

PAGE

policy analysis on growth and employment



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Priority policy research issue for the first PAGE II (2016) call for proposals

Productive employment in rural farm and non-farm sectors - labour productivity and factor market imperfections

In what follows, we introduce the priority thematic issue of **Productive employment in rural farm and non-farm sectors – labour productivity and factor market imperfections**, identified for the first round of PEP's call for research proposals for its PAGE II program. In order to ensure that the outputs (findings and recommendations) yielded by PAGE II-supported projects will eventually serve to address the most salient issues and needs in terms of policymaking in developing countries, a group of international experts in the field of development economics have been convened to identify the priority topics – under the broad theme of inclusive growth and employment – for this call for proposals.

To assist applicants in designing their research proposal, PEP resource persons have prepared a complete review of existing scientific literature on each of the themes listed below. Follow this link to access the [recommended reading](#) lists online.

IMPORTANT: For all policy research issues identified for this round of funding, applicants are encouraged to explore impacts on inequality across gender, socio-demographic groups and age groups. Consideration of gender aspects should be included for all issues.

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Motivation and situation analysis

Agriculture remains the key sector in driving economic growth and poverty reduction in many developing countries. Agriculture together with the allied rural non-farm sectors provides livelihoods for about 3.4 billion people living in rural areas around the world (World Bank, 2013). Studies also show that participation in non-farm employment enabled the rural smallholders to invest in agriculture and adopt productivity enhancing inputs and technologies to improve farm productivity (Reardon et al., 2000; Ruben and Van den Berg, 2001; Bezu and Holden, 2008). This is because many rural areas suffer from credit and insurance market constraints so that employment in non-farm activities provides essential savings for agricultural investment; signal credit worthiness; and serve as insurance against agricultural shocks (Bezu et al., 2012).

Inclusive growth and poverty reduction in many developing regions will therefore require continued productivity change in agriculture and in the rural non-farm sector so that these sectors will continue to attract skilled labour and provide employment for youth, women and other workers.

Millions of youth graduating from school and universities are not keenly interested in looking for employment in the rural areas because of low returns and underdeveloped employment opportunities, reflecting lack of complementary investments in the agricultural and rural non-farm sectors to attract and retain young talents

Research issues

Raising labour productivity and correcting labour market imperfections is crucial to structural transformation of the rural economy in developing countries. The key research questions in this thematic area will therefore focus on the performance of rural markets, with a special attention on labour productivity in agriculture and non-farm sectors, and how policies and institutional arrangements may be improved to increase labour productivity and increase employment opportunities in the rural sector in developing countries, especially for women, youth and others. In addition, this thematic area will analyse the contribution of employment in agricultural and rural non-farm sectors to decelerate migration of labour from rural to urban areas.

a. Growth in labour productivity and inter-sectoral shifts in labour demand

Growth in labour productivity, overall and within agriculture, has been a strong predictor of poverty reduction because of the important linkages between wages, household self-employment, and the real incomes of the poor. Agricultural labour productivity growth is particularly important because of these direct effects on the many workers who participate in the agricultural sector, and also because it causes growth in other sectors (De Janvry and Sadoulet, 2010).

- What are the key trends and determinants or drivers of labour productivity change in rural areas?
- How does the agricultural sector perform in terms of labour productivity, wages and income growth in relation to the rural non-farm sector and other sectors in the economy?
- How does the labour productivity differential affect patterns of employment, labour allocation and overall competitiveness of the rural sector for employment and job creation?
- How does labour productivity and income growth vary between men and women in rural areas and what factors cause these gaps?

b. Policy and market imperfections and enterprise development

The overall contribution of the agricultural and rural sector for employment generation is constrained by policy and market imperfections that perpetuate low labour productivity and sustain disparities in terms of employment opportunities between rural and non-rural sectors.

- How important are the imperfections in labour and other factor markets in rural areas and how do they shape patterns of investment and productivity growth in agriculture and the allied non-farm sectors?
- How important are public and social policies related to productive assets (e.g. land) and social services (including education, health, sanitation, etc.) in closing labour productivity and income gaps across sectors and among men and women?
- How do market and policy imperfections influence incentives for private sector investment and enterprise development for inclusive growth, job creation and employment in rural areas?

c. Migration and employment in the rural sector

Another important area of research with significant knowledge gaps is better understanding of how the agricultural and rural non-farm sectors will contribute to attracting and retaining skilled labour and slowing down exodus of labour from agriculture and the rural sectors to urban areas where employment opportunities are also limited.

- How does the overall social and economic inequality shape the patterns of employment and migration between the rural and urban sectors and what factors will bridge this rural-urban divide or even reverse the flow of skilled labour from rural to urban areas?
- Will income and labour productivity growth in the agricultural and rural sectors slow down the exit and outmigration of labour to the cities and to what extent would this contribute to reducing rural unemployment?
- How does labour productivity change and income growth in the rural sector shape the perspectives of youth and other prospective workers in terms of staying in and investing in rural areas?
- What kind of policies and interventions would be needed to regulate the out-migration of labour from the rural sector and align this carefully with changing labour demand in the industrial and services sectors?

