DOES REDUNDANCY COMPENSATION PACKAGE HELP INCREASE INCOME OF REDUNDANT WORKERS OF RESTRUCTURED STATE–OWNED ENTERPRISES IN VIETNAM – THE CASE OF FORESTATION AND IRRIGATION COMPANIES?

RESEARCH PROPOSAL

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Abstract

Vietnam has conducted the State owned enterprise reform process since 1992. As of the end 2009, about 5,500 State-owned enterprises have been restructured. Under this program, a number of workers became redundant. To help these people, the Government of Vietnam has introduced a number of schemes, ranging from social insurance premium support, early-retirement compensation and training vouchers. As of the end of 2006, a total sum of VND 6,376 billion was disbursed to nearly 200,000 redundant workers. However due to the economic crisis in 2007/08 the SOE restructuring process has been delayed which led to much smaller number of SOEs gone through the process. Also about VND 166 billion was used to compensate for redundancies from 106 enterprises in 2007 and 2008. However the number of redundancies in 2007/08 is not a minor one, about 2,000. In such a bad economic situation when joblessness becomes more and more popular, it is easy to imagine how difficult for those redundancies to get new jobs. Therefore this study would like to conduct a survey on redundancies in 2007/08 to assess their employability and income effect of redundancy compensation package over redundant workers of restructured enterprises in Vietnam. Since most of enterprises restructured in this period fell into the forestation and irrigation sectors, the survey will limit its scope to these two sectors. Findings from the survey will then be used for policy recommendations on the redundancy compensation scheme.
A. Aims

a. Study overview

Vietnam has conducted the state-owned enterprise (SOE) reform process since 1992. Accordingly SOEs have been restructured to improve their performance efficiency. Under this scheme financial and labor problems of the enterprises should be settled before the enterprises are partly or entirely sold to non-State owners. Consequently a number of workers have become redundant. Before 2002 redundant workers may get nothing or small compensation amounts when their companies had to conduct the restructuring process. This led to the delay in the SOE restructuring process for quite a long time, since it did not provide sufficient support for redundant workers. Realizing this problem, in 2002 the Government issued Decree 41/2002/ND-CP on redundancy settlement in restructured SOEs. Accordingly redundant workers may receive various kinds of support from the national Redundancy Fund depending on their seniority with the enterprises. For example they may get social insurance premium support for the unpaid social insurance period so as to get full pension payment. Or they may get a full compensation amount and leave the company. Or they may get training vouchers to upgrade current skills or learn new skills to look for another job. As of the end of 2006, the Government has paid VND 6,376 billion for nearly 200,000 redundant workers. It is planned that the Government will continue this scheme until the remaining 1,500 SOEs complete their reform process.

This scheme is very essential for redundant workers who may become marginalized due to their company reform. Regardless of those who are too old to look for new jobs and want to get lump - sum compensation, a number of redundancies need additional skills to enhance their job-seeking opportunities, especially in the increasing competitive labour market in Vietnam. Therefore it is deemed necessary to boost the training voucher policy, especially when the number of SOEs to be restructured remains high.

Although the program has been done for quite a long time, there have not been any quantitative studies on the actual impact of this program over the increase in income of redundancies. With another 1,500 SOEs to be restructured, the Government may have to pay another big amount for redundancies to complete the SOE reform process. Hence it is necessary to assess the impact of this program, especially the training voucher one, to answer the question whether it is necessary to continue it and, if yes, which policy adjustments should

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1 Report by the National Steering Committee for Enterprise Reform and Development, August 2007
be made to enhance its efficiency. Moreover the economic crisis in 2007/2008 further stagnated the process with only 40 enterprises restructured in 2009, which leaves room for policy improvement in this field. Furthermore Ministry of Labour, War Invalids and Social Affairs (MOLISA) is initiating a national vocational training programme for the poor who include SOE redundancies. However the programme is still criticized about its efficiency. This research may shed some light for the improvement of this national programme.

Due to practical data limitation and the fact that some industries may be hurt by restructuring more seriously than the others, the study will focus on redundancies in irrigation and forestation companies as a case study for policy implications.

**b. Main research questions and core research objectives**

Research questions:
1. Does training voucher and/or self-paid training help redundancies of restructured irrigation and forestation companies in Vietnam improve their employability?
2. To what extent types of compensation have affected the monthly income of redundancies of restructured irrigation and forestation companies in Vietnam?
3. What are policy implications on the redundancy compensation scheme for specialized sectors like irrigation and forestation?
4. Are there any policy implications for the whole industry?

The core research objectives are to conduct a survey on the impact of redundancy compensation scheme over redundancies of restructured irrigation and forestation companies to:
1. Assess the impact of training over the employability of redundancies of restructured irrigation and forestation companies.
2. Assess the impact of the redundancy compensation scheme over income of redundancies of restructured irrigation and forestation companies.
3. Make policy recommendations on the restructuring compensation in irrigation and forestation sectors in particular, and in the whole industry in general.

**B. Background and policy relevance**

**a. Literature review directly relevant to main research question**

Since 1990s the World Bank has provided support for a number of developing countries to conduct their SOEs restructuring program. This included the social support
programs for redundancies. Social support programs should include elements that combine to “pull” and entice excess labor to leave over-staffed enterprises, while at the same time helping “push” and assist displaced workers to quickly rejoin the labor marker. These measures usually include both temporary income support and active labor programs.

Literature has shown that a number of countries around the World have implemented economic restructuring and recovery programs (Fretwell et al, 1995; Hoeven and Gyorgy, 1997; Kikeri, 1998). Some are directly linked with privatization of state owned enterprises (e.g., in transition economies in Eastern Europe and Central Asia) while others (e.g., North America and Western Europe) are part of an ongoing process of economic change and renewal. A review of 12 case studies of enterprise divestiture in Europe, Latin America and Asia indicated that workers as a class did not lose by divestiture, but that individual workers could be worse off, especially where layoffs or reduced hiring were involved (World Bank, 1992). That’s why there is a need for temporary social support programs to mitigate the social impact. Followings are some review of such programs.

