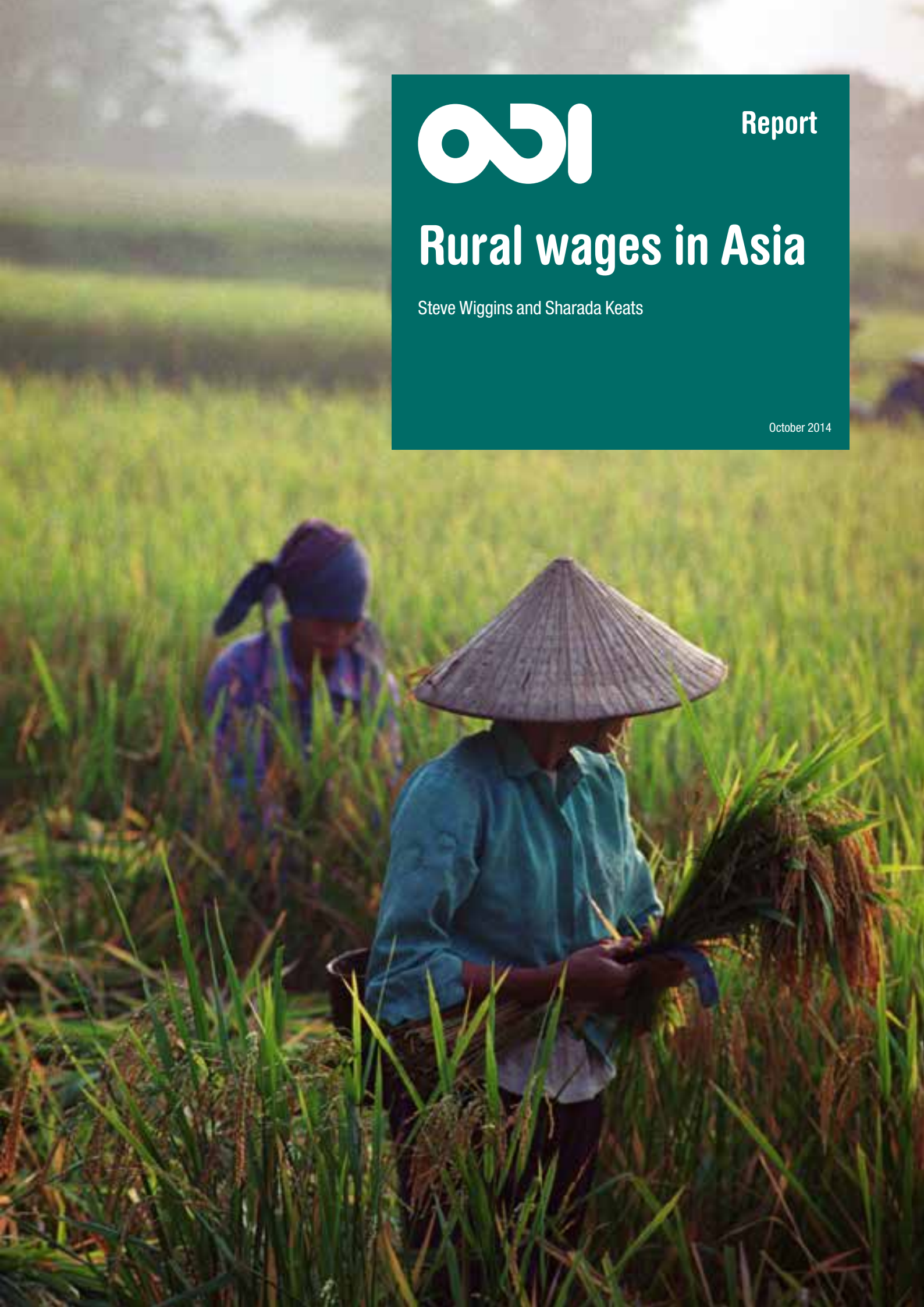


Report

Rural wages in Asia

Steve Wiggins and Sharada Keats

October 2014

Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ

Tel. +44 (0) 20 7922 0300
Fax. +44 (0) 20 7922 0399
E-mail: info@odi.org.uk

www.odi.org
www.odi.org/facebook
www.odi.org/twitter

Readers are encouraged to reproduce material from ODI Reports for their own publications, as long as they are not being sold commercially. As copyright holder, ODI requests due acknowledgement and a copy of the publication. For online use, we ask readers to link to the original resource on the ODI website. The views presented in this paper are those of the author(s) and do not necessarily represent the views of ODI.

© Overseas Development Institute 2014. This work is licensed under a Creative Commons Attribution-NonCommercial Licence (CC BY-NC 3.0).

ISSN: 2052-7209

Cover photo: © World Bank Photo Collection: Rice fields in Mai Chau, Vietnam

Report

Rural wages in Asia

Steve Wiggins and Sharada Keats

Key messages

- Rural wages are rising across much of Asia, and in some cases have accelerated since the mid 2000s.
- The two main drivers are a slow-down in the growth of the rural labour force, probably mainly from lower fertility rates, and the growth of manufacturing that attracts workers from rural areas.
- Most people on very low incomes in Asia work in agriculture: rising wages promise to lift most of them out of extreme poverty.
- Higher rural wages are driving up the cost of food production, thereby creating opportunities for other countries to export to Asia.
- They also contribute to higher wages in manufacturing. As costs rise in China, for example, it is likely that some plants will relocate to low-income Asia and to Africa.

Contents

Figures

Tables

Boxes

Abbreviations

BBS	Bangladesh Bureau of Statistics
CCAP	Centre for Chinese Agricultural Policy
CPI	Consumer Price Index
FAOSTAT	Food and Agriculture Organization Statistical Service
GDP	Gross Domestic Product
ILO	International Labour Organization
IRRI	International Rice Research Institute
ISIC	International Standard Industrial Classification
LSMS	Living Standards Measurement Study
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act [India]
PPP	Purchasing Power Parity
RMG	Ready-Made Garment
UN	United Nations
UNDESA	UN Department of Economic and Social Affairs
UNDP	UN Development Programme

Acknowledgements

We are grateful for helpful comments provided by peer reviewers Professor Rick Barichello and Andrew Norton. Our thanks also to Dr Futoshi Yamauchi for sharing data on Indonesian wages.

This report has been produced by ODI as part of the project 'Shockwatch: Managing Risk and Building Resilience in an Uncertain World', supported by the UK Department for International Development (DFID).

Executive summary

Rural wages in developing countries matter. Rural wages not only directly affect the welfare of many of the (very) poor, but also affect the welfare of others through their impact on costs of food production and hence food prices. Since manufacturing in low-income countries often recruits labour from the countryside, rural wages set the minimum level of factory wages necessary to attract labour, and hence costs of production and thereby the growth of manufacturing.

Reports indicate that rural wages in parts of Asia, in countries such as Bangladesh, China and India, have been rising since the mid-2000s, and probably at a faster rate than before: See Figure A. Hence this study: to check how rural wages are changing for other countries in (East, South and Southeast) Asia; to look at potential causes; and to consider the implications. Specifically, the following questions are posed:

- **What trends can be seen** in rural wages in Asia during the 2000s? How much is there a common pattern across the region?
- **What factors are driving the increases seen?** Above all, do they stem from increased agricultural production and productivity, from changing demography, or from urbanisation and industrialisation? To what extent do they reflect public policy such as minimum wages and public employment schemes? What may be expected in terms of trends in rural wages over the next five to ten years?
- If rural wages are rising, then **what are the implications** for rural development and poverty, for food prices and food security and for economic growth, both in Asia and in other parts of the developing world?

Rural wages can be seen as influenced primarily by supply and demand in labour markets – albeit with imperfections – or as one side of a dual economy, where labour in a traditional (largely rural) economy works at low productivity, separated from the labour markets of a more productive modern sector. Dualism may have contributed to Asian industrialisation by providing a pool of very cheap labour from the countryside, but increasingly probably does not apply in the 2000s.

Recent literature, both descriptive and analytical, reports similar findings in several countries of Asia:

- In Bangladesh, China, India and Indonesia, rural wages are rising, apparently faster in the second half of the 2000s than before.
- Growth in manufacturing and jobs off the farm, especially construction in cities, is drawing labour off the fields.
- For China, at least, the pull of the city is coinciding with reductions in the labour force as the low fertility of the past 30 years comes into play.
- It is less clear to what extent the growth of the rural non-farm economy or increases in agricultural productivity have led to increased demand for labour in rural areas.
- Although public employment programmes may contribute to higher rural wages, they may not drive them as strongly as economic growth. That said, the Indian Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme may be disproportionately valuable to female workers and to those in economically lagging regions.

