer from a more severe wage disparity.
In the proposed research, different methods will be used to answer the specified research questions, using data drawn from the three surveys on Vietnam Household Living Standards Survey conducted in 1992/1993, 1997/1998 and 2004. The level of analysis for most exercises is at the individual level. A brief discussion of each method used is as follows.

**Question 1** aims to highlight the general employment status of women and portray different patterns of gender inequality in Vietnam over the twelve-year 1993–2004 period. For this, we apply a descriptive approach in order to sketch out a general picture of gender inequality along with its multi-dimension intersected with diverse segments of the labour market. Employment outcomes will be categorized into formal vs. informal employment over two groups of gender\(^4\): (i) formal wage employment (agriculture and non-agriculture), (ii) informal self-employment (agriculture and non-agriculture) and (iii) informal wage employment (agriculture and non-agriculture). Employment characteristics of each category such as earnings and work hours, the amount of time for unpaid care work, individual endowment attributes such as education and age and regional characteristics will then be tabularized and analyzed. Employment is defined as having worked over the past 7 days. Wages include salaries and all other payments in cash and kinds. This descriptive analysis will provide some hints at the gender distribution towards different segments of the labour force in terms of employment opportunities, working conditions and gender gap of wages and of time for unpaid care work.

**Question 2** attempts to identify the effects of trade on individual choice of working in the formal or informal sectors. The current literature on trade provides different theoretical arguments for this linkage. The specialization gains theory by Goodfried and McDermott 1995 predicts an increase in the probability of formal wage employment and decrease in that of informal employment as a response to trade. Alternatively, the laying-off model by Goldberg and Pavcnik (2003) suggests an increase in informal employment as import competition raises the chance for firms to ration formal workers, who may subsequently switch to informal work. Linked with gender, the impact of trade on employment may be

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\(^4\) We base our classification on guidelines provided by MDGs, see Chen et al. (2005) for a more detailed description.
gender-differentiated, reflecting the diverse segmentation of the labour market. The fact that women are concentrated in the informal sector, which is typically comprised of lower forms of earnings (Chen et al., 2005) may prevent women from taking advantage of trade. However, Pham and Reilly (2007) conclude to an improvement in the relative wage position of women in the renovation period in Vietnam.

Model specification

To estimate the probability of working in a certain sector, i.e. the informal sector, we should take into account the self-selection decision of individual between different sectors, assuming that an individual chooses the sector which maximizes their utility. Therefore, the sectoral earnings and the sectoral employment choice can be estimated simultaneously using a three-equation switching regression model. This method has been commonly used in the studies on earnings gap (Pisani and Pagán, 2004; Marcouiller et al. 1995). Given the two employment outcomes of our interest, i.e. formal vs. informal employment, we confine our current empirical application to wage employment within the category of informal employment due to the inavailability of earnings data for self-employment category. Specifically, the following three-equation switching model will be estimated.

\[
\begin{align*}
(1) \ln Y_{FL} &= X\beta_{FL} + L\theta_{FL} + u_{FL} \\
(2) \ln Y_{IL} &= X\beta_{IL} + L\theta_{IL} + u_{IL} \\
(3) I^* &= H\gamma + Z\lambda + R\nu + L\alpha + \varepsilon
\end{align*}
\]

In the model, \(\ln Y_{FL}\) and \(\ln Y_{IL}\) are the logs of hourly wages of formal and informal workers, respectively\(^5\). \(X\) refer to the determinants of earnings, and \(\beta_{FL}\) and \(\beta_{IL}\) are vectors of coefficients. \(I^*\) represents an unobservable latent variable that captures the probability of working in the informal sector. If \(I^*\) is positive, then we observe that the individual is employed in the informal sector \((I = 1)\), and if \(I^*\) is negative then the worker is employed in the formal sector \((I = 0)\).

In the employment choice equation, we include variables identified as influencing the participation in a certain sector of employment. As common in other studies (Reilly and

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\(^5\) Hourly wages refer to cash and in-kind payments of the main job over the past 7 days. Note that this is also used by Pham and Reilly (2007) while Liu (2004b) base on the main job over the past 12 months.
Dutta, 2005, Gong et al. 2004, Liu 2004ab and Maloney, 1999), these variables include individual demographic information $H$, such as number of children, dependency ratio, whether or not an individual is a migrant, indicators for ethnic origin and regional attributes. As an individual’s willingness to work in the informal or formal sector may vary along with different industries, a vector $Z$ of industry indicators is included. This inclusion allows us to capture the possible policy impact on industries where individuals work. $R$ represents regional attributes for which we can use various commune characteristics. Finally, trade openness measures are represented by a vector $L$, which we turn to discuss in detail later.