- **Latin America**: In Brazil, a varied set of income support and other support packages were used to retrench workers in six state owned enterprises, including three banks and three utilities, between 1995 and 1997. A parallel program was carried out by several states. The program included severance payment, extended medical benefits, retraining, help for business startups, and job search assistance to redundancies. In Argentina, starting from a base of 222,000 employees in thirteen major public enterprises in 1990, employment was reduced to about 42,000 by 1993 via transferring 66,000 workers to private firms, retiring 19,000, and providing 95,000 with severance payments. The advanced age of many workers, generous severance, multi-job holding phenomena and reactivation of the economy and expanding labor market have helped reduce the opposition from labor (World Bank, 1993; Guasch, 1996).

- **Western Europe**: In Germany a new institution, the Truhandanstalt was established to deal with rapid privatization of some 8,000 state companies, with a workforce of 4.1 million. The privatization program had a rapid and had severe impact on employment. Labor reductions were achieved by early retirement, job placement in new private firms, employment creation schemes including wage sub-subsidies, public works, and retraining; plus unemployment benefits. Special employment companies and counseling services were also established to employ and retrain workers. In the UK, British Coal divested a total of
204,000 workers, mostly over the age of 50, who accepted lump sum redundancy payments. In addition, British Coal Enterprise Ltd. was established to assist employees in the sector, and their families, in developing skills and securing new employment with a special emphasis on helping displaced workers start small businesses. In Sweden, the Uddevalla shipyard was downsized via normal turnover, early retirement, a freeze on recruitment, and assistance with job search and retraining. The KLAB mine was downsized by normal and early retirement, severance, and retraining.

- **In Eastern Europe:** Privatization in transition economies often has taken place in a difficult environment where the economy in contracting, and unemployment increasing. In Poland, restructuring in the Coal Sector has been supported by a Miners Social Package which includes lump-sum payments, early retirement assistance, combined with active labor programs (e.g. small business assistance, counseling, retraining) and local economic development assistance to affected communities. In Macedonia, severance payments were combined with active labor programs to assist workers affected by restructuring of 25 large loss makers. Approximately, 1/3 of affected workers participated in the latter services. An added complication in the transition economies is the fact that often a large number of community services (e.g. schools, hospitals, heating, housing) are connected with state enterprises and when these enterprises are liquidated or downsized these social assets must be disbursed in a manner that ensure essential community social services are maintained. In Turkey a generic job loss compensation package is defined in the Privatization Law, and this is supported by a broad array of active labor redeployment programs and related social monitoring activities (Fretwell, 2002)

It should be kept in mind that a number of redundancies are still under the working age. Therefore training and re-training are crucial for their future employability. As a result training vouchers have been given to retrenched workers. However it seems that no in-depth study on this aspect has been available so far. Meanwhile, job training programs are quite common in developed countries like the USA and Europe. In the USA, credible randomized evaluations can be found in such programs as the Job Partnership Training Act (Bloom et al, 1997; GAO, 1996; Heckman et al, 1999), the Job Corps (Burghart and Schochet, 2001) and a

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2 In these countries there is no longer privatization and no training demand for retrenched workers. Hence they aim at training for the young, the disadvantaged who may include job losers of private companies. To some extent this targeted group shares some similar characteristics with the retrenched workers in developing countries.
series of program for welfare recipients (Friedlander et al, 1997). This database was also used for non-experimental analysis, for example LaLonde (1986). These non-experimental evaluations find that training voucher programs help increase post-program employment rate rather than increase wage rate. Such programs raise employment rate because, after finishing the training program, trainees find job faster when unemployed and hold their job longer when employed (Ham and Lalonde, 1991).

In addition to the analysis of nationwide programmes, economists also study the training impacts at company level. Bartel (1995) explains the role of the on-the-job training on the wage growth by using the dataset collected from the personnel records of a large manufacturing company to study the relationships between on-the-job training, wages and job performance. Utilizing a company dataset avoids the biases arising when individuals are unable to accurately recall the amount of training they received and/or when definitions of training vary across diverse firms. The finding is that training makes a positive contribution on wage growth which translates into a company rate of return of at least of 13%. In addition using data on performance ratings shows that training leads to an improvement in job performance.

Such studies in developed countries have led to similar studies in developing countries. However literature on cases of developing countries remains more limited. Betcherman et al (2004) review 69 impact evaluations of unemployed and youth training programs, only 19 of which are in developing countries. Regarding programs in Latin America where the number of the poor is considered as quite high, Betcherman et al conclude that training impacts in Latin America are more positive than the impacts of programs in the USA and Europe. Card et al (2007) present the first evaluation based on an experimental design for a job training voucher program in Latin America. The paper reveals that the Juventud y Empleo (JE) program in the Dominican Republic had no significant effect on employment. There is evidence of a modest (10%) impact on hourly wages and earnings per month, although the estimated are only marginally significant. Another randomization in Argentina (Galasso et al, 2001) shows some similar results. Voucher recipients had a significantly higher probability of employment, though their current incomes were no higher, and training had no significant impact.