Data on rural wages, agricultural labour productivity, growth of manufacturing and rural working population were collected from secondary sources for the 13 most populous countries of East, South and Southeast Asia, for the 2000s. Rural wage series were incomplete in several cases, so only for six countries was it possible to look at changes in wages in the early and late 2000s.

Results

Rural wages rose in the 2000s in almost all cases observed. In several countries, including China and India, the rise accelerated from the mid-2000s. For example, in Bangladesh, the average (male) rural wage rose in real terms by 45% between 2005 and 2010, in India by 35% between 2005 and 2012 and in China by 92% between 2003 and 2007. Similar trends can be seen for other countries where data are available, such as Indonesia and Vietnam.

Despite growth, levels of pay still remained low in the early 2010s, with few countries seeing more than $5 a day paid. Rural wages for women were in most cases between a quarter and one-third less than those paid to men, although in most countries the gap has narrowed.

For potential drivers of rural wages, the following patterns were seen:

- **Agricultural labour productivity** rose in all cases except Pakistan in the 2000s, in most countries faster in the latter half of the decade, with seven countries seeing average growth of 2.5% a year or more.
- **Manufacturing output** grew rapidly across most of the region in the 2000s. Growth of manufacturing accelerated between 1997-2004 and 2005-2012 for China, India, Indonesia, Bangladesh, the Philippines and Sri Lanka. In five cases, growth slowed, although for the Republic of Korea and Vietnam rates remained high.
- In the mid-1990s, **rural working populations** rose in all cases other than the Republic of Korea. By 2012, numbers were falling in China, Malaysia, Thailand and Sri Lanka – with Indonesia rising slightly after several years of falls. In these cases, a turning point has been passed. Another group has seen rural working

population rising throughout the period: Burma/Myanmar, Philippines, Vietnam and South Asia.

What explains changes in rural wages? A cross-country regression suggests rural wages rise as rural working populations decline, and as manufacturing output grows. Changes in agricultural labour productivity may be associated with higher wages, but the estimate proved insignificant and low in the presence of these two main drivers. A small but significant time shifter suggests wages grew faster in the second half of the 2000s, independently of change in other variables.

Demography plays a significant role, more so than might have been expected. Indeed, the largest differences between countries arise in the rural working population, with a sharp distinction between those countries where the rural workforce is now shrinking and those where it continues to increase. Changes in rural working population may be the single most powerful driver, but, since migration is incorporated within the variable, it is not a purely exogenous driver. As manufacturing grows, it is expected that some factory workers will be recruited from the countryside, so the migration component is linked to manufacturing.

Implications

Will rural wages in Asia continue to increase in the future? They will if the two main drivers continue along recent trends into the future. Falling fertility rates since the 1970s across Asia more or less lock in reduced rural populations for the future, and it is hard to imagine that manufacturing will cease to grow. Hence, it seems rural wages can be expected to rise in the future.

This could have profound implications for poverty, agriculture and food prices and manufacturing.

Rising rural wages will put a floor to low rural incomes – at least for those able to work – and, indeed, probably to incomes throughout the economy, since rural wages have tended to mark the lowest returns to labour on offer. Hence, rising rural wages should greatly reduce poverty for most households that have working members. That said, rural wages in many countries are still low and need to rise – perhaps to double in some cases – before households that depend on them can escape poverty.

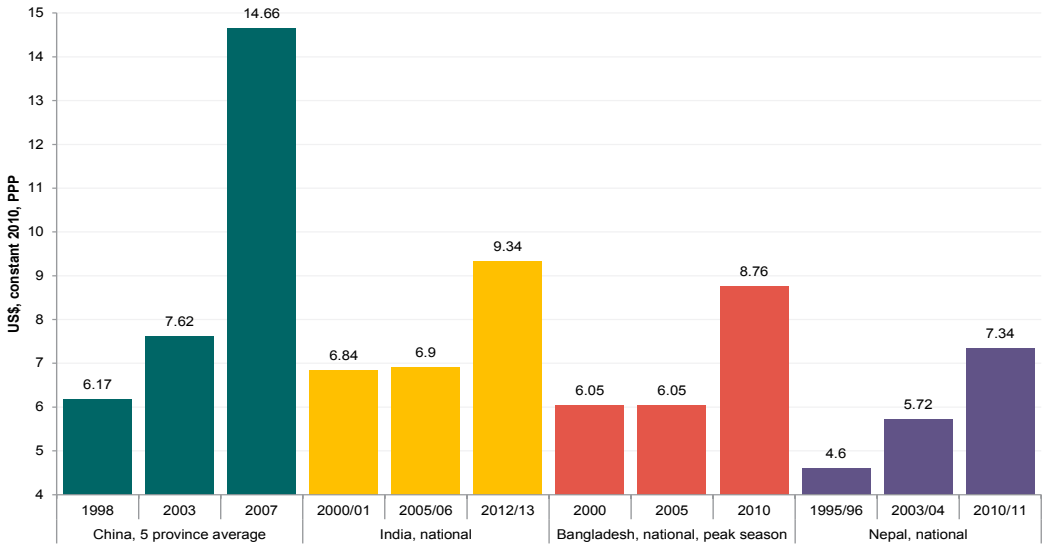
Rising rural wages will push up costs of production in agriculture – already increased by the effect of higher oil prices seen since 2007 – and spur on mechanisation for those tasks where machinery is cheaper than the increased cost of manual operations. That may lead to larger farm sizes as well. Asian food prices will rise, limited to some extent by the possible lower cost of imports from the world market – moderated by the willingness of governments to allow imports of cheap food that might threaten farmers' incomes. Rising food prices threaten access of those on low incomes to food, but, given that even those on low incomes do not spend all their incomes on food, the benefit of higher wages should outweigh the hardship of higher food costs.

Perhaps the **most intriguing implication is for manufacturing**. As rural wages rise, so manufacturing wages will have to increase to recruit new workers. This effect is already being seen strongly in China, where both phenomena are linked to a national workforce that is now shrinking every year. Manufacturers have two options as their costs rise: to mechanise and thereby economise on labour; or to relocate to regions and countries with lower labour costs. Given the scale of its manufacturing, China's decisions will be critical. If the most frequent answer is relocation, then it is likely that plants in coastal China will not only move inland to less prosperous areas with lower wages, but also relocate outside of China. Neighbouring countries in Asia with low wages may be the first to benefit from this, with Bangladesh, Burma/Myanmar, Cambodia and Vietnam clear candidates.

There is, however, a further prospect: that of companies **moving to Africa** in search of lower wages. The World Bank reports Ethiopian factory wages for unskilled labour as being one-quarter those of Chinese wages. Logistics costs are higher, but overall costs are lower. Outside Addis Ababa, the first pioneer wave of relocated Chinese plants can be seen. Now these have broken the ice, how many more will follow? Lin (2014, in Wonacott, 2014) speculated that 85 million factory jobs could leave China in the coming years. If half of those came to Africa, it would transform a continent where there is a surge in youth entering the labour market. Of course, relocation to Africa will only happen if roads, power supplies and ports are adequate and if there is political stability.

Africa's economic underperformance has since the 1970s been far greater in manufacturing than in farming. If the right conditions can be created, renewed growth of manufacturing in Africa led by Asian industrialists promises prosperous urbanisation with vibrant markets for those farmers staying on the land. That would be welcome news all round, including for agriculture.

Figure A: Changes in real daily wages for agricultural labour (US$ constant 2010 PPP) in four Asian countries



1. Introduction: aims of this study

1.1 Motivation for this study

Rural wages matter in developing countries …

Rural wages in the developing world matter: many of the poorest people depend on them to some degree. It is still the case that the majority of the world's poor — perhaps as many as 75%, and especially those with incomes below extreme-poverty levels of $1.25 a day – live in rural areas. For example, in India in 2009/10, 39% of the rural workforce depended on casual labouring – up from 36% in 1993/94 (Alha and Yonzon, 2011). This may understate the numbers that depend on casual work: there are also those who are self-employed, but in occupations such as barbering or collecting firewood, where the fee paid is tantamount to a wage. Levels of rural (unskilled) wages thus heavily affect poverty in rural areas.

Moreover, rural wage levels affect the costs of agricultural production – above all those of growing food – and therefore have an impact on food prices. Not only do food prices matter for the welfare of those on low incomes, but also food prices affect the wages offered in industry and services. Simply to ensure workers are fed well enough to work, most factory owners will be reluctant to pay wages below the level at which staff can afford to eat[1]. However, the scope both to substitute machine operations for labour on fields and to import food at lower cost than using domestic supplies moderates the influence of rural wages on food prices.

Lastly, for low-income countries some of the workers for manufacturing and services will come from the rural labour force. Hence rural wages mark the minimum wages that have to be paid in these sectors. Hence rural wages influence costs of manufacturing and with this the prospects for growth of that sector.