Assuming that $\sigma^{2}_{\varepsilon} = 1$, and there is no correlation between the disturbance terms $\varepsilon$ and industry indicators, regional variables and trade openness measures, the system of equations can be estimated jointly using maximum likelihood (Amemiya, 1985; Maddala, 1983). The correlation coefficients between $\varepsilon$, $\mu_{\text{fl}}$, and $\mu_{\text{f}}$ capture the ceteris paribus direction and the degree of selectivity in each sector (Borjas and Bronars, 1989; Maddala, 1983). As analysed by Pisani and Pagán (2004), if the correlation coefficient in the informal wage equation turns out to be positive, then there is evidence of positive selection into the informal sector. Conversely, if the correlation coefficient is negative, then negative self-selection exists in the informal sector. For the formal sector, the reverse will be in place.

Incorporated in the above switching regression system, sectoral wages equations identify wage distributions for both groups of gender, which we will use to determine gender wage inequality. As in standard Mincerian wage equations, we include a vector $X$ - determinants of earnings. In this study $X$ refers to a set of individual demographic information, household information and geographical attributes. By convention, individual characteristics such as education, working experience, age, marital status and ethnic origin are included in the earnings model. Following Pisani and Pagan (2004), we argue that indicators of household wealth (dependency ratio and landholding) and geographic attributes (urban and regional residence) may also influence earnings. The standard Mincerian wage equations are then augmented with the inclusion of trade variable $L$ to capture the impact of trade on sectoral wages. Though some argue that in developing countries employment responses to trade policy are greater than wage
responses (Goldberg and Pavnick, 2004), this remains as a strong assumption. Thus, it is reasonable to consider the effects of trade in wage equations, making it possible to detect a link between trade and the gender wage gap in the next empirical application.

*Measure of trade openness*

In pursuit of identifying the impact of trade on an individual’s employment status, we include a set of trade variables $L$ in both the wage equations (1) and (2) and the employment equation (3) to capture the impact of trade openness on sectoral wages and on sectoral employment choice, respectively. A crucial issue arising from this application is to find an appropriate proxy for trade reforms, which occurs at macrro level, to capture the effect of trade on wages and employment decision at the individual level. To deal with this problem, we follow an innovative procedure proposed by Pham (2006)$^6$, in which he combines the tariff data for Vietnam and the household surveys to construct a proxy of trade exposure the commune level – the lowest administrative level. He argues that the level of trade exposure for individuals/households should be adjusted to allow for transmissions of trade reforms from the border to the individual and household. The nationally aggregated tariff data are, therefore, adjusted to the commune level, generating two trade openness indices: agricultural openness index $(T^c_f)$ and nonfarm openness index $(T_{nf}^c)$.

\begin{align*}
(4) & \quad T^c_f = \sum_{f=1}^{F} \left( \frac{Q_f^c}{\sum Q_f^c} \right) TR_f \\
(5) & \quad T_{nf}^c = \sum_{k=1}^{K} \left( \frac{E_k^c}{\sum E_k^c} \right) TR_k
\end{align*}

$^6$ On this point, we would like to acknowledge Hung Pham for his very useful suggestions in handling the issue of trade measures. In earlier versions of this proposal, we suggested to use some aggregate sectoral trade measures such as import penetration ratio, share of export/import over GDP at a 2-digit level. So applied, trade measures can be made available for a very limited number of tradable sub-sectors. Therefore, we resign from this inappropriate trade proxy.
$Q^c_f$ is the output value of farming activity $f$ at that commune; $TR^c_f$ is the weighted-average tariff of agricultural crop $f$ and $T^c_f$ is the tariff adjusted by the output weight of that crop at each commune; $E^c_k$ is the number of people working in nonfarm sector in that commune; $TR^c_k$ is the weighted-average tariff of nonfarm sector $k$ and $T^c_k$ is the tariff adjusted by the employment weight of that sector at each commune\(^7\).

The use of these trade measures appears to be a practical choice given the coverage of a reasonably large number of communes in the household surveys, i.e. 120 rural (only) communes in the VLSS 1992/1993, 156 rural and urban communes in VLSS 1997/98, and 2181 rural and urban communes in VHLSS 2004. A main caveat of this proxy as acknowledged by Pham (2006) is that tariffs can be a poor proxy for trade reforms especially when trade reform is characterized by removal of non-tariff barriers (NTBs). Practically, we believe that this proxy, albeit its own shortcomings, appears to best suit our purpose of modelling the trade effects at the individual level.