Methodological approaches

1. Microeconomic policy approaches

With micro data and micro-econometric methodologies, the lack or failure of labour (or other inputs) market can be tested. Depending on the degree of the market imperfections, the literature proposes different methodological strategies. For example, Tiberti and Tiberti (2012) estimate a non-separable agricultural household model with cross-section data from Tanzania and find that labour market imperfections limit the full benefits of investments in fixed inputs and infrastructure leading to sub-optimal effects. Dillon and Barrett (2014) find failing or missing markets in rural areas in five sub-Saharan African countries with the recent available datasets coming from the ISA-World Bank project.

During current PAGE initiative, microeconomic policy research group has supported different projects covering some of the topics proposed in this section. These works use quasi-experimental techniques on typical cross-sectional or panel household budget surveys, sometimes combined with primary or census data, to estimate the average and

heterogeneous effect of different policies, shocks or individual strategies. The approaches proposed range from, e.g., propensity score matching (PSM) to endogenous switching regression (ESR), regression discontinuity design (RDD), difference-in-difference (DD) and instrumental variables (IVs).

In a study about the effect of land tenure security reforms on off-farm employment in rural China with a particular focus on women, Chang et al. (PAGE ii) find that the Rural Land Contracting Law in 2002 has a positive impact on wage employment, both for men and for women. Similarly, this policy reform increases total incomes. Using the data from three waves (1995, 2002 and 2008) of the Chinese Household Income Project, the authors use a difference-in-differences strategy as identification strategy of the effect of land tenure security. Dedehouanou et al. (PAGE ii) study the link between rural non-farm and farm sectors, and whether self-employment opportunities in rural Niger have a positive impact on the agricultural sector and food security. Using different variants of ESR for binary and continuous outcomes on the Enquête Nationale sur le Conditions de Vie de Ménages et l'Agriculture 2011 (ECVM/A-2011), the authors find that rural farm households which also engage in rural non-farm self-employment activities show lower credit constraints (i.e. they invest more in agricultural inputs) and show less risk of being food insecure. Hoang et al. (PAGE ii) study the effect of the liberalisation of chemical fertilisers on, among others, the allocation between rural farm and non-farm employment on the panel Vietnam Living Standard Surveys (VLSS) from Vietnam 1993 and 1998. Using an extended Heckman selection model with instrumental variables, the authors find that the lower price of fertilisers reduces the employment of rural households in nonfarm activities while it increases the participation in the farm sector, especially for smallholder farmers. Using propensity score matching with the 2009 Cambodia Socio-Economic Survey of households and Census data, Roth et al. (PAGE i) find that the internal (from rural to urban/metropolitan areas) migration generates, among others, a "dependency effect", i.e. members living in households with migrants tend to reduce their participation to work activities.

Regarding the productivity gaps by gender in the agricultural sector, using panel data from Uganda and the Oaxaca-Blinder (OB) decomposition methodology, Ali et al. (2015) estimate a gender gap of 17.5 percent and find that its driving components are the greater child care responsibilities and the more difficult access to transportation experienced by women. Using the same methodology, similar studies have been conducted in Niger and Nigeria. Using data from Ethiopia, a research by Aguilar et al. (2014) also proposes the Recentered Influence Functions (RIF) regression method, which allows for estimating the heterogeneous differences in productivity along the distribution (other than the average as in the OB method).

The microeconomic evaluation tools presented above (and others) together with appropriate data can be help to evaluate and provide policy recommendations about:

- Changes over time of the labour productivity in the farm sector, and how sectoral investments and overall economic growth affect it, also in comparison with the non-farm sector.
- The imperfection in labour and other factor markets in rural areas, and how this affects rural sector development and the effectiveness of policy interventions in the agricultural sectors.
- Patterns of employment and migration between the rural and urban sectors, and which factors (e.g. skills, inequalities, expected revenues) or policy interventions (e.g. investment in infrastructure) affect such internal and sectoral flows, especially for the youth.

The table below shows a selection of recent PEP-supported projects using microeconomic approaches focusing on some of the research issues proposed in this section.

