

PAGE

policy analysis on growth and employment



Employment Intensity of Non-farm Growth: the case of Vietnam

RESEARCH PROPOSAL

Presented to

Partnership for Economic Policy (PEP)

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Before you begin

Please consult the following webpages/documents regarding PEP's expectations in terms of:

- [Specific policy issues to be addressed by projects supported under the PAGE programme](#)
- [Scientific content of eligible research project proposals](#)
- [Initiatives to be undertaken by PEP supported research teams in terms of policy outreach](#)

SECTION A – For all projects

1. Abstract (100 to 250 words)

The abstract should state the main research question, the context and its relevance in terms of policy issues/needs in relation to PAGE thematic foci, complete with a brief description of the data that will be used.

This study examines the relationship between trade liberalization through imported immediate goods and non-farm employment in rural Vietnam. Using a decline in fertilizer price during the period 1993-1998 as a unique case, the study tests the impact of this decline in fertilizer price on non-farm employment at household level using Vietnam Living Standard Surveys in 1993 and 1998. Meanwhile, the study looks at the channels through which fertilizer price affects non-farm employment. We expect that a decline in fertilizer price would reduce the agricultural-working hours and increase agricultural income, this leads to higher non-farm employment. We also use Vietnam Living Standard Surveys 2006, 2008 and 2010 as falsification test.

2. Main research questions and contributions

Explain the focus (or key questions) of your research and its policy relevance.

- 2.1. Explain why you think this is an interesting research question and what the potential value added of your work might be (knowledge gaps). You might want to explain whether or not this question has been addressed before in this context (including key references), and if so, what do you wish to achieve (in addition) by examining the question again?

In standard trade theory, the impact of trade liberalization on employment is ambiguous. The Heckscher-Ohlin theory predicts that trade will only increase employment in labor-intensive sector in a labor-abundant country. Full employment is, however, not generally the case in many developing countries in the wake of trade liberalization. For instance, a number

of studies in the context of Vietnam find that there was a labor surplus in rural areas in the years preceding trade liberalization (Tran and Yoon 2009). Dutt, Mitra and Ranjan (2009) find theoretically that in the presence of unemployment, trade liberalization leads to a net job creation in the export sector and a net job destruction in the import sector. Job creation takes time, while job destruction may have an immediate impact. Therefore, trade liberalization results in unemployment in the short term and unemployment-reducing effects in the long term. Recently, researchers have focused on the impact of imported intermediate goods on enterprise performances. Clearly, trade liberalization has been characterized by the increase in world imports. Reduction in tariff and non-tariff barriers has produced a significant rise in the trade of intermediate goods, especially for developing countries, which depend on foreign technology. Access to new imported intermediated goods allows domestic firms to expand productions, increase productivity and reduce production costs. Using firm-level data from India to examine the impact of imports of intermediate inputs on domestic product scope, Goldberg et al (2010) find that lower input tariffs lead to increase in new products introduced by domestic firms. Smeets and Warzynski (2010), using firm-product level dataset from Denmark, indicate that imported inputs of different origins improve firm total factor productivity. Variety of imported inputs also plays an important role in increasing firm productivity, this is because firm has more opportunities in selecting the products with best quality. Halpern et al. (2009) use firm-level data for Hungary and indicate that most of the positive effect of importing intermediate goods on firm productivity comes from greater imported input variety. Similarly, Amiti and Kinings (2007) show that lower tariffs on intermediate inputs raise productivity via learning, variety and quality effects in Indonesia. All these studies point out that imported immediate goods play a vital role in firm performances. However, there is little known about the impact of intermediate inputs on non-farm activity at household level.