b. Explanation of what are the gaps in this literature

Although there have been a number of non-experimental and experimental studies on training vouchers, they still show some gaps which require additional researches. Firstly, as
mentioned above, researches on vocational training in developing countries are more limited than in developed countries. Meanwhile the number of people in developing countries who need vocational training may be higher than that in developed countries due to higher population and lower skill levels. Therefore there should be more vocational training support programs as well as researches on their impacts in developing country settings. Secondly, there have not been any quantitative studies on vocational training programs in Vietnam. Even non-experimental researches on this issue are quite rare. Recently Ministry of Finance has conducted a survey over 3035 redundancies on their use of compensation amounts. The survey aimed at the following objectives: (i) assess the efficiency of the support policies on redundancies for the restructured enterprises; (ii) assess the efficiency of the support policies on redundancies for redundant workers; and (iii) assess the transparency of the process of selection and payment of the subsidies for redundant workers in SOEs. However it is merely a qualitative study. Finally, most programs in other countries aim at the youth, the poor or some other disadvantaged groups. There are few quantitative studies on impacts of vocational training provision for redundancies due to enterprise restructuring. This group of people may have some different characteristics of those in such programs of other countries. For instance they are not too young and/or too inexperienced to learn from scratch. This may require special training scheme for them. As a result the training impacts may be different from those under youth training programs. Therefore such considerations pose a request for a quantitative study on the impacts of vocational training vouchers for redundancies in restructured SOEs in Vietnam.

c. Explanation of how filling these gaps is relevant to specific country policy issues

As Vietnam is a populated developing country, lucrative severance package may become a disaster for the permanent deficit State budget. Moreover if redundancies are not aware of how to use their money wisely, they may use it up for consumers’ goods rather than investment for alternative jobs. Hence it is necessary to guide people on learning new working skills so that they have better chances to find jobs. However it is quite difficult for the Government to conduct expensive social support programs like a widely-spread vocational training scheme due to budget limitation and job availability. Meanwhile people can start from small businesses using simple and/or diversified skills. Therefore an in-depth survey on the use of severance package, with special attention to training option and income-generating demand
of redundancies may provide policy makers with justifications to make better targeted policies on redundancy support. As a result a study on this issue is quite a good start. Moreover when Vietnam completes the SOE restructuring program, it is possible that there should be programs for redundancies of private companies or programs for the youth. Results from this study may shed some light for such programs.

C. Methods

a. General description of the intervention

The team will conduct a survey on redundancies of irrigation and forestation companies equitized in 2007/08. A questionnaire will be developed to discover their employability and income before and one year after the retrenchment. There will be two survey teams with experts from CIEM and provincial Statistic Office who have interview skills and experiences.

The collected data will then be analyzed to discover the impact of severance package over their increased income and employability. Focus should be place on training vouchers and/or other self-paid training activities for job seeking purposes. It is expected that a report will be made to present these impacts over different groups of redundancies, for example by gender, education levels, sector, and so on. If possible the report can be made similar to a randomization study with control and treated group, especially in terms of training efforts.

In addition the team will study sector features, existing severance policies and equitization process. Findings will then be used for interpreting survey results and making policy recommendations. They include recommendations for irrigation and forestation sectors and overall proposals on severance policy for the whole industry.

b. Data description

It is proposed that the study will assess the impact of the redundancy package, with focus on training demand and attendance, over the increase in monthly income of redundancies and their employability. To do so, the research team will conduct a survey on redundancies of irrigation and forestation equitized companies. Followings are rationales for this selection:

- Data availability. Due to the economic crisis, the equitization process in Vietnam has been delayed. Between 2007 and 2008 about 100 enterprises submitted their request for redundancy payment. Among them irrigation and forestation companies
dominate (19 forestation and 28 irrigation companies) with over 1,000 redundancies. Therefore to ensure sufficient data, the irrigation and forestation group should be selected for the survey.

- **Sector focus and suitability.** Irrigation and forestation are quite specialized, which make redundancies difficult to find alternative jobs. Moreover most of these companies are located in rural and high land areas where the labor market is rather quiet. Meanwhile redundancies from construction and commerce companies may face with less difficulty in finding simple/manual or commercial jobs in big cities. Therefore the survey should aim at the most disadvantaged group (irrigation and forestation) to make the most suitable policy recommendations. In addition the focus on limited sectors may ensure data homogeneity.

- **Survey costs and reliability.** Others are enterprises from different industries like construction, shoe-making, commerce, etc. These groups are diversified and have small number of redundancies per company, which increase survey cost and do not guarantee survey reliability. Meanwhile irrigation and forestation companies are located in a limited number of provinces close to each other. This will help optimize survey costs.

<table>
<thead>
<tr>
<th>Province</th>
<th>Irrigation companies</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of companies</td>
<td>Number of redundancies</td>
</tr>
<tr>
<td><strong>North region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nam dinh</td>
<td>8</td>
<td>41</td>
</tr>
<tr>
<td>Dien bien</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Ha Nam</td>
<td>3</td>
<td>46</td>
</tr>
<tr>
<td>Hai duong</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Hai phong</td>
<td>5</td>
<td>101</td>
</tr>
<tr>
<td>Nghe an</td>
<td>1</td>
<td>74</td>
</tr>
<tr>
<td>Vinh phuc</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td><strong>Sub-total (North)</strong></td>
<td>22</td>
<td>321</td>
</tr>
<tr>
<td><strong>South region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dak lak</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Binh dinh</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dong nai</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
It is noted that these data are for long-term contracting employees. They exclude early retiners and short-term contracting people. Actual statistical data show that each company has about 15-20 redundancies on average. Consequently it is estimated that there would be 70 redundancies at four data-unavailable companies. Hence the total number of redundancies in irrigation companies would be 420 (= 350 + 70).