… and in Asia they are rising

Reports indicate that rural wages in parts of Asia, in countries such as Bangladesh, China and India, have been rising since the mid-2000s, and probably at a faster rate than before.

If this represents a trend, rather than an exceptional short-lived increase, and especially if the same were to apply to other countries of the region, the implications for development in Asia and even beyond Asia would be little short of momentous. Hence, this study aims to review change in rural wages in Asia during the 2000s, investigate the causes of changes and consider the implications.

The study here is restricted to Asia, since economic growth has been strong in most countries there over the past four or more decades, and it is the continent where the transition from agrarian to industrial societies is most evident. Within Asia, the particular focus is on East, South and Southeast Asia: experiences in Central and West Asia have less in common with those of the rest of continent.

1.2 Questions posed

This study addresses the following questions.

- **What trends can be seen** in rural wages in Asia during the 2000s? How much is there a common pattern across the region?
- **What factors are driving the increases seen?** Above all, do they stem from increased agricultural production and productivity, from changing demography or from urbanisation and industrialisation? To what extent do they reflect public policy such as minimum wages and public employment schemes? What might be expected for trends in rural wages over the next five to ten years?
- If rural wages are rising, then **what are the implications** for rural development and poverty, for food prices and food security and for economic growth, both in Asia and in other parts of the developing world?

These are substantial questions, cast moreover across a large continent with diverse country experiences. To answer them fully would take far more time and funds than we had for this study. Hence, this report is exploratory. As will be apparent, the evidence can be interpreted to give a compelling account, although quite wide margins of confidence apply to some findings. This means that, while we can be reasonably confident of the trends and their drivers, we are less confident of the exact degree of the relations observed.

Restricting observations to one or two countries would have allowed for more precision, but also would have limited the generality of the findings, leaving doubts that the countries chosen were exceptional in some respects.

The rest of this report is arranged as follows. Section 2 reviews some existing literature on rural wages in Asia, to identify changes and factors that may explain them. Section 3 reports on the approach taken, data used and analyses carried out in this study. Results, both descriptive and analytical, appear in Section 4. Section 5 concludes, with consideration of the potential implications for development both in Asia and further afield in the developing world.

1 This is the 'efficiency wage' hypothesis: paying more to workers on very low wages so they can be better nourished leads to additional productivity that exceeds the cost of increased wages.

2. Background: influences on rural wages

2.1 Theories of rural wage formation

Ideas about rural wage formation fall into two broad camps: one sees wages as the outcome of demand and supply operating in relatively free markets; the other sees rigidities of institutions and locations that can lead to outcomes significantly different to those expected from a market analysis.

A market approach

Demand for labour is derived from the scale of production and the returns to labour in production. This latter in turn depends on the marginal physical productivity of labour, compared with the productivity of other factors of production such as machinery or land (in the case of agriculture) and the cost of those factors. Hence, demand for labour should rise if i) production increases and ii) labour productivity rises. If the economic returns to other factors rise, because either their physical productivity increases or their unit costs fall, this will tend to depress the demand for labour, as increased production can be achieved by their use.

In the short term, productivity of all factors may not change much, so desired level of production becomes the main element of demand. In the longer run, all these elements come into play.

Supply of labour in rural areas is a function of:

- Growth of rural population, depending in large part on fertility and the mortality of minors;
- Migration out of rural areas, either to cities or out of the country. Some rural areas, usually those with highly productive farming, may see migrants arriving from other rural areas;
- Prevailing norms regarding participation in the workforce. These include the age at which youth enter the labour market and the elderly leave it, and the extent to which women work outside of the home and the jobs seen as suitable for them; and
- Cost of living: if local wages fall below some acceptable cost of living, people may either work less or else work with resentment that may manifest itself in protest and sabotage.

This model assumes markets work well and that there are many employers offering jobs, many workers seeking them and plenty of information to participants on going wage levels. In reality, and even in cases where labour markets come close to this ideal, wage determination is usually complicated by the following factors:

- **Bargaining** abilities may affect wages. Monopoly power may be exercised to some degree on both sides of the market, by employers — for example in a village where a landlord or a small cabal of landlords dominates the jobs markets — or by workers unionised to negotiate collectively.
- **Wages may be 'sticky'**: they do not immediately adjust to changes in demand and supply. When demand for labour falls, or supply increases, wages may not fall, as there may be social reluctance to cut them or because workers are on contracts that cannot be revised in the short term. When demand picks up, or supply falls, and especially when this corresponds with rising costs of living, it may take time for wages to catch up – owing partly to social expectations of what a fair wage is and partly to wage bargaining sometimes being episodic. Stickiness also responds to imperfect information: it can take time for both employers and employees to appreciate changed conditions in the market. Stickiness, however, is perhaps less likely in the largely informal labour markets of rural areas, where wages may adjust rapidly to changed conditions. Rural wages may appear inflexible when workers take into consideration what they might earn from migration and hence refuse to work for less than this reservation wage. Some wage differences can be explained only by **social relations and expectations**. The most prominent example concerns women, who tend to be paid less than men, even where skills and labour productivity are equivalent, owing to tradition and gender discrimination[2]. Such discrimination may also affect the wages of other groups, including the elderly, the disabled and those belonging to any other group stigmatised by language, class, creed, race etc.

Labour market dualism

Dualism posits two sectors – a modern and a traditional sector, the latter often seen as synonymous with smallholder agriculture. The modern sector has higher labour productivity than the traditional sector. Indeed, in the latter, labour productivity may be so low that, even if not zero, wages paid may exceed the marginal value product of labour — since a living wage has to be paid. Imagine a household that works a small farm, so small that the marginal additions of labour yield very little, with no opportunities to work off the farm. The household head allocates tasks to the various members of the household, but when it comes to rewarding them they all get the same food and other rewards. The traditional sector thus becomes a reserve of under-employed labour. The two labour regimes exist in parallel, operating to different logics. Distance from villages to cities with manufacturing plants further prevents, or at least delays, integration of the two regimes, as may differences in the skills of farm labourers and those required in factories.

This concept became the basis for Lewis' (1954) model of development with unlimited supplies of labour.

2 A significant gender gap in wages exists in Asia and the Pacific countries, with women tending to earn 54-90% of what men earn (Dasgupta and Kim, 2011, citing UNDP, 2010).

A modern sector such as manufacturing could attract labour from the traditional sector at a relatively low wage: this would allow manufacturing to produce at low cost with profits sufficient for high levels of reinvestment and hence rapid growth. Transfers of labour would cost the traditional sector little: indeed, with some reorganisation and perhaps access to capital, productivity could rise to cover the loss of labour (Ranis, 2012). Hence, the economy could grow very quickly, as the modern sector expands, employing labour at low cost from the traditional sector until the labour surplus is exhausted. This point, where the marginal value product of labour in both sectors should be equalised, has been called the 'Lewis turning point'.

Ranis (2012) has added the possibility that, although initially wages paid in the traditional sector exceed marginal product, as agricultural development takes place and labour productivity rises farm wages lag and fall below the marginal value product of labour. They only start to catch up as the Lewis turning point nears.

Although Lewis's model has been questioned and modified – see, for instance, Ho (1972), Jorgenson (1967) or more recently Fields (2004) – it seems to describe the conditions of Asian industrialisation in the last quarter of the 20th century. China in particular has been able to recruit labour for manufacturing at low cost from rural areas where workers on very small farms had low marginal productivity. At least this is what applied until the mid-2000s, when it seems China may have started to approach the Lewis turning point.

The extent of dualism is in debate: rural households usually have more than their farms on which to deploy labour – non-farm shares of farm household incomes are often found to be 40% or more. Hence, the Lewis model may apply only in the very early stages of development, when rural areas are difficult to access, when little capital is available, so returns to rural labour are very low. But as development takes place and rural areas are better connected to cities, as more capital becomes available and as alternatives to working on farms multiply, then dualism recedes and labour markets may begin to work as expected. In the 2000s, functioning labour markets may explain better what is observed, while elements of dualism help explain previous developments.

Public policy

Public policy can also influence rural wages. Some of the more pertinent policies that might affect rural wages include the following:

- Legislating minimum wages, although they are notoriously difficult to enforce in the largely informal workplaces of rural Asia;
- Public works employment schemes, which can provide a floor to rural wages;
- Legislation to improve rural working conditions, which may have the effect of raising costs of employment to employers and hence reduce demand. The same applies to payroll taxes, although these usually apply only to formal jobs.

By and large, it is not easy for policy to affect rural wages directly, since so much rural employment is self-employment or casual hiring, both under informal arrangements that takes place over large and sometimes remote areas where the state lacks the capacity to act.

2.2 Recent studies of changing wages in rural Asia

Bangladesh

Looking back over the longer term from the perspective of the late 1990s, Palmer-Jones and Parikh (1998) report that agricultural wages, deflated by the price of rice, fell between the late 1940s and the early 1970s, then rose through the 1980s and 1990s. They found this rise to be associated with increases in both real manufacturing wages and agricultural productivity.