Further, the linkage between agricultural and manufacturing sectors has been hotly debated. Based on the experiences of the Industrial Revolution in Britain, several economists think that agricultural productivity has a positive impact on industrialization. First, higher agricultural productivity provides enough food to feed the growing population in the industrialization sector, meanwhile, releases labor for industrialized sector. Second, an increase in agricultural income leads to higher demand for industrial products. Gollin et al (2002) indicates that higher agricultural productivity might promote the industrialization. Similarly, Jonhson (2000) at the level of the world, agricultural productivity gain and the growth of the non-farm sector are complements. In contrast, Matsuyama (1992) shows that improvement in agricultural productivity does not result in industrialization in a small open economy because the development of agricultural sector prevent the development of the manufacturing sector. Chang et al. (2006) find that higher agricultural productivity leads to a transition in labor from the agricultural sector to the manufacturing sector. Using variation in high-yielding variety crop yield in India, analyse the impact of improvement in agricultural sector on growth of nonfarm activity, he finds that within the country

agricultural development and are negatively associated with rural non-agricultural activity. Obviously theoretical and empirical studies at macro level have provided mixed results and sometimes contrasting evidence about the relationship between agricultural and non-agricultural sectors. Some researchers argue that agricultural development is an essential condition for non-agricultural sector. Others contend that the development of the agricultural sector promotes non-agricultural sector. Therefore, We need careful empirical evidence to resolve the debate about the role of agriculture in development.

Early agricultural reforms of Vietnam started in 1981. The first step towards market economy occurred in 1988 when Vietnam recognized the family as the basic unit of the agrarian economy and cooperative lands were allocated to individual households. State subsidies to agricultural production were removed. Farmers were free to purchase input and sell output in the market. The 1990s also witnessed gradual liberalization of government controls over trade. Much of the trade restriction on fertilizer was relaxed in 1990s. Niimi, Y et al (2004) argue that the 23 percent decline in fertilizer price between 1993 and 1998 might be clearly attributed to the policy-driven trade liberalization. While fertilizer represents the largest component of farm input expenses (Minot and Gletti, 2000). Therefore, we expect that trade liberalization of Vietnam through relaxation of controls over the fertilizer in 1990s would affect non-farm employment. Although Edmonds and Pavcnik (2006) use the rice price as a proxy for trade liberalization in rural Vietnam and find that higher rice prices lead to re-allocation of labour from farms to nonfarm jobs, they keep silent on the impact of trade liberalization through price of intermediate input, particularly fertilizer price, on non-farm employment. Therefore, does trade liberalization through price of intermediate goods affect non-farm employment? This question is still open and has not been answered. The study explores exogenous variation in fertilizer price in 1990s when Vietnam removed import quota on fertilizer to estimate the impact of this exogenous change on non-farm participation. Recently, Seshan (2013) also uses fertilizer price in 1990s as exogenous variable to analyse its impact on household welfare between 1993 and 1998.

Further, the study will look at the impact of a fall in fertilizer price on agricultural productivity and wage. This also means that we will consider whether the agricultural development due to an increase in agricultural productivity and wage through a fall in fertilizer price might lead to intensification of nonfarm activity. Non-farm activity may develop in rural areas with low agricultural productivity and wage because the factory can take advantage of low cost to produce non-food products.

Meanwhile, we also examine the impact of higher agricultural profit due to a fall in fertilizer price on growth of non-farm jobs. The income effect may increase the demand for non-agricultural products, thus would have a positive impact on non-agricultural jobs. But higher agricultural income would attract more farmers to agricultural sectors. The exogeneous changes in fertilizer prices can be used for identifying the net effects of these two conflicting

forces on non-farm sector

From this perspective, the study will answer the following questions:

Does a decrease in fertilizer price lead to higher non-farm employment in rural Vietnam?

What channels does fertilizer price affect non-farm employment?

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- 2.2. Describe the specific policy issues/needs that your research aims to address; how your potential outcomes/findings may be used in policy making?
- Justify timing of your research in terms of policy and socioeconomic needs/context – e.g. reference to existing/planned/potential policies at the national level.
 - Evidence of previous consultation with potential users (e.g. policymakers and key stakeholders) to help define your research question is strongly encouraged. Include a list of names, institutions and email addresses when possible.