### Table 2: Summarized data of forestation companies by province

<table>
<thead>
<tr>
<th>Province</th>
<th>Number of companies</th>
<th>Number of redundancies</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North region</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuyen quang</td>
<td>6</td>
<td>196</td>
<td>Data are unavailable for one company</td>
</tr>
<tr>
<td><strong>Sub-total (North)</strong></td>
<td>6</td>
<td><strong>196</strong></td>
<td></td>
</tr>
<tr>
<td><strong>South region</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dak lak</td>
<td>2</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Dak nong</td>
<td>8</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Lam dong</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Soc trang</td>
<td>1</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Binh thuan</td>
<td>1</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total (South)</strong></td>
<td><strong>13</strong></td>
<td><strong>129</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
<td><strong>325</strong></td>
<td></td>
</tr>
</tbody>
</table>
located in several groups of provinces close to each other. Therefore it is intended to classify
survey field by region, the North and the South. Most redundancies of irrigation companies are
located in the north, while most of redundancies of forestation companies are located in the
south. This suggests forming two survey teams for two regions. Each team will cover both
sectors in one region.

c. Data collection methods

A questionnaire will be developed to meet the survey objectives. The questionnaire
will include the following groups of information:

- Basic personal information in terms of their name, addresses, income, demographic
characteristics, professional skills, and so on.

- Redundancy characteristics: sector characteristics, job location characteristic, former
job description, severance package, etc

- Income generation methods: using severance package, personal sources, training, etc

- Income before and after at least one year of redundancy.

- Some policy comments.

The research team will make use of the survey on 3,035 redundancies conducted by the
Ministry of Finance in 2002 for additional information on characteristics of redundancies.
Most of questions are multiple choice questions with some open questions.

Key data include:

- Contact addresses of the redundancy and one his/her next of kin
- Demographic characteristics (age, gender…)
- Education level
- Living location
- Income level and sources of income at the time of redundancy
- Level of working skills, reasons of redundancy
- Sector characteristics
- Training needs
- Expectation of new jobs (type of job, expected earnings, whether willing to move to
other regions to search jobs, etc).
- Assessment of any funded or self-paid training courses taken (suitability, usefulness,
quality), if any
• How do you search for jobs? Any support they have received?
• Do they need any other vocational training courses, both available and unavailable at their living location?
• Monthly earnings after twelve months of redundancy
• Income level and sources of income after twelve months of redundancy
• Can they find jobs?
• Types of new jobs or new business they have found
• How long can they find a new job? How easy to find a job? Why?
• Is it a long-term or short-term job?
• Are they entitled to social insurance scheme?
• If they have taken some training, are training skills useful and/or suitable with their new jobs?
• Other available sources of income after redundancy
• Any suggestions to government policy

The drafted questionnaire will be tested in a pilot survey and further refined based on the survey results. This helps ensure that the questions are not confusing or misleading. Interviewees include up to 15 redundancies and five government officers and experts on redundancy scheme. To save costs, the team will choose those who live in or close to Hanoi.

The time duration for the assessment is one year after redundancy. It is expected that at the survey moment, almost all redundancies have experienced at least one year of redundancy. However some companies may have been equitized more early than that time span. And redundancies may forget income information at the survey time. The survey team should pay attention to this situation, try to get as much accurate information as possible and deal with this during data processing.

There will be two survey teams who will collect data in northern and southern provinces. The North team covers eight northern provinces with about 600 interviewees. The South team covers ten southern provinces with about 160 interviewees. To ensure data collection quality and timing, the research team intends to hire officers of provincial Statistic Office and researchers of the SOE Research Department in CIEM as interviewers, since they have interview skills and experiences. Since a number of provinces are mountainous, it may
take time to travel to interviewees’ addresses. Therefore it is expected that the total survey time is up to two months.

**Table 3: Survey team allocation**

<table>
<thead>
<tr>
<th>Team</th>
<th>Number of interviewers</th>
<th>Survey duration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research team members</td>
<td>Hired experts</td>
</tr>
<tr>
<td>North</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>South</td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Information on the addresses of redundancies may be got from former managers/directors of equitized companies. Meanwhile contacts of company management can be provided by the State Capital Investment Corporation (Ministry of Finance) who is responsible for severance disbursement.

With the contact information, interviewers will try to contact and arrange direct interviews with redundancies at their homes. The respondents are expected to answer all required questions. A certain amount of money will be given to respondents to demonstrate the appreciation of their participation.

After one year, the teams will make the second survey to all interviewees to get information on their income after one year of redundancy. Besides, the survey will also help identify who had taken part in training activity and the nature of their training activity. This helps conduct the analysis of training impact after one year of training. It is noted that the training activity should include both funded and self-paid training schemes. This is to take into the consideration the fact that not all redundancies subscribed for training voucher, but then take some training courses because (i) at the beginning they did not realize the importance of skill training; (ii) approved training institutions do not provide suitable and/or quality training courses for them; or (iii) training institutions are located far from their homes. Moreover this may ensure data sufficiency for the analysis. As a result, if the collected data are good, it may generate a randomization – like data to minimize the selection bias problem.

To support the key data collection and analysis, the team also needs to collect additional data as follows:

- Legal documents on Government support for redundancies
- Living standards of each region
• Monthly consumption price index for the analysis of income
• Information on restructured SOEs
• Information on local labor markets in Vietnam
• Information on available and high quality vocational training providers in each regions

d. Modeling and testing

After having sufficient data, the research team will conduct the qualitative and quantitative analysis. At first the team will conduct general qualitative analysis over the collected data to generate the overall picture of employability and income situation of redundancies after one year of their retrenchment.

After that the team will conduct an in-depth quantitative analysis. To test whether training really matter the increased income of redundancies, we use the propensity score matching (PSM) method. The reason of using this method is that redundancies may choose training for both observable and unobservable reasons. This simply comparing the income between training applying and non-training redundancies may be misleading due to the selection bias. The PSM method aims to create redundancies which are comparable in terms of observable characteristics, and then compare redundancies who attend training courses to those who do not. It should be noted that PSM can reduce, but not eliminate, biases generated by unobservable confounding factors. PSM method is more reliable if there are data before treatment (i.e. training) for all observees. Therefore we will try our best to collect such kind of data, although this is quite difficult, since interviewees may not well remember their incomes at the time of redundancy.