More recently, Hossain (2008) constructed an index of real agricultural wages from 1950 to 2006 (see Figure 1). Farm wages initially rose, but then they declined sharply between the mid-1960s and mid-1970s – presumably on account of the political turmoil of those years leading up to and immediately following independence – but subsequently they have been rising in most years. Increased agricultural productivity and the growth of the non-farm rural economy probably account for the increases. This series has been further updated by Zhang et al. (2013), who find that rural wages have accelerated since 2005 – so much so that the gap between urban and rural wages has narrowed (see Figure 2).

Since the 1990s, another driver of rising rural wages has been the growth of manufacturing, especially the garments

Figure 1: Bangladesh, agricultural wages, real, 1950-2006

Source: Hossain (2008)

industry, which employs 3 million workers, mainly women, many recruited from villages. At first, when labourers moved out of the agriculture sector, there was only a small impact on rural wages because surplus labour existed. Over time, however, the supply of labour has been drawn down, shifting advantage in the labour market in favour of workers.

Escalation of real wages has enhanced the earnings of the poor and contributed to reduced poverty. Poverty incidence fell from 51% in 1995 to 49% in 2000 to 32% in 2010, so the pace of reduction of poverty accelerated in the 2000s. 'Rising real wages are likely major drivers behind this rapid poverty reduction' (Zhang et al., 2013).

Other drivers of higher rural wages have been the growth of the rural non-farm economy and male emigration to the Gulf and other countries, which have drawn men out of the farm labour force.

Hence, farm labour is running short. Intriguingly, Zahid (2014) claims women are now increasingly finding agricultural jobs more attractive than low-skilled jobs in the garment industry, as wages in agriculture have risen.

> *According to the latest labour survey conducted by the Bangladesh Bureau of Statistics (BBS), in 2010, out of the estimated 25.6 million farm labourers in the country, 10.5 million were women, meaning that 6.7 million women joined the farm labour market over a period of ten years. […] The RMG [ready-made garment] industry is losing its shine to the female workers, mainly because of the low wage. The farm sector has emerged as a very prospective alternative sector of employment for rural womenfolk. With more and more male farmhands migrating to urban centres to take up better paying jobs or rickshaw pulling, a void has been created in the rural farm labour market. The women have started to fill up the vacuum since the daily wage of a farm labourer is higher than the average daily wage of a RMG worker.*

Comparing wages in villages with high and low land productivity, Hossain et al. (2013) see agricultural wage rates rising on account of higher agricultural productivity. At the same time, new technology in rice growing – presumably labour-saving – has allowed labour to move out of agriculture into non-farm work:

> *[…] in villages with high land productivity, the proportion of household heads with farming as main occupation was 39% in 2008 compared with 47% observed in villages with low land productivity. In contrast, those who are engaged in trade were more prominent in high land productivity villages (17% as opposed to 10%).*

International migration plays a role, not just because it reduces the supply of labour, but also because remittances are spent locally on construction, among other things, creating extra demand for labour:

> *[…] wage growth tends to be higher in villages experiencing high growth in overseas remittances. Thus, high agricultural wage growth has been associated more with villages experiencing high remittance growth compared with villages experiencing low remittance growth. Overseas remittance indirectly supported the growth of construction sector in general and real estate sector in particular.*

Figure 2: Bangladesh, urban and rural wages, deflated by the general consumer price index, 2001-2011

Note: Urban wages are for unskilled workers (such as helpers on construction sites and other sectors). The base year is set to 2009/10. Source: Zhang et al. (2013).

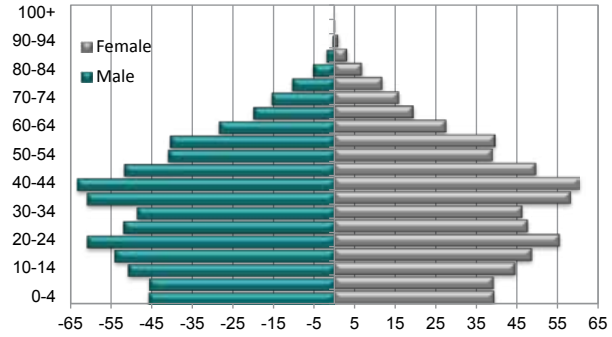
China

Recent Chinese studies focus on the ever-reducing numbers entering the workforce as China's demographic transition proceeds. This means fast-growing manufacturing plants need to recruit migrant labour from the countryside. Migration is mediated by urban registration of residents (hukou). The effect of minimum wages is in debate. Within rural China, increasing numbers work off the land, in non-farm activities.

Chinese demography and workforce

China's population structure is striking: the age pyramid for 2010 (see Figure 3) shows a pyramid for the elderly down to those in the 40-44-year-old cohort, typical of fast population growth in the past. For younger cohorts, the pyramid inverts, especially below age 20. This is the result of a rapid decline in fertility after the One Child Policy was introduced in the late 1970s. Hence, it will not be long before the numbers entering the workforce – conventionally those reaching 15 years – are fewer than those leaving – conventionally those reaching 65 years. Indeed, it is projected that in 2015 the number of Chinese

Figure 3: China, population by age and sex, 2010



Source: Compiled from UNDESA (2005; 2006).

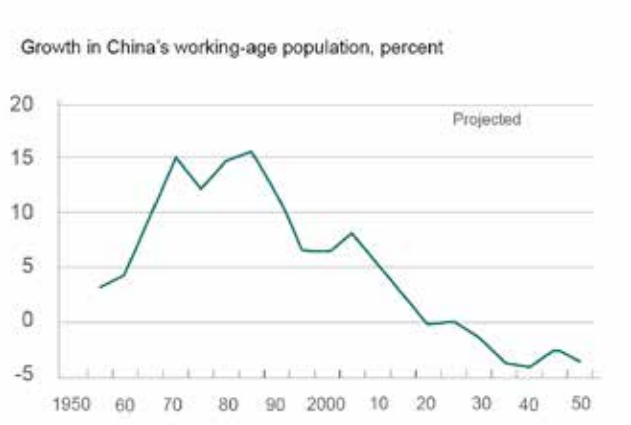
aged 15-64 years will peak, after which time the numbers will decline (see Figure A14 in Annex A)[3].
Some sources put this turning point earlier, in 2010, so that, between 2010 and 2020, the numbers aged 15-59 would fall by more than 29 million (Drysdale, 2014). In similar vein, Knight et al. (2013) estimate that the

> *[…] urban-born labour force will fall by 6.4% over the 15 years between 2005 and 2020, with the fall starting in about 2010 and accelerating in the following years. The rural-born labour force will rise by only 2.6% over these 15 years, but the rise will be confined to the first five years and there will be a fall in the last five.*

Das and N'Diaye (2013) also see China as running out of labour, but it may be as much as a decade later, in the 2020s, before absolute numbers fall: see Figure 4. The numbers of underemployed ('excess supply') are falling, although the Lewis turning point when underemployed labour in rural China will finally have been absorbed into more productive work may be reached only after 2020:

> *[…] we estimate that China's excess supply of labor already peaked in 2010 and is on the verge of a sharp decline: from 151 million in 2010, to 57 million in 2015, to 33 million in 2020. China is expected to reach the Lewis Turning Point between 2020 and 2025 — that is, sometime in that five-year period, demand for Chinese labor will exceed supply. The rapid rate of decline in the excess supply of workers closely follows the projected path of the dependency ratio, which reached its historical trough in 2010 and is projected to rise rapidly hereafter.*

Figure 4: China, workforce, 1950-2050



Source: Das and N'Diaye (2013), using UN data.

Migration from rural areas and hukou registration

It seems (see the Knight quote above) that new jobs in urban areas will increasingly have to be filled by migrants from rural areas. Liang (in Knight et al., 2013) reports record numbers of informal migrants in urban areas:

> *Second, the data from the 2010 Chinese population census show China's floating population (loosely defined as migrants who do not possess local household registration) reached 221 million in 2010, another new record. In fact, the two statistics are closely related: the rise of migration and China's floating population have overwhelmingly contributed to China's rising level of urbanisation and urban growth. These migrant workers also contributed enormously to China's economic miracle in the past three decades as they built China's skyscrapers and laboured in China's factories supplying goods across the globe.*

Migration to the cities is by now the most prevalent off-farm activity for rural Chinese, especially for those under 40 years old. Increasingly, the farms are worked by older people who remain in the villages (Li et al., 2013). In general, farm households increasingly have other work off the land (Rozelle, 2007).