Rural development has been a major objective of the government of Vietnam for many years because 75 percent of Vietnamese people live in rural areas and most of poor people live there. Therefore, identifying good policies for rural development is a priority of Vietnam government. Many policies of government have been issued to promote agricultural development such as: building irrigation, rural roads, developing agricultural support services. However, it is necessary to identify the effective policy for the development of agriculture in rural Vietnam. This is because labor force in rural areas is large, most of unemployment focus in rural areas.

Meanwhile, the government of Vietnam is implemented many anti-poverty policies. While non-farm activity may be a route of moving out of poverty. This means that an increase in non-farm activity would reduce poverty in rural areas. This project also contributes to poverty reduction through identifying the role of agriculture in promoting non-farm activity in rural areas.

Finally, as discussed in Section 2.1, the question is still open that whether expansion of agricultural sector is precondition for development of non-agricultural sector or improvement in agricultural sector can prevent the industrialization. Answering this question might help the policy makers or relevant stake-holders to identify whether the investment in agricultural

sector is good or not.

3. Methodology

Presentation of the specific techniques that will be used to answer the research questions and how exactly they will be used to do so. Explain whether you will use a particular technique normally used in other contexts or whether you intend to extend a particular method and how you will do so. Explain if these methods have already been used in the context you are interested in (including key references).

We compare non-farm employment across two households that differ only in the fertilizer price. Therefore, we will use difference-in-differences method to estimate the impact of fertilizer price on non-farm employment by comparing the differences between 1993 and 1998 (before and after trade reform). The following regressions model is as follows:

$$Y_{ijkt} = \beta_0 + \beta_1 P_{kt} + \beta_2 T_t + \beta_3 (P_{kt} \times T_t) + X_{ijt} \mathbf{b} + \mu_k + \varepsilon_{ijt} \quad (1)$$

where Y_{ijkt} is measures of non-farm activity of individual i of household j in commune k at time t such as numbers of nonfarm-working hours, wage-work hours. P_{kt} is real fertilizer price in commune k at time t . T_t represents for time dummy (equal to zero for 1993 and one for 1998). X_{ijt} are individual and household characteristics such as: age, age squared, education, gender of an individual and education, age of household head and spouse. μ_k is commune fixed-effects. Our interest coefficient is β_3 , which tells us the impact of high fertilizer price on nonfarm activity of an individual. We run all regressions in rural areas only because fertilizer price affects agricultural performances. We also cluster all standard errors at commune level.

We go further by examining in greater detail whether change in fertilizer price is correlated with commune level characteristics. We capture the time-invariant factors across households by running equation (1) using household panel and including household fixed effects as follows:

$$Y_{ijkt} = \beta_0 + \beta_2 T_t + \beta_3 (P_{kt} \times T_t) + X_{ijt} \mathbf{b} + \alpha_j + \varepsilon_{ijt} \quad (2)$$

where α_j is household fixed-effects. This reduces the number of observations because many household did not exist in both surveys 1993 and 1998.

Further, we corroborate the evidence of the impact of fertilizer price on nonfarm activity by running equation (1) and using outcome of interest at household level such as: number of household members participating in non-farm activity, ratio of household members working in nonfarm sector, ratio of non-farm-working hours of households.

Besides, we use two panel datasets 2006-2008 and 2008-2010 as a falsification exercise (the period witnessed the full integration of Vietnam into world economy, so there was not any variations in fertilizer prices, this means that the relationship between fertilizer price and nonfarm activity should not be observed in this period).

The study also shows the channels through which fertilizer price affects nonfarm employment. We expect that fertilizer price has impacts on non-farm employment of rural households through: an increase in agricultural wage, productivity and income. Relaxation and elimination of fertilizer import quota increases the profitability of agricultural production through an increase in agricultural productivity, a decline in cost of production input. A higher agricultural income is expected to increase demand for non-food products, this promotes non-food production, and finally increasing the demand for non-farm labor. Meanwhile, a fall in fertilizer price due to removal of fertilizer import quota can affect agricultural production pattern. Actually, there are two types of fertilizer: chemical and organic fertilizer. If households use organic fertilizer, it takes a lot of time to prepare and deliver organic fertilizer to the field because volume of organic fertilizer is large for plantation. Households spend much less time for agricultural production if they use chemical fertilizer. Therefore, a fall in price of chemical fertilizer due to trade liberalization encourages agricultural producers to use it more, this effect is expected to reduce working time which contributes to agricultural production and rural households have more time to participate in nonfarm activity. To test these ideas, the study also uses equation (1) to run regressions, but the interest outcomes would be agricultural wage, productivity and income. Meanwhile, we will examine whether the growth of nonfarm activity is negatively or positively related to agricultural development. In particular, the intensity of non-farm growth and agricultural development are substitutes or complements.