The switching system will be estimated for each gender group using both a pooled three-year sample and single year samples. In essence, the estimation will inform us the impact of trade on individual employment choice of formal vs. informal work. Moreover, the estimation differentiates the determinants of wages, including the effect of trade, for males and females across formal and informal sectors.

**Question 3** shifts our focus to identify the gender wage gap over the period 1993 – 2004 and to link it with trade reforms. There have been different theoretical arguments on the impact of trade on the gender wage gap. The gender wage gap may be narrowed given an increase in competition among firms results in less discrimination against women with comparable skills to men (Becker, 1971). In addition, trade often results in a premium on skills. Alternatively, the resulting increase in the wage gap between skilled and unskilled workers may increase the gender wage gap; given that in most countries the average man has a higher level of labour market skills than does the average woman (Greenaway and

\(^7\) Rather than opting for an adjusted-sectoral openness index, Pham (2006) suggests to use both openness indices attached to farming and non-farming activities. This is justified by the fact that a farmer can be simultaneously involved in a large number of agricultural crops, which makes it impossible to calculate the employment weights for the agricultural activities.
Nelson, 2000). Given the estimated wage distributions, we decompose the wage gap to examine whether the wage differentials are caused by wage discrimination, or from a disparity in skill endowments between men and women in each sector of employment. To do so, we follow the conventional decomposition Blinder-Oaxca (1973) approach, which has been commonly used in wage gap studies. This approach isolates the wage gap not explained by endowments but by a difference in endowments’ rewards – the so-called “treatment effect”. Let $w_m$ and $w_f$ be the means of the natural logs of male ($m$) and female ($f$) wages. The wage gap can be written as:

$$
\bar{w}_m - \bar{w}_f = \beta_m \left( \bar{x}_m^f - \bar{x}_f^f \right) + \left( \beta_m - \beta_f \right) \bar{x}_f^f \tag{6}
$$

$$
\bar{w}_f - \bar{w}_m = \beta_f \left( \bar{x}_f^m - \bar{x}_m^m \right) + \left( \beta_f - \beta_m \right) \bar{x}_m^m \tag{7}
$$

where $\bar{x}_m$ and $\bar{x}_f$ are vectors containing the means of independent variables (“endowments”) for males and females, respectively, and $\beta_m$ and $\beta_f$ are the estimated coefficients from equations 1 and 2. The first term on the right-hand side in both equations is the part of the wage gap that is attributable to differences in endowments; the second term is the part attributable to differences in returns to those endowments. It is essential to note that this approach provides both the aggregate decomposition and the detail decomposition for each group of variables, including trade variables and various individual endowment attributes. Apparently, this allows us to detect the impact of trade on gender wage gap, which is of our primary interest. Further, this method also helps distinguish the magnitude of sectoral selectivity derived from the switching regression, in determining the gender wage gap. In this application, we acknowledge a typical drawback of this decomposition method – the index problem as the use of both the male and female wage structures may produce different results.

**Question 4** examines the impact of trade on gender inequality featured in unpaid care work. As noted, unpaid care work is an important dimension attached to gender inequality. Attempts to gauge the impact of trade on this dimension of gender inequality
are an innovative feature of the proposed research. The same approach dealt with the wage dimension in questions 2 and 3 will also be adopted here.

Model specification

The following three-equation switching regression model will be estimated. In conjunction with the sectoral employment choice, the unpaid care work equations will be estimated for each gender group across both formal and informal sectors.

\[
\begin{align*}
(8) \ln D_{FL} &= O\delta_{FL} + L\pi_{FL} + \phi_{FL} \\
(9) \ln D_{IL} &= O\delta_{IL} + L\pi_{IL} + \phi_{IL} \\
(10) I' &= H\gamma + Z\lambda + R\nu + L\alpha + \epsilon
\end{align*}
\]

In the model, \(\ln D_{FL}\) and \(\ln D_{IL}\) are the logs of an individual’s share of unpaid care work within a household, given that the individual is employed in the formal and informal sector, respectively. Note that our data report unpaid care work as covering various kinds of activities: cleaning, clothing, childcare, preparing meals, fetching water, et cetera throughout the three surveys. Equations (8) and (9) estimate individual shares of unpaid care work on a vector \(O\) of individual characteristics and household characteristics. Aside from some conventional characteristics such as education, age, health status, marital status and ethnic origin, we include some additional variables as suggested by Chen et al. (2005): the overall amount of time devoted for work, whether or not the individual is migrant, occupation of the individual’s paid work. We also argue that household characteristics such as number of children, number of adults and the logs of other household members’ income may affect the share of each individual’s unpaid care work.