Let’s start with the identification of control and treatment groups, whereas the treatment group includes those who took part in some kinds of training activity after retrenchment and the control group includes those who entirely did not do so. Let’s denote $Y_{i1}$ as the average monthly earning of redundancy i taking part in a training programme and $Y_{i0}$ is the average monthly earning of redundancy i not taking part in any training programme. The difference in earning for a redundancy, $\tau_i$, is defined as $\tau_i = Y_{i1} - Y_{i0}$. The primary treatment effect of interest in nonexperimental settings is the expected increase in income of the treated redundancy; hence:
\[ \tau_{1|T=1} = E(\tau_i|T_i = 1) \]
\[ = E(Y_{i1}|T_i = 1) - E(Y_{i0}|T_i = 1) \]

where \( T_i=1 \) \((=0)\) if the \( i \)th redundancy was assigned to treatment (control). The problem of unobservability is summarized by the fact that we can estimate \( E(Y_{i1}|T_i=1) \), but not \( E(Y_{i0}|T_i=1) \).

The difference, \( \tau_{ei} = E(Y_{i1}|T_i=1) - E(Y_{i0}|T_i=0) \), can be estimated, but is potentially a biased estimator of \( \tau \). Intuitively, if the treated and control redundancies systematically differ in their characteristics, then in observing only \( Y_{i0} \) for the control group, we do not correctly estimate \( Y_{i0} \) for the treated group. Such bias is of big concern in nonexperimental studies. The role of randomization is to prevent this:

\[ Y_i = T_i Y_{i1} + (1 - T_i) Y_{i0} \]

is the symbol for independence.

To substitute for the absence of experimental control redundancies, we assume that data can be obtained for a set of potential comparison redundancies, which are not necessarily drawn from the same population as the treated redundancies but for whom we observe the same set of pretreatment covariates, \( X_i \). The proposition by Rubin (1977) extends the framework to nonexperimental settings: If for each redundancy, we observe a vector of covariates \( X_i \) and \( Y_i, Y_{i0} \parallel T_i \), then the population treatment effect for the treated, \( \tau_{|T=1} \), is identified; it is equal to the treatment effect conditional on covariates and on assignment to treatment, \( \tau_{|T=1,X} \), averaged over the distribution \( X|T_i=1 \).

This assumes that, conditioning on observable covariates, we can take assignment to treatment to have been random and that unobservables play no role in the treatment assignment; comparing two redundancies with the same observable characteristics, one of whom was treated and one of whom was not, is by proposition 1 like comparing those two individuals in a randomized experiment. Under this assumption, the conditional treatment effect, \( \tau_{|T=1,X} \), is estimated by an argument identical to the one used above for ignorable assignment, simply by conditioning on \( X \) and then averaging over \( X|T_i=1 \) to estimate the treatment effect.

One way to estimate this equation would be through matching units on their vector of covariates, \( X_i \). In principle, we could stratify the data into bins, each defined by a particular value of \( X \); within each bin this amounts to conditioning on \( X \). The limitation of this method is that it relies on the availability of sufficiently rich data on controls so that no bin containing a
treated unit is without a control. For example, if all \( n \) variables are dichotomous, the number of possible values for the vector \( X \) will be \( 2^n \). Clearly, as the number of variable increases, the number of cells increases exponentially, increasing the difficulty of finding exact matches for each of the treated redundancies.

According to Rosenbaum and Rubin (1983), the use of propensity score – the probability of receiving treatment conditional on covariates – may reduce the dimensionality of the matching problem. Let \( p(X_i) \) be the probability of a redundancy \( i \) having been assigned to treatment, defined as \( p(X_i) \equiv \Pr(T_i = 1 \mid X_i) = E(T_i \mid X_i) \). Then:

\[
\tau_{T=1} = E_p \left[ \tau \mid T=1, p(X) \right].
\]

Thus the conditional independence result extends to the use of the propensity score, as does by immediate implication our result on the computation of the conditional treatment effect, now \( \tau_{T=1, p(X)} \).

Matching on the propensity score is a weighing scheme, which determines what weights are placed on comparison units when computing the estimated treatment effect.

\[
\hat{\tau}_{T=1} = \frac{1}{|N|} \sum_{i \in N} \left( Y_i - \frac{1}{|J_i|} \sum_{j \in J_i} Y_j \right)
\]

where \( N \) is the treatment group, \( |N| \) the number of redundancies in the treatment group, \( J_i \) is the set of comparison redundancies matched to treatment redundancy \( i \) (see Heckman et al, 1997) and \( |J_i| \) is the number of comparison redundancies in \( J_i \).

Expectations are replaced by sample means, and we condition on \( p(X_i) \) by matching each treatment redundancy \( i \) to a set of comparison redundancies, \( J_i \), with a similar propensity score. This is difficult in practice, so the objective becomes to match treated redundancies to comparison redundancies whose propensity score are sufficiently close to consider the conditioning on \( p(X_i) \) to be approximately valid.

Since we have not had enough information on the future data, we may propose several matching methods, for example, matching with replacement, the nearest-neighbor method or caliper matching. Matching with replacement minimizes the propensity score distance between the matched comparison units and the treatment unit: each treatment unit can be matched to the nearest comparison unit, even if a comparison unit is matched more than once. This is beneficial in terms of bias reduction. Meanwhile the nearest-neighbor method selects the \( m \) comparison units whose propensity scores are closest to the treated unit in question. The caliper matching uses all of the comparison units within a pre-defined propensity score radius (or “caliper”). A benefit of caliper matching is that it uses only as many comparison units as
are available within the calipers, allowing for the use of extra (fewer) units when good matches are (not) available.