Nevertheless, migration may not have reached its full potential, impeded by registration (hukou) of people's residence in either rural or urban areas. Someone registered in a rural area who moves to a city cannot obtain education, health care and other benefits, or obtain a formal urban job, without an urban permit. The result is that migrants suffer discrimination in wages: in 2009, migrant earnings were on average only 45% of the average urban hukou worker's hourly wage. This has, perhaps surprisingly, not improved in recent times, as the specific case of

3 Annexes are available for download at: www.odi.org/rural-wages

migrants to Shanghai illustrates. In 1995, migrant workers in Shanghai earned 50% of the hourly earnings of urban hukou workers; by 2009, migrants earned only 40% of the hourly earnings of their urban counterparts (Meng, 2013).

Restrictions on movement, however, have been relaxed in recent years, and are likely to become even more so, as urban job demand outstrips supply of labour (Zheng, 2013).

Wages and minimum wage policy

In the second half of the 2000s, wages have been rising very rapidly indeed (Fang, 2011):

> *In the period 2003 to 2008, the annual growth rate of monthly wages in real terms was 10.5 % in manufacturing, 9.8% in construction, and 10.2% for migrant workers. The real daily wages of paid agricultural workers in the same period rose even faster — 15.1% in grains, 21.4% in larger pig farms, and 11.7% in cotton.*

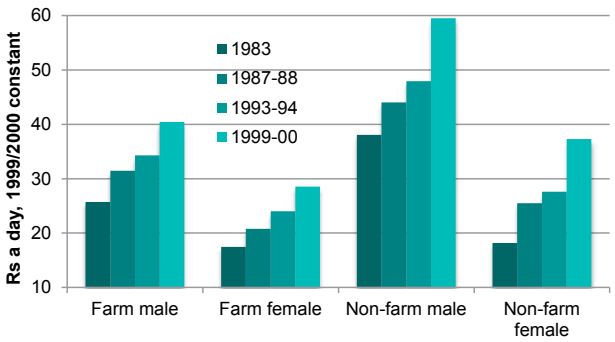
It is official policy to raise minimum wages: the '12th Five-Year Plan targets an annual increase in the minimum wage level of no less than 13%' (Fang, 2011). Moreover, there are reports that local authorities in the Pearl River Delta may be raising the minimum even higher in a bid to encourage higher technology industry (Lau and Green, 2013):

> *Localities are free to set their wages above the national level. In fact, provinces have increased minimum wages by an average of 16 per cent this year, after a 20% increase last year. Shenzhen in the Pearl River Delta tops the list in terms of minimum wage levels, with minimum monthly pay of 1,600 yuan (US$258). This has forced more than half the companies in our survey to raise wages more than they had planned, particularly for the least skilled part of their workforce.*

As manufacturing wages rise in China, it is expected that either firms will mechanise more, or shift factories from the higher-wage coast to lower-wage inland locations, or else move to countries with lower wages, with Bangladesh, Cambodia and Vietnam as likely places (Lau and Green, 2013):

> *Around 30% of the companies surveyed said they planned to move factories inland, while 10% said they planned to move out of China altogether. Both of these figures more than doubled from last year. Within China, many companies in the Pearl River Delta want to move westward to Guangxi province, where wages are 30% lower. Other popular destinations include Jiangsu, Hunan, Hubei and Jiangxi provinces. The favoured overseas destinations are Cambodia, Bangladesh and Vietnam.*

Figure 5: India, real wage rates of rural casual labourers in India, 1983, 1987/88, 1993/94 and 1999/2000 at 1999/2000 prices



Source: Bhalla et al. (2004), using Himanshu (2003).

India

Rural wages in India have been rising since at least the late 1970s (see Figure 5). By the turn of the new century, 44% of workers in rural India depended on casual wages. Women earn less than men, although the difference narrowed marginally between the early 1980s and 2000.

Earlier studies associate rising rural wages with increased yields on farms (Datt and Ravallion, 1998), as well as with public investments in physical infrastructure of roads and irrigation and in human capital in the form of schools (Bhalla et al., 2004).

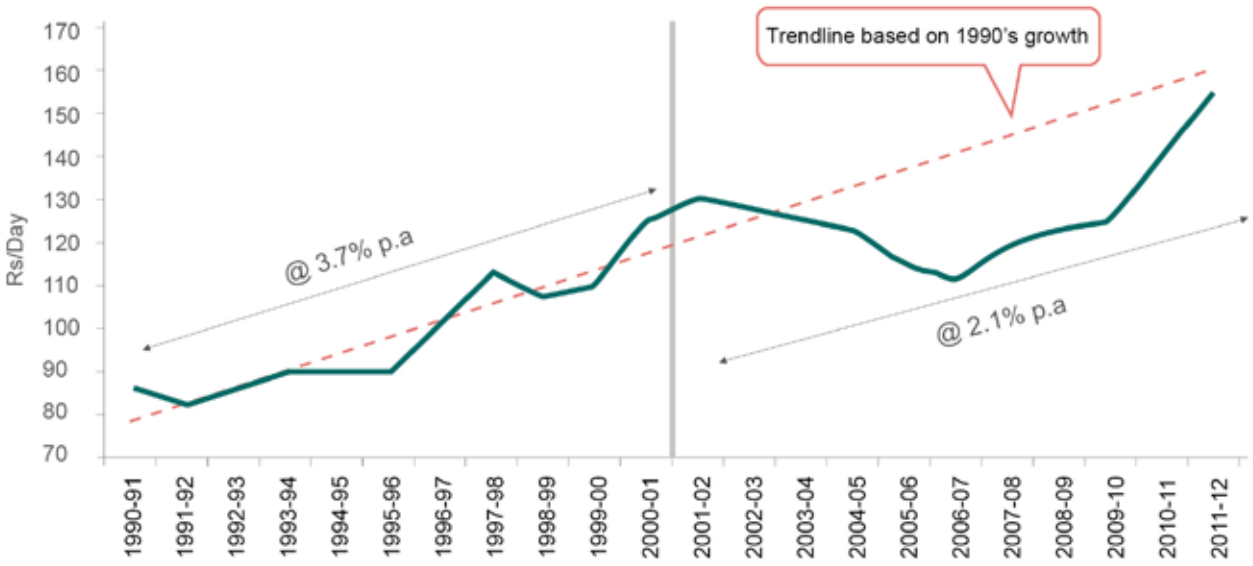
Wages on Indian farms that were growing steadily in the 1990s at 3.7% a year fell back in the early 2000s at -1.8% a year, only to rise rapidly in the second half of the 2000s, at 6.8% a year (Gulati et al., 2013) (see Figure 6, overleaf).

Gulati et al. (2013) see some correspondence with economic growth, especially with increases in construction, which tends to attract rural labour. About 43% of male rural migrants end up on building sites. Construction has boomed: a labour-intensive sector, its share of Indian employment has risen just as agriculture's share has fallen. Indeed, it seems that finally – studies of rural India have long lamented how little change has been seen in the fraction of the workforce in agriculture – agriculture is relinquishing its share of employment in favour of other sectors, particularly construction and services (see Figure 7), overleaf.

Public employment schemes

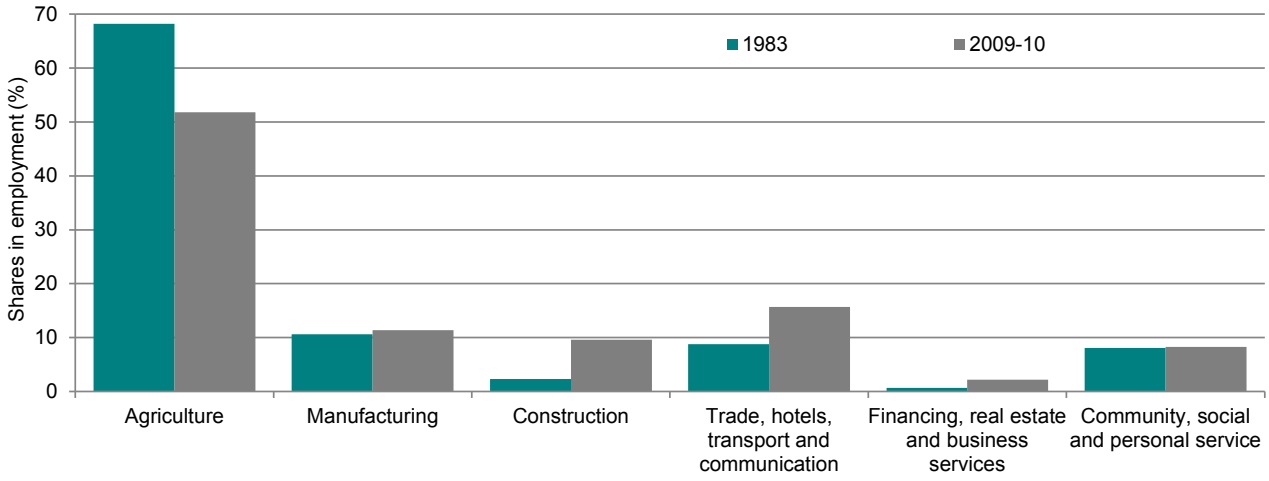
Parts of India have long used public employment as a way to alleviate rural poverty. The Maharashtra Employment Guarantee Scheme, in operation since 1975/76, provides jobs for the poor on a large scale, with half of the employment given to women. Funded equally by a tax on professional and formal jobs and by general revenues, the scheme legally entitles people to work: whenever 50 jobseekers demand work, jobs must be provided.