As an analogy to equation (3) in the previous system, sectoral employment choice (10) spells out the impact of sectoral selectivity on gender division of unpaid care work. We consider two outcomes of employment, of which informal employment refers to both informal wage employment and informal self-employment. A similar set of variables used in equation (3) will be included here to identify the sectoral choice decision. The same trade measures – commune-level adjusted trade openness indices are included as well.

In attempt to measure the gender impact of trade attached to this dimension of gender inequality, we decide to incorporate trade measures into the unpaid care work equations. Although we hardly find any direct theories supporting the association between trade and
time spent for unpaid care work in the current trade literature, we roughly argue that as trade may expand income-generating activities for women (Wood, 1991), it may also influence gender devotion for unpaid care work.

*Decomposing the gender gap of unpaid care work*

Finally, to determine the impact of trade on gender division of unpaid care work we follow the same procedure Blinder-Oaxaca as applied to examining the gender wage gap to decompose the gender gap of unpaid care work. The only difference is ascribed to the use of logs of share of unpaid care work instead of wages.

5. **Data requirements and sources**

5.1 **Sources of data**

The research relies on various sources of available data. The major source of data refers to the three household surveys, two Vietnam Living Standard Surveys (VLSS, henceforth) conducted in 1992/1993 and 1997/1998 and the Vietnam Household Living Standard Survey (VHLSS, henceforth) conducted 2004. Another source of data is the TRAINS database, from which information on tariff and import values for Vietnam we will be retrieved for deriving the national weighted-average tariff data. Unfortunately, the TRAINS database on Vietnam does not provide information at concurrent times of the household surveys in consideration. Following Pham (2006) we opt to use the TRAINS information for 1994, 1999 and 2004 to construct trade measure for the years 1993, 1998 and 2004, respectively.

Although the household surveys were slightly modified over time, the basic content between the two early surveys VLSSs and the later VHLSS are similar and structured into a commune module and a household module. As with the commune module, the surveys report information on demography, infrastructure, economy, agriculture, non-agriculture, education and health. In the household module, the VLSS and VHLSS surveys provide a wide range of information on household characteristics including basic demography, employment and labour force participation, education, health, income,

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8 We note that Vietnam Household Living Standard Survey conducted in 2002 is also accessible. However, we decide to select the three surveys of our main interest. i.e. VLSS 1992/1993, 1997/1998 and VHLSS 2004 to carry out our empirical analysis for the 1993 – 2004 period. While the use of all the four household surveys will not change the essence of our study, it requires much more empirical work. The analysis can be extended to include VHLSS 2002 upon request.
expenditure, housing, fixed assets and durable goods et cetera. The sample size of the VLSS 1992/1993 and of the VLSS 1997/98 amounts to a number of 4,800 and 6000 households, respectively. The full sample of VHLSS 2004 covers 45,000 households, of which 9,000 households were surveyed in terms of expenditure and income. It should be noted that the two VLSSs construct a panel of 4300 households. It is, however, unable to link the two VLSS with VHLSS 2004.

Through the three surveys data on employment (including the main job and second job) are available for all household members aged from 15 and 60 in the preceding 12 months, in the past 7 days and supplied earning data. Note that this is not the case for self-employment category. Details of employment information slightly differ between VLSSs and VHLSSs in that the latter surveys provide a more specific classification of employment category.