**Testing**

It is possible to conduct two types of model specification tests. The first is premised on access to data on pre-training earnings and regressor variables for future training participants (trainees and, when available, controls) and comparison group members. Ignoring contamination bias, a candidate selection correction procedure for training evaluation applied to pre-training data should make the adjusted earning equations of future trainees and comparison group redundancies alike provided that the equation for pre-training earnings is like that for post-training earnings except for the additive training effect. If a candidate selection bias adjustment does not align the pre-training earnings equations for future participants (trainees and controls) and comparison group members and if it is plausible to assume that the source of pre-training differences in earnings between the two types of individuals is the same as for the post-training differences, the candidate correction procedure is rejected (Heckman, 1989).

The second test is based on overidentifying restrictions. It is possible to test the validity of a particular selection adjustment procedure. Heckman and Robb (1985) note that the assumption of normality or symmetry for unobserved characteristics of redundancy which underlies many adjustment procedures can be tested in a single post-training cross section of trainees and comparison group members. Many other selection estimators are based on assumptions which can be subject to test. Rejection of the testable assumptions underlying a procedure would cause rejection of a candidate selection correction method.

**Expected empirical problems**

There may be several empirical problems.

Firstly, the team understands that it is difficult to eliminate selection bias. The carefully-conducted survey and the use of PSM method may help minimize this bias. The survey should be well designed and carefully implemented to get as many accurate responses as possible. In addition various PSM methods may be applied depending on the nature of collected data.

Secondly, attrition may be a problem of the survey. To solve this problem, the team proposes some measures to reduce attrition rate: (i) request for additional contact information; (ii) inform interviewees of future interviews and call for their cooperation; and (iii) track
participants every quarter. However the team believes that this may not be a serious problem. There are some backgrounds for this. Firstly, most of redundancies in these two sectors are not so young, which reduces their employability when migrating. Secondly, most of them got married. Therefore they may choose to seek for jobs at their locality to be close to their family. Even if they migrate, they may keep close contact with their family in terms of sending remittances to them. Secondly, according to an informal talk with a government officer of Tay Ninh province where there are forestation companies, for those who work for forestation companies, they may get land allocation for forestation after the company is restructured as stipulated by law. Therefore they may immediately have new job of cultivating such piece of land and don’t have to migrate. What they may need is training on new cultivation skills, if any.

\textbf{e. Human subjects concerns}

Basically the project has no environmental risks. The research team also takes into account the gender and ethnic issues. Therefore they will make all possible efforts to ensure equal female – male participation. It is also understood that the control group may get little benefit from the experiment. Hence the team suggests provide job search assistance to this group. In addition they may get higher allowance for the interview.

Since this is a big project, the research team will cooperate with a number of agencies and independent researchers/interviewers. The team will have legal agreements with related parties on any components which need external resources. Under such agreements related parties and/or persons should be bound to the responsibility of ensuring confidentiality and no harm for redundancies involved in the research. Besides, the questionnaires will include a statement of confidentiality protection for interviewees.

\textbf{D. Consultation and Dissemination Strategy}

The research team understands that the project result may be essential for policy adjustment to enhance benefits of redundancies. Therefore to ensure the efficiency of the study, the team will make use of all possible opportunities to disseminate information on the study. The consultation and dissemination will be via the following channels:

1- \textit{Project stakeholders}: During project implementation, the research team will work closely with related government agencies, SOEs, training providers, other researchers and parties. The team will hold an inception seminar to introduce the study as well as to get
comments and suggestion on how to organize the survey for suitable policy recommendations. Once the team completes the draft report, at least one regional seminars will be organized. Participants will be related policy makers, academia, redundancies involved in the study and international organizations on poverty reduction. It is hoped that ideas and suggestions will be widely discussed and heard by the Government for policy revision. Also, the team member who is the Vice President of CIEM, a think-tank of the Government of Vietnam, will make use of his position to transfer the resulted message to the Government for policy revision.

2- **International agencies**: The study can be presented to several international agencies such as WB, UNDP, IMF or DFID, and other NGOs in Vietnam.

3- **Domestic and international conferences**: The report can be sent to domestic and international conferences so that the team can present their findings to other researchers. It should be noted that the results from the study will be prepared in the most simple and understandable, non-technical formats to the policy makers and non-technical audiences. However for scientific conferences, the study will be presented in more technical, mathematic and statistical ways for technical discussion and dissemination.

4- **Publications**: The research team will prepare one working paper and at least three domestic journals. The whole report will be presented as the working paper in the Central Institute for Economic Management. The brief findings and conclusion will be published in Economic Management Review (Central Institute for Economic Management) and Economic Forecasting Magazine (Ministry of Planning and Investment). More detailed methodology and results will be published in Journal of Development Economics (National Economics University NEU), or the Journal of Economic Studies (Institute of Economics). The technical part will be published in Journal of Mathematical Application (Mathematical Association of Vietnam). It is hoped that CIEM will fund for the publication of a special issue dedicated to this study.

The team will make great efforts to present the study in a format of PEP working paper and at least two international papers. Full report will be put in a PEP working paper. Brief methodology and findings are expected in journals such as World Bank Research Observer or Journal of Development Economics, or World Development.

5- **Electronic publication**: The findings of the study will be also put in an international website of PEP, and Vietnamese websites of MOLISA, MOF, SCIC and CIEM.
E. The study team

a. Principal investigator

Ms. Lan Anh Vu (Vietnamese, age 31, gender: female).