Research title	Authors and PAGE round
Land tenure policy and women's off-farm employment in rural China	Chang et al. (PAGE ii)
Spillovers from off-farm self-employment opportunities in rural Niger	Dedehouanou et al. (PAGE ii)
The effect of price of intermediate imported product on nonfarm participation of households in rural Vietnam	Hoang et al. (PAGE ii)
Estimating economic effects of remittances on the left-behind in Cambodia	Roth et al. (PAGE i)

2. MPIA approaches

CGE modelling is a compelling tool for examining labour productivity provided that adequate data are available to construct an adequate Social Accounting Matrix. Various data sources such as the National Accounts and the Balance of Payments could be completed by additional information derived from Employment Surveys, Household Surveys and various sectoral surveys. Once a balanced Social Accounting Matrix has been constructed, an analysis of the economic structure is conducted to take into account the capital and labour intensity in different sectors. The focus on the labour market is fundamental. Indeed, skilled workers may be employed in sectors where unskilled workers are scarce and vice-versa. The analysis needs to be conducted in such a way that the wage disparities between level of expertise and qualification in different sectors are well captured. The trade-off between higher wage and greater skill of labours may have a larger implication on job creation and welfare for the economy. On the other hand, it is important to take into account a sectoral decomposition of the labour market and the linkages between formal and informal sectors. Most researchers often decompose the agricultural sector into different subcategories such as modern and traditional farming, big farms and small farms, irrigated and non-irrigated farming, formal and informal agricultural sector, etc.

In summary the agricultural sectors need to be divided in at least in three categories:

- Small-scale farms that are essentially family farms for subsistence consumption and rely on household labour
- Medium-scale farms that hire few external labour and partially sell their produce to the market
- Large-scale farm that employs large labour and target the production for commercialisation

For each of this category, the impact of public interventions can be analysed using CGE modelling. The government, through various policies, could affect the composition of labour market. For example, the government may use fiscal measure to reduce the cost to operate as a formal firm or introduce a tax on products coming from the production of informal sectors in order to shift factors of production (especially labour) from informal sectors to formal sectors and thus reduce the size of the informal sector (Medard et al., PAGE ii). On the other hand, in order to support formal economic sectors, the government may reduce tax rate on goods and services produced by formal sectors and labour migration could be observed in the process. Alternatively, the government may decide to invest in human capital and education which will lead to an improvement in worker's skills. This policy was suggested for Cambodia (Heng et al., PAGE ii). The government could also organise training

programmes for low-skilled workers in order to compensate (offset) the negative impact of an increase of indirect taxes on the agricultural sector. Alkassoum et al. (PAGE ii) found that a subsidy to agriculture leads to an increase in agricultural production and a decrease in food insecurity in Niger, while a subsidy for electricity for the industrial sectors will create more jobs.

The unemployment among different type of workers should also to be taken into account. Alkassoum et al. (PAGE ii) developed a model of the Nigerian economy with the unemployment rate and the number of people unemployed. The model observed the unemployed workers in the formal sector will try to find a job on the informal sector punching the informal wage rate down. On the other hand, minimum wage generates frictions on the labour market that could explain the unemployment level and modelling of different minimum wages can help answer the question of how much the minimum wage should be.

Another related issue is the effects of international trade and FDI on labour market. Depending on which economic sectors the FDI is allocated to, it could lead to an improvement of the total factor productivity and an increase of the capital stock (Sawadogo et al., PAGE ii). Furthermore, particularly for countries with abundant natural resources, it is important to take into account the resource curse and its impact on labour market. Indeed, natural resources could lead to an appreciation of the exchange rate which decreases exports and increases imports. The increased imports will reduce the demand for local goods and will have a negative impact on economic growth. The fall of production will eventually lead to a decrease in labour demand by sectors. Therefore the government should ensure fair allocation of income from natural resources in order to avoid the consequences of what is known as the Dutch Disease (Alkassoum et al., PAGE ii).

- What policies should the government implement in order to support the transformation of informal to formal sectors, particularly in the agricultural sector?
- How to take into account the wage disparities between formal labour and informal labour and between the different labour skills?
- How should the minimum wage be set to provide incentives for job searching and job creation?
- What are the effects education on skilled labour and wages?
- How do the social welfare programmes (e.g. unemployment insurance) affect the labour market and the production on the different economic sectors?
- What are the factors that explain labour migration between sectors?
- How can the government support the production of small-scale family farms? Which policies the government should implement in order to help farmers to raise physical capital and farm income?

The table below shows a selection of recent PEP-supported projects using MPIA approaches focusing on some of the research issues proposed in this section.

Research title	Authors and PAGE round
Assessing the Impact of China's Economic and Trade Expansion on Poverty in Burkina Faso	Sawadogo et al. (PAGE ii)
Assessing the impacts of trade policies on growth, employment and poverty in Cambodia	Heng et al. (PAGE ii)

Assessing the impact of oil and mining sectors' boom on the labor market and economic development in Niger	Alkassoum et al. (PAGE i)
The effects of minimum wages on the labour market and income distribution in Kenya; a CGE analysis	Mwangi et al. (PAGE iii)
The Impact of Wage Policy on poverty, informality and growth	Morales et al. (PAGE iii)
Impact of Increased Public Education Spending on Growth and Poverty in Uganda	Robichaud et al. (PAGE iii)