Definition of informality
As recommended by ICLS(2003), informal employment consists of two groups: informal self-employment and informal wage employment. Given the insufficiency of the data used, some adaptations are needed for our study. First, except for VHLSS 2004, the other two surveys do not allow to differentiate informal self-employment from self-employment as a whole. As shown from the three household surveys, self-employment is largely assigned to agricultural activities (see table 3 below), which are considered to be informal according to the proposed indicators on employment by Millenium Development Goal 3 (Chen et al., UNIFEM 2005). So, we fit self-employment in the informal sector alone. Second, informal wage employment is not well identified from the current surveys in that we do not have detailed information on different types of contract workers (employees of informal enterprises, casual or day labourers, temporary or part-time workers, paid domestic workers, unregistered or undeclared workers, called homeworkers). For this reason, we categorize “work for small household enterprises” (in VLSS 1997/1998), and “work for other households” (in VHLSSs) as informal wage employment. Although this categorization may be somewhat ad hoc, it is drawn from the ICLS’s (1993) consensus which refers the informal sector as employment and production that takes place in small and/or unregistered enterprises. Third, in the VLSS 1992/1993, working for other households is merged in the same group with working for private
enterprises. As a matter of fact, the number of private enterprises is reckoned to be very small in the period 1992/1993. Therefore, we claim “working in private company/household” in the VLSS 1992/1993 as pertaining to informal employment. Finally, while employment in the government sector captures a considerable share in the labour market in Vietnam, its connection to trade reforms may be limited. In fact, the government sector was treated as a special type of employment according to the VHLSS 2004 survey and thus precluded from the formal labour work. To make it compatible among the three surveys, we will also exclude individuals employed in the government sector in other three surveys. In the next section, we will outline a number of descriptive features of our data concerning the main issues of the research.

5.2 Empirical background of the research: A Vietnam’s story

It is widely acknowledged that trade expansion has been one of the most important factors in contributing to Vietnam’s economic growth. Real GDP growth rates was at above 7% annually while the rate of export or import growth was more than double of real GDP growth. The high growth rates in Vietnam in the period 1990 – 2005 were associated with high export growth rates, as depicted in table 1. This was the result of a more outward looking trade policy and export promotion measures. With regards to tariff evolution, customs tariffs were firstly introduced in 1988, and the number of tariff lines and tariff rates increased (table 2). It is also documented that tariffs on inputs and capital goods tend to be quite low while tariffs on consumer goods are high (CIEM, 2001). The average effective rate of protection (ERP) for the ‘tradable’ sectors experiences a considerable decline while there has been a marginal reduction of the nominal rate of protection (NRP) in the 1992 – 2003 period (Pham, 2007). In contrast, a substantial decline in tariffs is observed in the manufacturing sector (Athukorala, 2005).
Table 1: Vietnam: Real GDP and trade 1990 - 2005

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth (%)</td>
<td>8.2</td>
<td>6.9</td>
<td>7.5</td>
</tr>
<tr>
<td>Export growth (%)</td>
<td>16.4</td>
<td>19.3</td>
<td>17.9</td>
</tr>
<tr>
<td>Import growth (%)</td>
<td>21.7</td>
<td>12.5</td>
<td>19.1</td>
</tr>
</tbody>
</table>


Table 2. Nominal tariffs in Viet Nam, 1992-2003

<table>
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<th>Shares of tariff</th>
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<th>93</th>
<th>94</th>
<th>95</th>
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<th>97</th>
<th>98</th>
<th>99</th>
<th>‘00</th>
<th>‘01</th>
<th>‘02</th>
<th>‘03</th>
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<tbody>
<tr>
<td>0 - to 10%</td>
<td>68</td>
<td>66</td>
<td>66</td>
<td>62</td>
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<td>64</td>
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<td>59</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>57</td>
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<tr>
<td>Above 10 -20%</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>20</td>
<td>13</td>
<td>13</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Above 20 -40%</td>
<td>15</td>
<td>15</td>
<td>16</td>
<td>14</td>
<td>17</td>
<td>17</td>
<td>18</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>Above 40%</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>11</td>
<td>10</td>
<td>19</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Average Rate</td>
<td>10.7</td>
<td>11.8</td>
<td>12.3</td>
<td>12.3</td>
<td>13.4</td>
<td>13.6</td>
<td>13.6</td>
<td>16.3</td>
<td>16.2</td>
<td>15.7</td>
<td>15.4</td>
<td>16.6</td>
</tr>
<tr>
<td>Maximum rate</td>
<td>120</td>
<td>150</td>
<td>200</td>
<td>200</td>
<td>100</td>
<td>200</td>
<td>60</td>
<td>100</td>
<td>100</td>
<td>120</td>
<td>100</td>
<td>113</td>
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<tr>
<td>Total tariff lines</td>
<td>2813</td>
<td>2967</td>
<td>2934</td>
<td>3023</td>
<td>3180</td>
<td>3126</td>
<td>3163</td>
<td>6056</td>
<td>6341</td>
<td>5724</td>
<td>6413</td>
<td>5107</td>
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</tbody>
</table>

Source: retrieved from various sources

Vietnam’s labour market segmentation

In this sub-section, we highlight some features of Vietnam’s labour market regarding the labour force participation and the labour market’s segmentation with attention paid to both groups of gender. We also compare some basic employment indicators between different categories formed by gender and sector.