Table 1 provides preliminary descriptive statistics for rural households. The price of fertilizer price is deflated by monthly consumer price index so that all prices are in January 1998. Obviously, the price of fertilizer decreased from 2.8 (thousand VND) in 1993 to 2.1 in 1998. Hours worked in nonfarm activity per week increased from 8.7 hours to 10.7 hours. The hours worked for wages per week also increased from 3.8 in 1993 to 5.5 in 1998.

Table 1: Descriptive Statistics for Rural Households

	1993		1998	
	Mean	S.D	Mean	S.D
Number of individuals	10039		16487	
Number of commune	115		115	
Fertilizer price	2.8	0.4	2.1	0.3
Hours worked in nonfarm	8.7	19.1	10.7	20.9

activity				
Hours worked in wage work	3.8	13.3	5.5	15.7

4. Data requirements and sources

This is a critical part of the proposal. The key issue is to explain the reason for the use of the particular data. You must establish that they are ideal for the question you wish to address. Please consult the ["Guide for designing a research project proposals"](#) for more detail.

The real price of fertilizer decreased 23 percent between 1993 and 1998. This significant decrease in fertilizer price is due to trade liberalization. Import of fertilizer increased steadily during the 1990s, from 0.8 million tons to 1.9 million tons between 1990 and 1999 (Niimi, Y et al, 2004). We link this regional and intertemporal variation in fertilizer price to variation in non-farm employment at household level. Therefore, Vietnam Living Standards Surveys in 1993 and 1998 are perfect datasets to answer the question because these datasets span the period of the liberalization of fertilizer trade. Meanwhile, we also use Vietnam Household Living Standards Surveys of 2006, 2008 and 2010 as robustness checks for our results. Because Vietnam integrated fully into world economy during the period 2006-2010.

The Vietnam Living Standards Surveys (VLSSs) of 1993 and 1998, and Vietnam Household Living Standards Surveys (VHLSSs) of 2006, 2008 and 2010. These surveys were implemented by the Vietnamese General Statistics Office, with technical assistance from the World Bank, and funded by UNDP. VLSS 1993 includes 4300 households. VLSS 1998 contains 6000 households. The VHLSSs cover the same number of 9189 households in three surveys: 2006, 2008 and 2010. The surveys are nationally representative, and include questionnaires at both the household and commune levels. The household survey contains detailed information on education, health, employment, housing, food and non-food expenses, consumer durables, and credit. The commune survey provides information on price of commodity, infrastructure and institutions at the commune level.

5. Policy influence plan (or research communication strategy)

- Identify potential users of your research findings, including policymakers and other key stakeholders. Provide a list of institutions and, whenever possible, specific individuals to be targeted for effective policy influence. Please also indicate whether you have already made contacts within the institution

- How, in the elaboration and execution of your project (from design to dissemination), will you consult/communicate with these users to both gather their inputs and keep them informed of your project (expected contributions and uses), in order to increase chances of your findings to be taken-up into policymaking?

You can refer to [PEP’s research communications strategy and guidance](#) to have a better idea of what is expected in terms of activities for policy outreach and dissemination.

As a team which is based at Vietnam Academy of Social Sciences, the findings of this study will be disseminated through its wide academic networks and policy-making bodies in the Vietnamese government. Vietnam Academy of Social Sciences has been implemented many policy-consulting activities for the government, so our team can be confident to confirm that we have strong networks in coordinating and disseminating our findings to policy makers. The Academy also usually organize the conferences on economic issues in Vietnam, so it is very effective to present our findings in those conferences because there are a lot of policy makers, researchers and journalist participating in those conferences.