She got one Master in Economics and another in Public Policy in the United Kingdom under the Chevening scholarship scheme. She is now proceeding for her PhD in Development Economics. She is interested in private sector development, poverty analysis and macroeconomic forecast. She has both research and project management experiences. Before joining CIEM, she worked as Project Officer of two technical assistance projects which had close links with the SOE reform process in Vietnam. From that, she has learnt about practical situation of restructured SOEs and redundancies. She participated in the implementation of a number of surveys, especially the survey on awareness of restructured SOEs and redundancies. Also she gained knowledge of managing development projects. When being a researcher at CIEM, she has participated in a number of research projects. Most of them are about policy research. She was the lead researcher of the study on the impacts of policies on private sector development after 20 years of economic reform – one of the eight key components of the UNDP Project on assessment of 20 years of economic reform in Vietnam. The study included the assessment on the equitization process in Vietnam. In addition, she has also involved in a number of quantitative studies. For example she was a team member of the quantitative study on determinants of SMEs’ growth in Vietnam. Notably she is the team leader of the research on inequality situation between 1997 and 2004 in Vietnam – a research award by the East Asia Development Network.

With such experience Ms. Lan Anh Vu may direct the project with convenience. She can make use of her contacts with enterprises, her management experience and research capacity to coordinate as well as to actually participate in project activities for a smooth project implementation.

b. Other key research staff

Asso. Prof., Dr. Xuan Ba Le (Vietnamese, age 55, gender: male)

He will act as the key advisor and guardian for other team members. He is now the Vice President of the Central Institute for Economic Management (CIEM) - a government think-tank of Vietnam. He got the PhD degree in Economics in Russia and has nearly 25 years of research experience. In addition to national research projects on macroeconomic issues, he has also led a number of studies on poverty reduction, SOE reform and rural development.
Many of them had survey and quantitative analysis components. For example, he involved in the project entitled “Solow growth model with CES (constant elasticity of substitution) production function and its application for Vietnam in 2004”. In 2006 he acted as team leader of the study on “determinants on rural labour restructure transference in Vietnam”. The analysis is based on the dataset of Vietnam Household Living Standard Surveys (VLSS) 1992/1993, 1997/1998, 2001/2002 and 2004 and uses the switching regression model to estimate the factors impact on the labour transference. Most recently he has worked with international experts to conduct surveys and analysis on factors affecting the business growth of small and medium scale enterprises as well as the living environment of rural households which explained the way of getting out of poverty for households in Vietnam.

With a high position at CIEM, Dr. Le is able to mobilize other qualified CIEM researchers to participate in the project to ensure high deliverables. Specifically the Department for SOE policy research can be mobilized for the survey component. The Centre for Training and Consultancy can involve in training provider selection and training monitoring. The Department of Macroeconomic Policy Research can support for the modeling and testing component. Besides his personal contacts with other government agencies can be of great advantage. This may help the team choose and work efficiently with related government agencies and parties. One most crucial advantage is that he may use his position to transfer the policy message resulted from the study to the Prime Minister for quick policy adjustment.

**Ms. Minh Thao Ta** (Vietnamese, age 31, gender: female).

She got a Master in Economics in Japan with major in Public Policy. Although Ms. Ta is a young researcher, she has nearly eight years of research experience. Her research interests are private sector development, poverty reduction and econometrics. She has participated in a number of development researches. Recently she also conducted an analysis entitled “Determinants of firm growth in the North and the South” in 2006. The paper uses the model of optimal firm size as a theoretical framework to empirically analyze the factors affecting the growth of private firm in Vietnam and compare the different factors between the North and the South. She and Ms. Vu are conducting another study on quantitative assessment of inequality in Vietnam using the Living Standard surveys which is awarded by the East Asian
Development Network. As a team member, Ms. Ta can make use of her experiences on survey implementation and econometrics skills.

**Mr. Huy The Nguyen** Vietnamese, age: 31, gender: male).

He had a Bachelor in Economics and Public Administration. He is pursuing the Master degree on Applied Economics in Public Policy with the Fulbright scholarship. Before taking this course, Mr. Nguyen had extensive working experience with enterprises via his work at an insurance company. Since almost all projects he involved were very big, most of his clients were big SOEs or restructured enterprises. Before that, he had direct working experience in an SOE, which provided him with practical understanding of an SOE context. With such working experience, he may be a good coordinator and contactor during the experiment process. In addition his research capacity has been recognized by his lecturers at the Fulbright School. For example, he conducted a quantitative study on determinants to export and import of developing countries, which was highly acknowledged by his lecturers. He also has several studies on the financial market of Vietnam. His knowledge of econometrics, and randomization in particular, will be of great use in this project.

**Capacity building**

The participation in this project will provide huge capacity building for both the study team and related agencies/organizations.

For study team, they will gain capacity of randomization design and implementation, survey skills, model and testing and project management skills, etc. Specifically:

**Ms. Lan Anh Vu**

- Enhance research capacity, particularly the non-randomization technique
- Enhance survey skills
- Deepen knowledge of the SOE reform process and its issues
- Deepen knowledge of statistics, impact evaluation theory
- Broaden contacts with government agencies and redundancies
- Enhance team work relationship
- Improve management skills
- Improve research paper writing skills

**Dr. Xuan Ba Le**
• Enhance contact with government agencies and international organizations
• Encourage application of randomized evaluation approach on future impact evaluation studies in CIEM
• Support for his policy advice to the Government by using quantitative research results on policy impact valuation
• Enrich research and management experiences

Ms. Minh Thao Ta
• Strengthen research methodology
• Enhance survey skills (questionnaire design, in-depth interview, data analysis)
• Deepen knowledge of impact evaluation theory
• Improve research paper writing skills
• Improve team work experiences

Mr. Huy The Nguyen
• Enhance research capacity, especially non-randomization techniques
• Enhance survey skills (questionnaire design, in-depth interview, data analysis)
• Enhance contacts with redundancies
• Enhance project management skills
• Improve team work experiences
• Learn about academic paper writing

For related agencies/organization, participation in the project will enrich their knowledge of a new research method in Vietnam (randomization) and of the situation of redundancies in Vietnam. Specifically:

CIEM departments (SOE research, Investment research and Macroeconomic Policy Research)
• Enhance research capacity, especially on non-randomization techniques
• Enrich experiences on survey design and implementation
• Enrich experience on organizing vocational training
• Enrich knowledge of redundancies in Vietnam