Vietnam’s labour market is characterized by a high participation rate among both men and women as show in table 3. Different patterns in the changes of gender-specific participation rates emerged over the entire 1993 – 2004 period, with a decline in the participation rate of men and an increase in the participation of women. Table 3 also reveals the dynamics of the labour market, differentiated into gender and employment sectors. As broadly defined, the informal sector is split into self-employment and informal wage employment. As seen from table 3, self-employment represents a largest component of Vietnam’s labour markets, though the share of self-employment exhibits a decline over this period, i.e. from 79.13% in 1993 to 68.62% in 2004. It is important to note that this category is dominated by agricultural activities and overrepresented by women. With respect to the second category of the informal sector, informal wage
employment experiences a surge over the entire period, though its proportion has fallen in 1998 as compared with 1993. The observed trend seems to be inclined with the prosperity of household enterprises in Vietnam during this period (Vijverberg and Haughton, 2002).

**Table 3. Labour force participation and labour force segmentation**

<table>
<thead>
<tr>
<th></th>
<th>1993</th>
<th>1998</th>
<th>2004</th>
</tr>
</thead>
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<tr>
<td><strong>Labour force participation (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>84.49</td>
<td>81.56</td>
<td>83.67</td>
</tr>
<tr>
<td>Female</td>
<td>80.38</td>
<td>79.55</td>
<td>81.35</td>
</tr>
<tr>
<td><strong>Labour force segmentation (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of which agricultural self-employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>73.96</td>
<td>70.96</td>
<td>61.44</td>
</tr>
<tr>
<td>Female</td>
<td>83.98</td>
<td>82.14</td>
<td>75.90</td>
</tr>
<tr>
<td><strong>Informal wage employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>16.00</td>
<td>9.16</td>
<td>19.97</td>
</tr>
<tr>
<td>Female</td>
<td>8.10</td>
<td>4.50</td>
<td>9.34</td>
</tr>
<tr>
<td><strong>Formal wage employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5.17</td>
<td>6.09</td>
<td>18.59</td>
</tr>
<tr>
<td>Female</td>
<td>3.98</td>
<td>3.47</td>
<td>14.76</td>
</tr>
<tr>
<td><strong>Government sector &amp; others</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>4.88</td>
<td>13.79</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>3.94</td>
<td>9.89</td>
<td></td>
</tr>
</tbody>
</table>


Note:

a. Figures are calculated as a participation rate of the group of interest over the employed people, for men and women separately.

b. Labour force covers people aged from 15 to 60 years old.

c. Employment is identified as having jobs over the past 7 days prior to the surveys.

d. Self-employment consist of agricultural self-employment and non-farm self-employment. Informal wage employment is confined to paid work for other households or small household enterprises. These two categories constitute the informal sector.

e. Formal wage employment refers to those employed in formal enterprises of different kinds of ownership. This category is known as the formal sector.

f. Government sector refers to working for the government and other state organizations.

Women are less active than men in this category as compared with self-employment, marked by a lower participation rate of women relative to men participation. A
contraction in the size of the informal sector is observed when combining the two components, shrinking from 90% of the labour market in 1993 to 82.81% in 2004. A notable feature arises with the formal wage employment. A rise of formal wage employment from 4.55% of the labour force in 1993 to 16.99% in 2004 is indicative of a remarkable growth of the formal labour sector in Vietnam. Not surprisingly, women appear to be less attached to and/or less chosen for the formal sector than men. Their position has been however considerably improved over the period, implying an increasing wave of women participation in the formal labour sector.

In sum, this descriptive information points to a contraction of the informal sector and on the contrary a growth of the formal sector in Vietnam’s labour market in the 1993 – 2004 period. It is also emerged from the above analysis employment opportunities in both sector differ across two groups of gender.

Table 4 highlights more detail of the employment picture in Vietnam by providing several key employment indicators such as average hourly wage rates and time spent for unpaid care work. This information is differentiated into gender participation in each sector.

At first glance, average wages have rapidly grown at approximately 19% per annum as shown in table 4. This observation is also reported by other studies on Vietnam (Pham, 2006, Gallup, 2002). In parallel to the rise in hourly wage rate, on average female wage has been relatively improved as to male wage. Although the female disadvantage widened between 2004 and 1998, it narrowed over the entire 1993-2004 period.