Figure 6: India, average farm wages, constant at 2011/12 prices, 1990/91 to 2011/12



Source: Gulati et al. (2013), based on data from the Indian Labour Bureau.

Figure 7: India, sector-wise distribution of employment, 1983-2009/10



Source: Thomas (2012).

Based on favourable evaluations of this, a national scheme was introduced in 2006, through the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The scheme offers 100 days of work at a guaranteed wage – by 2011 at Rs 120-179 a day – varying by state. Since its introduction, considerable interest has been shown in its effects on rural labour markets, with the expectation that it will put a floor in the rural labour market, leading to higher casual unskilled wages. Gulati et al. (2013) summarise findings from studies on its effects:

Some recent research seems to support the idea of a rise in real casual labourer wages due to MGNREGA, with estimates ranging from 4% to 8% (Berg et al 2012, Azam 2012, Imbert and Papp 2012). NSSO data too indicate that the advent of MGNREGA has resulted in a significant structural break in rural wage increases. Between 1999 and 2005, pre-MGNREGA, nominal wages in the rural economy grew at an average annual rate of 2.7%. Post-MGNREGA, average wage increases almost quadrupled to 9.7% between 2006 and 2009-10.

There are, however, studies which argue that rise in casual wage rates cannot be wholly attributed to MGNREGA (Dutta et al, 2012). Mukherjee & Sinha (2011) have conceived a microeconomic model that establishes that the fact of a guarantee of employment at a given wage through the MGNREGA would introduce contestability in the rural labour market. In other words, in the presence of MGNREGA scheme the large land holders in rural areas may now need to raise wage of workers they hire in order to ensure the necessary supply of labour.

Alha and Yonzon (2011) see the scheme as especially important for female labour since males can more easily migrate to find work. In Thanjavur district, Tamil Nadu, very large increases in rural wages, from Rs 60 to Rs 110 a day from 2006 to 2008/09, have been reported, as have complaints from large farmers of not being able to recruit labour for paddy planting or harvesting (Selva Maheswari and Gangwar, 2011).

Even if the scheme employs only 10% casuals, it seems to affect local wage rates, which have grown most where the scheme is most active.

But how much has the MGNREGA scheme pushed up rural wages compared with other drivers? A regression of average days of employment per household by the MGNREGA scheme, productivity of foodgrains and road density on rural wages show all these have raised the growth rate of wages for both male and female farm labourers (Narayanamoorthy and Bhattarai, 2013). Gulati et al. (2013) regress the incidence of the scheme and growth of the economy on rural wages to find economic growth is a much stronger driver than the employment scheme. They therefore argue that funds invested in the scheme might better be spent on measures to stimulate economic growth – although if the employment projects create useful physical infrastructure, the scheme might contribute towards this.

Indonesia

Rural wages in Indonesia[4] rose gradually from the early 1980s, but sunk for five quarters in 1998/99 during the Asian financial crisis; they recovered slightly in the late 1990s. They changed very little in real terms for the first half of the 2000s, but grew in the second half, with a pronounced upwards shift beginning in the third quarter of 2005. Wages again rose dramatically around the 2007/08 period, but fell from peaks of over Rph 20,000 per day after 2008. Nonetheless, in 2009 they were some Rph 5,000 per day (50%) higher than their levels for most of the first half of the 2000s (see Figure 8).

Researchers looking at whether Indonesia's agricultural wage rate would be raised more by either increased industrial demand or increased agricultural demand for labour found that, although both had a positive influence on raising wages, industrial demand played a far greater role (Harahap and Barichello, 2014).

Agricultural wages were modelled as a function of Java's rice price (a proxy for agricultural demand for labour), Indonesia's manufacturing wage (a proxy for the real urban wage) and quarterly manufacturing gross domestic product (GDP) (a proxy for urban sector demand for labour not captured by the manufacturing wage). Their results suggested the manufacturing wage rate was highly important in determining farm wages, with estimates of farm wage rates rising by 0.3% for a 1% rise in manufacturing wage. The effect of rises in the rice price was only one-third as large, with farm wages rising only 0.1% for a 1% rise in the rice price. The growth in manufacturing GDP was also found to have a strong influence on farm wages, raising them by almost as much as the manufacturing wage rate changes.

Arias-Vazquez et al. (2013) compared impacts of growth in high-productivity sectors – manufacturing, transport and communications, finance, electricity and utilities and mining – and low-productivity sectors – other services, agriculture, retail and wholesale trade, government and public administration and construction – on annual changes in average wages across Indonesia, using panel data from 1988 to 2007. This gave a large positive and significant coefficient on growth from high-productivity sectors, but only a small positive, but insignificant, coefficient on growth of low-productivity sectors.

They also used a cross-province regression to determine how much annualised changes in wages (among other 'employment outcomes') were influenced by share-weighted growth in different sectors of the economy. This gave positive coefficients on other services, agriculture, manufacturing and transport, although only manufacturing was significant. Mining was also significant, but with a negative and small coefficient.

Education, road quality and rural wages

Other research has examined the impact of improving rural roads on rural wages in Indonesia. Using wage data over the 1995-2007 period, Yamauchi et al. (2011) showed improvements in road infrastructure (transportation speed) increased non-agricultural wages in rural Indonesia by connecting workers to employment opportunities outside villages. More educated individuals were able to take advantage of the opportunities raised by better connectivity to gain higher-wage employment outside the agriculture sector.

More recently, Yamauchi (2014) showed better roads and faster transport positively influenced both agricultural and non-agricultural wages in Indonesia between 2007 and

4 Here, agricultural wages in Java are used to illustrate Indonesian wages. They are an average of the provincial average for West Java, Central Java and East Java, which together include some 70% of Indonesia's population.

Figure 8: Indonesia, real agricultural wage rate in Java, 1983-2009, rupiah a day

Note: Wages have been deflated by the rural Consumer Price Index (CPI) to constant 2007 levels. Source: Quarterly data from Harahap and Barichello (2014) (horizontal axis labels added).

2010. Moreover, better roads and schooling interacted to improve agricultural daily wages significantly.

A cross-country analysis (Winters et al., 2008) appears to corroborate these results, finding educational and infrastructure investment were critical for providing opportunities in the labour market that led to higher wages across a sample of 14 countries, including Indonesia.[5] They wrote:

> *The key to participating in high value wage employment activities appears to be education. Generally, there is a positive relationship between education and participation in rural labour markets suggesting that education is linked to labour markets and that labour markets are used as a pathway out of poverty for the educated.*

And on agricultural wages specifically:

> *While agriculture is not chosen as the sector to participate in by the educated, the educated workers that find the right opportunities do receive higher wages.*

For Indonesia specifically, using data from a 2000 survey, they found that wages in rural labour markets responded strongly and positively to education and infrastructure, but with a large negative coefficient for female workers (see Table 3 in Winters et al., 2008). For agriculture alone, they found a stronger negative coefficient for female workers and a positive effect for education: infrastructure was not found to be significant (see Table 5 in Winters et al., 2008).

Other parts of Asia

In **Malaysia**, it has become increasingly difficult to recruit workers for oil palm estates. Indonesia used to be a source of migrant labour, filling 80% of such jobs. But this has dwindled as a result of higher wages and rapid urbanisation in **Indonesia**. Applicants for jobs in Malaysia's palm oil sector plunged to 38,000 in 2013, from more than 120,000 in each of the previous two years, according to data from the Indonesian Embassy in Kuala Lumpur (Raghu, 2014).

Malaysia seems to be taking in migrants from other countries. As many as 250,000 Burmese may be working in Malaysia, often taking low-paid jobs, including at restaurants and construction sites, with help from recruitment agencies. About 110,000 Burma nationals in the country lack proper legal documentation, according to the Labour Ministry (Thai PBS, 2014).

Bangladesh and Malaysia signed an agreement in November 2012 for migrant labour, with so far 4,000 Bangladeshis travelling to Malaysia to fill jobs under the deal (Ara, 2014).

In **Burma**, farm labour shortages are reported as casual labourers leave the land for construction jobs in Rangoon (Htike, 2014).