State Capital Investment Corporation (Ministry of Finance)
• Learn about non-randomization techniques
• Enrich knowledge of redundancies in Vietnam to improve their work on redundancy allowance disbursement

Department of Vocational Training (Ministry of Labor, War Invalids and Social Affairs)

• Learn about non-randomization techniques
• Enrich knowledge of redundancies in Vietnam to improve their policy advice on vocational training supply

c. Collaborators

Understanding that this is a big project, the study team will cooperate with a number of organizations/individuals to ensure efficient project implementation. Specifically the team will collaborate with the following organizations:

• Dr. Tri Thanh Vo

Dr. Vo is the Director of the Department of Macroeconomic Policy Research of the CIEM. He got the PhD degree at the Australian National University. He worked as a research assistant to the World Bank project “LDC Trade and DC Wage Dispersion” between 1997 and 2001. He is also a member of the Board of Trustees of the Vietnam – Netherlands Master’s Program in Development Economics – a reputable post-graduate program in Vietnam. He is also the Country Coordinator of the East Asian Development Network. He has conducted a series of studies on poverty, trade and financial markets. Most of them use econometrics as tools of analysis. He has won a number of awards by international institutions like the UN, World Bank, ADB, etc, for his studies on development economics. In this project, it is proposed that Dr. Vo will act as supervisor and tutor for young researchers, especially for the modeling and testing section.

• CIEM research departments/researchers
  o Department for SOE policy research: survey design and implementation
  o Department of Investment research: understand SOE redundancy to propose the revision of SOE reform regulations and Enterprise Law to improve the plight of redundancies
  o Department of Macroeconomic Policy Research: modeling and testing

• State Capital Investment Corporation (Ministry of Finance):
  o Suggest on selection of SOEs
- Provide information on restructured SOEs and redundancies
- Support for contacts with SOEs

- **Provincial Statistic Office**
  - Support for survey implementation at locality
  - Support for local contacts

- **Training providers**
  - Provide information on the labor market, job vacancies

Since each collaborator makes different contribution to the project, there will be no significant disputes. The team will make all necessary efforts to ensure smooth cooperation among collaborators.
### d. Task allocation

<table>
<thead>
<tr>
<th>No</th>
<th>Task</th>
<th>Persons in charge</th>
<th>Collaborators</th>
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<td>Questionnaire design</td>
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</tr>
<tr>
<td></td>
<td>Pilot survey</td>
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<td>Questionnaire refinement</td>
<td>Minh Thao Ta</td>
<td>Other team members</td>
</tr>
<tr>
<td></td>
<td>Inception seminar</td>
<td>Lan Anh Vu, Huy The Nguyen</td>
<td>Other team members</td>
</tr>
<tr>
<td></td>
<td>Refine survey design</td>
<td>Minh Thao Ta</td>
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<tr>
<td>2</td>
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<td>Minh Thao Ta</td>
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<td>Field study</td>
<td>Huy The Nguyen</td>
<td>Survey teams</td>
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<tr>
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<td>Follow-up survey for respondents</td>
<td>Huy The Nguyen</td>
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<td>with training participation</td>
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<td>Tri Thanh Vo, Other team members</td>
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<td>Organize two seminars</td>
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<td>Incorporate feedbacks into report</td>
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<td>Lan Anh Vu, Minh Thao Ta, Tri Thanh Vo</td>
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<tr>
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<td>Submit final report</td>
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<tr>
<td>5</td>
<td><strong>Working paper</strong></td>
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</table>
e. List of past, current, or pending projects in related areas involving team members

   Funding institution: East Asian Development Network
   Team member involved: Lan Anh Vu (Team leader), Minh Thao Ta
   Time: 2007-2008

2. Project title: Forecasting rural labour structure shift and designing employment creation measures in the process of industrialisation, modernisation and urbanisation in Vietnam
   Funding institution: National Research Project
   Team member involved: Xuan Ba Le (team leader), Minh Thao Ta, Lan Anh Vu
   Time: 2007 - 2009

3. Project title: Determinants on rural labour restructure transference in Vietnam
   Funding institution: Central Institute for Economic Management/NIAS
   Team member involved: Xuan Ba Le (team leader), Minh Thao Ta, Lan Anh Vu
   Time: 2005 - 2006

4. Project title: Labor market development in Vietnam
   Funding institution: National research project
   Team member involved: Xuan Ba Le (team leader), Minh Thao Ta
   Time: 1998 - 2003

5. Project title: Resource Mobilization, Resource Allocation and Job Creation in Quang Nam Province
   Funding institution: CIEM/NIAS
Team member involved: Xuan Ba Le  
Time: 2003

6. Project title: Survey on rural households in selected provinces  
Funding institution: Central Institute for Economic Management/DANIDA  
Team member involved: Xuan Ba Le (team leader), Minh Thao Ta, Lan Anh Vu  
Time: 2007

7. Project title: Household income determinations in Vietnam  
Funding institution: CIEM/NIAS  
Team member involved: Tri Thanh Vo, Minh Thao Ta  
Time: 2002

8. Project title: Survey on awareness of restructured SOEs and their employees on the SOE reform process in Vietnam  
Funding institution: DANIDA  
Team member involved: Lan Anh Vu  
Time: 2002

**F. Timeline**

It is proposed that the study will last for one year with the following key milestones:

- September 2010: survey design
- October 2010 – December 2010: field study
- January 2011 – April 2011: follow-up survey (if any), data analysis
- April 2011 – May 2011: draft report
- June 2011 – July 2011: final report
- September 2011: working paper
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G. Budget

It is expected that the budget for this study is financed by PIERI. The tentative budget is CAN$50,000, specifically:

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REFERENCES