As different sectors of employment are considered, some interesting patterns emerge. First, formal employment is better paid than informal employment with respect to both groups of gender with an exception associated with the year 1993. Note that in 1997 the Vietnamese government commenced the policy on minimum wage for employees working in Vietnamese formal enterprises. This policy might have certain implications for the levels of wage in the formal sector. Second, a striking feature is observed when one compares the gender wage gaps between informal wage employment and formal employment. While women received a better reward in the informal sector, their position became relatively poorer in the formal sector. A question on whether this observation can
be a reflection of changes in size of both sectors and changes in wages as a response to trade will hopefully be answered when we carry out a thorough empirical analysis.


<table>
<thead>
<tr>
<th></th>
<th>Nominal hourly wage rate (1000 VND)</th>
<th>Unpaid care work (hours/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>1.932</td>
<td>3.039</td>
</tr>
<tr>
<td>Male</td>
<td>2.116</td>
<td>3.212</td>
</tr>
<tr>
<td>Female</td>
<td>1.652</td>
<td>2.773</td>
</tr>
<tr>
<td>F/M Ratio</td>
<td>0.781</td>
<td>0.863</td>
</tr>
<tr>
<td>Self-employment</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Male</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>F/M Ratio</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Informal wage employment</td>
<td>2.103</td>
<td>2.880</td>
</tr>
<tr>
<td>Male</td>
<td>2.350</td>
<td>3.141</td>
</tr>
<tr>
<td>Female</td>
<td>1.647</td>
<td>2.379</td>
</tr>
<tr>
<td>F/M Ratio</td>
<td>0.701</td>
<td>0.757</td>
</tr>
<tr>
<td>Formal wage employment</td>
<td>1.882</td>
<td>3.344</td>
</tr>
<tr>
<td>Male</td>
<td>1.916</td>
<td>3.452</td>
</tr>
<tr>
<td>Female</td>
<td>1.840</td>
<td>3.164</td>
</tr>
<tr>
<td>F/M Ratio</td>
<td>0.960</td>
<td>0.916</td>
</tr>
</tbody>
</table>


Note:

a. Hourly wage rate includes all payments in cash and kinds.

b. Unpaid care work is reported from the surveys as the average amount of time spent for unpaid domestic activities such as cleaning, clothing, childcare, preparing meals, fetching water, etcetera.

c. F/M ratio is an indication of the relative position, measured as the ratio of average female wage (unpaid care work hour) to its average male counterpart.

In terms of unpaid care work, on average women and men tend to spend less time for unpaid care work. However, the gender gap of this dimension has slightly widened over the period, and this is consistently observed for all sectors of employment. This poses an interesting question as to what extent gender division of unpaid care work has been evolved over the past years.

On the whole, these employment indicators exhibit several impressive changes in different dimensions of employment vis-à-vis gender. Formal empirical models should
look into these partterns to explore employment in relation to gender issues in the presence of trade reforms.

6. Key references.


7. Dissemination strategy

Gender inequality, trade and informality are among key issues in the social and economic development in Vietnam. The research focuses on the linkage effects between these three issues. Techniques on the decomposition of changes in earnings, and in employment opportunities, and various econometric models on explaining gender issues on the impact of trade and informality. As the project progresses, the team members are expected to disseminate the findings, knowledge, and techniques from the research during their daily work to the staff members of their own institutes. After the project finishes, findings from this research will be to some extent integrated into the development strategy of Vietnam through a number of activities covering a wide range of audience such as seminars and papers.

First of all, the proposed study will be presented in at least three local seminars. The first seminar will be held in the host institute of the researchers – Institute for Economic Research – Ho Chi Minh City, Vietnam. The second seminar will take place at the Union of Women – an organisation predominantly concerned with gender equality in Vietnam. The third seminar will be held at the Central Institute for Economic Management.
(CIEM), Vietnam. While the first seminar targets local researchers, the second and third seminars are hoped to disseminate the result of the research to policy makers, who are primarily interested and directly in charge of formulating poverty-alleviated policies. In addition, it is likely to expand the outreach of the study to several international organizations such as WB and ADB in Vietnam.

Secondly, a primary objective of the research team is to present the main findings of the interim report at international conferences for exchanging ideas and receiving comments.

Third, main findings of the study will be geared toward publication in various forms. A policy report will be conducted and submitted for a PEP working paper. The brief findings and conclusions will be submitted for a publication in *Journal of Economic Management Review*, Central for Economic Management, Vietnam. In regard of academic interest, the proposed study will be submitted to a possible article in *Journal of Development Studies*.