The table below identifies major institutions and specific individuals who have already been contacted for effective policy influence of the research.

Institution	Contact	Target
Institute of Economics	Associate Professor Tran Dinh Thien Director	
Office of State President	Phd. Do Ngoc Huynh	
Ministry of Agriculture and Rural Development	Phd. Dang Kim Son	
Ministry of Labor, War Invalids and Social Affairs	Phd. Nguyen Thi Lan Huong	

6. List of team members

Indicating their age (or whether they are under 30), sex, as well as relevant/prior training and experience in the issues and research techniques involved (start with lead researcher).

Note that PEP favors gender-balanced teams, composed of one senior (or experienced) researcher supervising a group of junior researchers, including **at least 50% female researchers** contributing

substantively to the research project. PEP also seeks gender balance in team leaders and thus positively encourages female-led research teams. (Each listed member must post an up-to-date CV in their profile on the PEP website – refer to “[How to submit a proposal](#)”)

Name	Age	Sex (M,F)	Training and experience
Hoang Xuan Trung	34	M	He holds Phd in economics at Deakin University, Australia. He specializes in the fields of development economics, labour economics and international economics. He has had extensive experiences in monitoring and impact evaluation, poverty analysis and measurement. He has also been a consultant and research leader in different projects for various ministries, universities, institutes, international agencies, and NGOs in Vietnam. Meanwhile, He has excellent knowledge of and experience with Vietnam’s socio-economic context as well as working relationship with mountainous and remote areas. Additionally, He has strong skills in using both qualitative and quantitative methods in data analysis.
Le Thi Van Nga	33	F	She earned Master in economics in Vietnam. She has excellent skills in quantitative analysis. She has participated in many economic projects.
Ho Thanh Huong	36	F	She earned Master in development economics under cooperation between National Economics University of Vietnam and Hague Institute of Social Studies. She specializes in labor economics. She has much experience in processing large-scale household surveys.
Nguyen Duc Hung	24	M	He earned Bachelor of economics in National Economics University, Vietnam. His main research interest is applied economics and institutional economics. He has strong skills in quantitative analysis, especially running econometric models.

7. Expected capacity building

Description of the research capacities that team members (and potentially their affiliated institutions) are expected to build through their participation in this project.

This is an important aspect in the evaluation of proposals and should be presented in some detail. What techniques, literature, theories, tools, etc. will the team and their institutions learn (acquire in practice) or deepen their knowledge of? How will these skills help team members in their career development? Also indicate which specific tasks each team member would carry out in executing the project.

The team members and their respective institutions are expected to benefit from this research project in terms of capacity building on the analysis of econometric models because all team members live in Vietnam and work for Vietnam Academy of Social Sciences. Meanwhile, the team members would have in-depth understandings about the link between fertilizer price and non-farm employment in rural Vietnam. Several tools in econometric models will be used in this project, therefore, this helps team member to improve their skills in quantitative analysis. Furthermore, team member would increase their reputation when the findings of the project are sent to the leading-refereeing journal for publications.

Name	Task
Hoang Xuan Trung	Literature review, being responsible of technical analysis.
Le Thi Van Nga	Literature review, drafting the interim and final reports
Ho Thanh Huong	Running regressions, draft the interim and final reports
Nguyen Duc Hung	Data analysis, draft the interim and final reports

8. 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

Name of funding institution	Title of project	Team members involved
Vietnam Academy of Social Sciences	Why Eastern Europe failed but Vietnam and China won during economic reforms	Hoang Xuan Trung Le Thi Van Nga Ho Thanh Huong

		Dong Thi Thuy Linh
Deakin University, Australia	Revolution, Re-Revolution, and Institutional Persistence: Evidence from Vietnam 1956-2008	<i>Hoang Xuan Trung</i> <i>Ho Thanh Huong</i> <i>Nguyen Duc Hung</i>

9. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.

There is no issues relating to ethical, social, gender or environmental risks.