In **Thailand**, the shopping malls, factories and construction sites in Thailand's northeast are attracting labour, since the economy of the region is booming. In 2013, a national minimum wage of $10 a day was introduced, which translated to a 35% rise in the relatively poor northeast. This has apparently even led to some workers returning to their home region from Bangkok (Carsten and Temphairojana, 2013).

5 Country surveys they used were Albania (2005), Bangladesh (2000), Bulgaria (2001), Ecuador (1995), Ghana (1998), Guatemala (2000), Indonesia (2000), Malawi (2004), Nepal (2003), Nicaragua (2001), Nigeria (2004), Panama (2003), Tajikistan (2003) and Vietnam (1998).

Less positive reports come from economies that have not been growing as quickly, such as Pakistan (Dawn.com 2014; Oman Tribune, 2014) and the Philippines (Reyes and Tabuga, 2011).

2.3 Summary

Recent literature, both descriptive and analytical, reports similar findings in several countries of Asia:

- In Bangladesh, China, India and Indonesia, rural wages are rising – and apparently faster in the second half of the 2000s than before.
- Growth of manufacturing and jobs off the farm, especially construction in cities, is drawing labour off the fields.
- For China, at least, the pull of the city coincides with reductions in the labour force, as the lower fertility of the past 30 years comes into play.
- It is less clear to what extent the growth of the rural non-farm economy or increases in agricultural productivity have led to increased demand for labour in rural areas.
- Although public employment programmes may contribute to higher rural wages, they may not drive them as strongly as economic growth. That said, the Indian MGNREGA scheme may be disproportionately valuable to female workers and to those in economically lagging regions.

3. Study approach, data and methods

3.1 Research questions

From the general questions posed, the following two were selected for detailed investigation, given the limits of secondary data available and time for study:

1. **What trends can be seen** in rural wages in Asia during the 2000s? In how many cases were increases in rural wages more rapid in the second half of the decade compared with the first half?
2. **What factors are driving the increases seen?** What are the relative significance and weight of increases in agricultural productivity and manufacturing output that should raise demand for labour, or of changes in numbers of working-age population in rural areas that affect the supply of labour?

3.2 Approach

The first question was answered by collecting data on rural wages in Asia during the 2000s, then comparing the rates of increase seen for the early and late part of the decade.

Data were collected for the most populous developing countries east of the Khyber Pass and south of Central Asia. There are 13 countries in this region with more than 20 million inhabitants; in declining order of population, these are China, India, Indonesia, Pakistan, Bangladesh, Philippines, Vietnam, Thailand, Burma/Myanmar, Republic of Korea, Nepal, Malaysia and Sri Lanka. DPR Korea was omitted owing to its unusual characteristics and lack of data. Taiwan China was omitted for lack of readily available data on rural wages.[6]

Figure 9 shows the location of the countries, while Table 1 provides some background characteristics: population, proportion of residents classified as rural and agriculture's contribution to the economy in 2000 compared with 2012.

For **rural wages**, the aim was to find a series that represents trends in unskilled rural wages. There is, of course, no single national rural wage. Wages vary by location, by season, by the job carried out and usually also by sex, with women typically being paid less than men. Given limitations of time and access to data, a fairly strong assumption had to be made in several cases: that the data series selected to represent rural wages in each country were consistent in trend with other potential data series for that country.

To look at potential drivers of changes in rural wages, a simple model has been adopted:

Δ Rural wage = f[Δ agricultural labour productivity, Δ rural working age population, Δ manufacturing output, dummy for first half of the 2000s]

— where Δ indicates change in annual average rate.

This assumes the main influences on rural wages will come from changes in demand from farming or alternatively from growth of manufacturing output, and from changes to the supply of labour. Changes for two time periods, early and late 2000s, were modelled, with a dummy to see whether there was any significant change in the relations seen between the two periods.

Several simplifying assumptions were made, including:

1. Demand for agricultural labour will vary mainly according to the marginal productivity of labour. Increases in area tilled may also increase, but this was omitted on the grounds that increases in area cultivated have been limited in most of these countries during the 2000s.
2. Growth of manufacturing was taken to represent growth of demand for labour in activities other than agriculture. Clearly, services also require labour. Manufacturing was, however, thought to represent a

Box 1: Varying transitions from agrarian to industrial economies

The selected countries range from those still heavily reliant on agriculture – particularly Nepal and Burma/Myanmar – to those transitioning towards being more urban and less dependent on agriculture – with Pakistan, Vietnam, Bangladesh and India in the earlier stages of the transition and China, Indonesia and the Philippines in later stages – to a few countries where agriculture is now a relatively small part of the economy (Republic of Korea and Malaysia).

Figure 10 illustrates these transitions from rural to urban, from agriculture to other sectors, through time from the early 1980s to 2010/12. The general trend runs from top left (rural and agricultural) to bottom right (urban and non-agricultural), with most countries seeing a decline in the relative importance of agriculture and the proportion of people living in rural areas. There are few exceptions. Sri Lanka alone shows a rising rural proportion of population; some other countries go against the trend for the odd 10-year period.

The rates at which these countries are making the transition vary sharply. Over the past 30 years, some have increased the proportion of the population living in urban areas by more than 25 percentage points (China, Malaysia, Indonesia and Republic of Korea); others have seen much slower urbanisation (Pakistan, India and Thailand, with increases limited to 7-8 percentage points). Similar differences apply to changes in the share of agriculture in GDP, with very strong falls seen in China, Nepal and Vietnam. Lesser reductions apply for Pakistan, while the share in Burma/Myanmar actually rose.

6 Given Taiwan's level of industrialisation, rural wage rates probably rose substantially prior to the period of interest for this study in any case.

source of jobs better paid than agriculture, since services can include activities that are badly rewarded: informal, refuge activities undertaken by poor people who cannot afford unemployment.

Figure 9: Most populous Asian developing countries east of the Khyber Pass and south of Central Asia

Sources: Map from Wikimedia commons.

3. Growth of working-age population represents the supply of labour. This variable should encompass both population growth in rural areas and net migration out of rural areas. It assumes the rates at which different parts of the working-age population participate do not change significantly. In practice, it may be that this changes by age – with increasing incomes, adolescents may feel they can spend more time in school before seeking a job, while older workers may be able to retire earlier – and by sex – women may prefer to stay home as income rises, or alternatively, as they spend longer in school, may actively seek careers. Over a decade, however, we assumed such changes would not affect the numbers seeking work as much as the demographic factors.

The first two assumptions may seem quite strong. However, given that the model operates by rates of change rather than by levels, it is not necessary that the variables selected completely describe demand for rural labour, but rather that they represent the main forces of demand and that omitted variables would not show a different trend. To expand: in the case of agriculture, the assumption is not that increases in area do not raise demand for labour; of course they do. The assumption is that such increases are not greater than those in agricultural labour productivity. Similarly, the omission of labour demand in services assumes any increase in service jobs (better paid than in agriculture) is not greater than that of manufacturing.

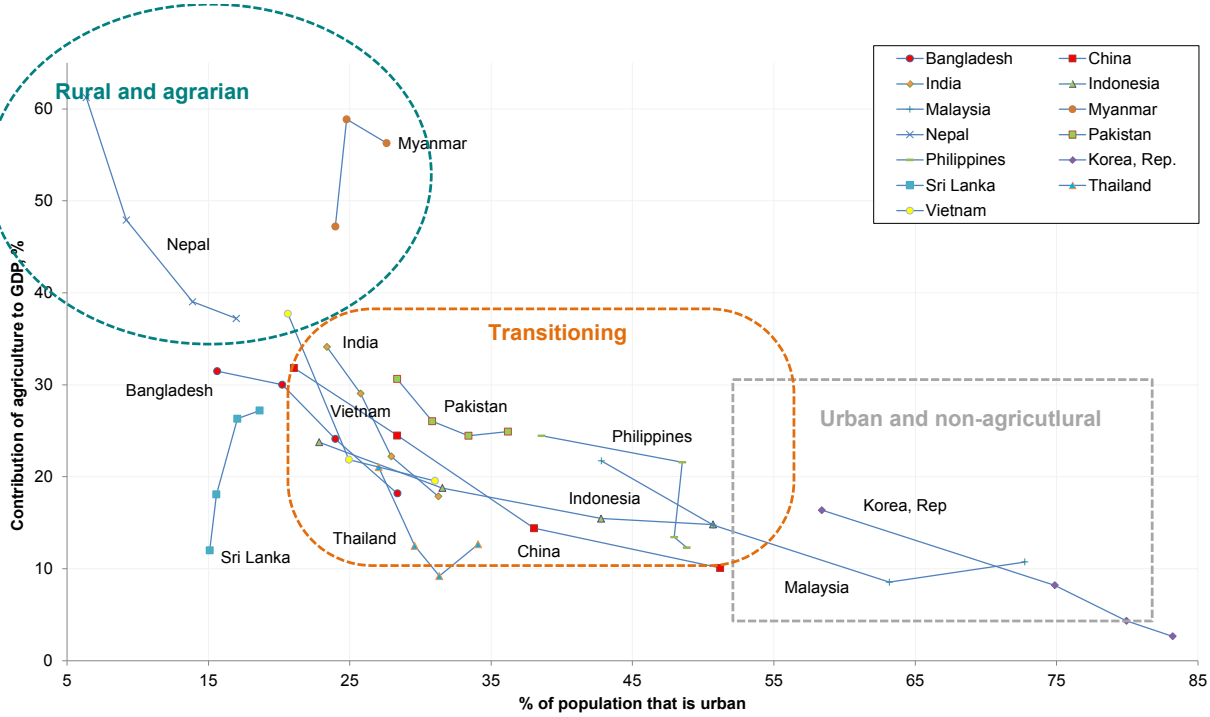
Table 1: Population, proportion rural and agriculture's contribution to GDP