Finally, the findings of the study will be also put in an international website of PEP, and Vietnamese websites of Institute of Economics Research, Ho Chi Minh City and Center for Economic Management.

8. **List of team members:**

(1) Team leader: Pham Thi Thu Tra (Vietnamese; age: 33; gender: female)


- June 2002- September 2006: Ph.D researcher at Research school Organization and Management (SOM), University of Groningen, the Netherlands.

(2) Team member: Le Thai Thuong Quan (Vietnamese; age: 39; gender: male)


(3) Team member: Nguyen Thai Thao Vy (Vietnamese; age: 29; gender: female)

• July 2004- now: Lecturer, Faculty of Economics and Business Administration.
  Open University of Ho Chi Minh City. I give lectures in subjects such as Microeconomics, Macroeconomics and International Trade- Theories and Policies.

• June, 2003- now: Research Associate, Euromonitor Asia (International) Pte.,

(4) Team member: Ngo Quang Thanh (Vietnamese; age: 35; gender: male)

• 1999 to present: Lecturer, Ho Chi Minh National Political Academy.


9. **Expected Capacity Building**

(1) Team leader: Pham Thi Thu Tra

  • Improve research skills on policy-relevant research.

  • Broaden research capacity to include a wide range of issues of development economics: poverty, international trade, labour market and gender, in both theoretical and empirical fields.

  • Deepen the knowledge of econometrics, especially econometrics of panel data, i.e. switching regression models for panel data.

  • Strengthen the non-parametric techniques, i.e. methods of decomposition
- Improve the skills of conducting and implementing a dissemination strategy of the research.
- Improve the relationship with other State organizations and other research institutes during the project.
- Aim to establish the international cooperation between the host institutes and foreign organisations.

(2) Team member: Le Thai Thuong Quan

- Broaden research capacity to include a wide range of issues of development economics: poverty, international trade, labour market and gender.
- Deepen the knowledge of econometrics, especially econometrics of panel data, i.e. switching regression models for panel data.
- Strengthen the non-parametric techniques, i.e. methods of decomposition
- Extend the theoretical knowledge of poverty, international trade, and gender issues in development.
- Improve skills on conducting policy formulation, writing report and papers.
- Improve the relationship with other State organizations and other research institutes during the project.

(3) Team member: Nguyen Thai Thao Vy

- Learn Stata software and econometrics, e.g. regression analysis.
- Train techniques of secondary data gathering and of data management
- Gain both theoretical and empirical knowledge of poverty, international trade, and gender issues in development.
- Learn the non-parametric techniques, i.e. methods of decomposition.
- Develop skills of doing policy-relevant research, skills on writing report and papers and skills on research presentation.
• Improve the relationship with other State organizations and other research institutes during the research.

(4) Team member: Ngo Quang Thanh

• Improve research skills, English language, skills of report and paper writing, and presenting in seminars.
• Deepen knowledge of econometric techniques.
• Establish first step of international cooperation between the host institute and foreign organisations.
• Help other team members improve the research skills and knowledge of econometrics.
• Give training Stata software to other members in the host institution.
• Learn advanced econometrics, i.e. switching regression models for panel data.
• Gain the theoretical and empirical knowledge of poverty, international trade, and gender issues in development.
• Improve skills of doing policy-relevant research, skills of report and paper writing and research presentation.

10. Any ethical, social, gender or environmental issues or risks which should be noted.
The research uses the data from the Vietnam Household Living Standard Surveys 2002 and 2004. Whereas the surveys are representative for the whole country, and regions of large population, households included in the surveys remain anonymous. As such, the intended research is not engaged in any ethical, social, gender or environmental risks.

11. List of past, current or pending projects in related areas
(Involving team members: name of funding institution, title of project, list of team members involved).

Trade liberalisation, labor market and poverty reduction in Vietnam, VERN project in 2007 (ongoing). Team member: Ngo Quang Thanh.

"A Study for Market Opportunity Identification and Market Chain Analysis". (The second phase of The Project on the Villager Support for Sustainable Forest Management in Central Highland). Team member: Le Thai Thuong Quan.


<table>
<thead>
<tr>
<th>Region/country</th>
<th>Informal employment as percentage of non-agricultural employment</th>
<th>Women’s informal employment as percentage of women’s non-agricultural employment</th>
<th>Men’s informal employment as percentage of men’s non-agricultural employment</th>
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<tbody>
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<td>North Africa</td>
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