	Population 2013 (millions)	% rural	Agriculture, value added, % of GDP, 2000	Agriculture, value added, % of GDP, 2012
China	1,417	46	15	10
India	1,252	68	23	18
Indonesia	250	48	16	14
Pakistan	182	63	26	24
Bangladesh	157	71	26	18
Philippines	98	51	14	12
Vietnam	92	68	23	20
Thailand	67	65	9	12
Burma/ Myanmar	53	66	57	48*
Korea, Republic of	49	16	5	3
Malaysia	30	26	9	10
Nepal	28	82	41	37
Sri Lanka	21	85	20	11

*Note: National classifications of the rural/urban divide may not be fully comparable as different countries have different thresholds for village/ town size classified as 'urban'. * Data for agriculture, value added as a proportion of GDP for Burma/Myanmar are for 2004 as later data are not available.*

Sources: Population data from FAOSTAT. Agriculture (% of GDP) from World Bank World Development Indicators.

Figure 10: Pathways to urbanisation in selected Asian countries, 1980/82-2010/12



Note: Four data points for each country are shown to represent trends in time: 1980/82, 1990/92, 2000/02 and 2010/12. Vietnam is missing the first data point and Burma/Myanmar the last, since data were unavailable.
Source: Constructed from data in World Bank WDI and FAOSTAT

3.3 Data sources

Recent rural wage data

Literature, databases[7] and surveys (nationally representative or otherwise) were consulted to source data on rural wage trends in the 13 focus countries, looking for nationally **representative rural agricultural wage data spanning 2000 to 2014.**

Data beginning before 2000 were also considered in cases where available data would otherwise span too short a period. Subnational data, those disaggregated by gender of worker, type of crop, season of production, state sector workers and skilled agricultural worker wages, were also collected where available: in some cases, only such disaggregated data were available.[8]

Table 2 presents the wage data collected for the 13 countries over the past 15 or so years.[9] While there are limits to the comparisons that can be made across countries, given differences in wages covered, within countries comparisons through time should be valid.

Adjustments to wage data

Where wages were not presented as day rates, these were imputed from monthly wages using the convention applied in the ILO's Occupational Wages around the World dataset of 25 working days per month.

Wages in nominal local currency units were deflated by the national CPI re-based to 2010. To allow for comparison across countries, they were then converted to US dollars using the 2010 exchange rate – market exchange rate, so not corrected for purchasing power. Both CPIs and exchange rates were taken from the World Bank's Development Indicators database. Burma/Myanmar is an exception: wages here were deflated to 2012 levels and converted to 2012 US dollars: the official exchange rate grossly overvalued the Burmese kyat prior to 2012, so a 2010 conversion would make daily wage rates implausibly high.

For analysis, rural wage data were selected to be as representative as possible. Where nationally representative average wages were not available, the largest available aggregates were used (geographically or in terms of crops). When wages were available only divided by sex, men's

7 Such as those from national statistical services or international organisations including the World Bank or the International Labour Organization (ILO).

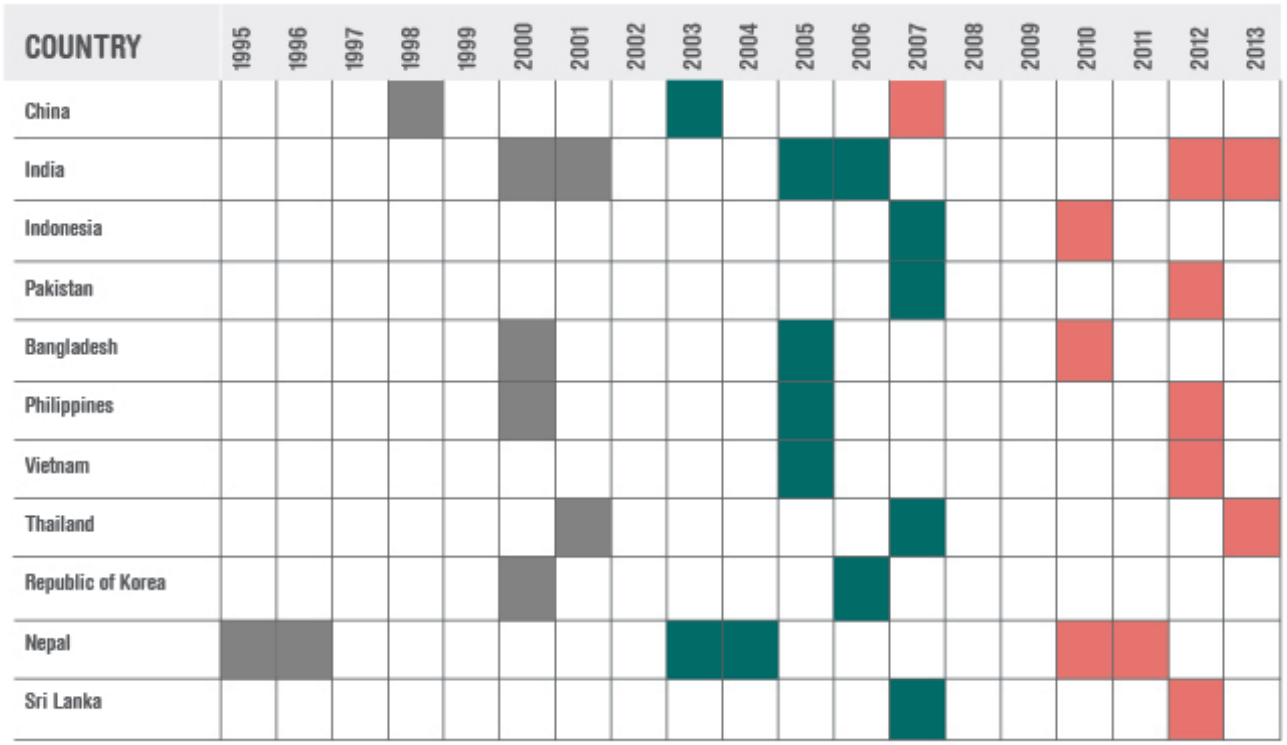
8 There are no international databases that regularly report on daily wages for the sample of countries of interest that have consistently done so for the time period of interest. National surveys that collect this type of data are few and far between.

9 Annex B presents more detail on individual country data. Available for download at: www.odi.org/rural-wages

Table 2: Description of data and sources on rural wages by country

Country	Type of data	Source
China	Peak and slack season daily wage data for agricultural labour in poor areas in Gansu province **1998, 2003 and 2006**	Zhang et al. (2010), using village surveys in poor countries in Gansu province
	Average male and female daily wages in five provinces: Jiangsu, Hebei, Shaanxi, Jilin and Sichuan **1998, 2004 and 2007**	Zhang et al. (2010), based on village surveys conducted by the Centre for Chinese Agricultural Policy (CCAP) in the five provinces
India	Average male and female rural daily wages in India **1998/99-2012/13**	India Labour Bureau, presented in Usami (2012), updated from the Labour Bureau site
Indonesia	Average daily wages of animal husbandry workers **2007-2013**	Bureau of Statistics Indonesia
	Village-level agricultural worker daily wages in 98 villages across 7 provinces (selected for an agro-ecological zone spread) **2007 and 2010**	Survey data from Dr Futoshi Yamauchi
Pakistan	National monthly wages on average and for males and females involved in agriculture, forestry, hunting and fishing **2007/08-2010/11 and 2012/13**	Pakistan Bureau of Statistics, available in Labour Force Participation survey reports
	Daily wages for crop workers in Pakistan **1999 to 2004**	Occupational Wages around the World database
Bangladesh	Average daily wage rates for males and females in peak and lean seasons **2000, 2005 and 2010**	Zhang et al. (2013), using Household, Income, and Expenditure Surveys by Bangladesh Bureau of Statistics
Philippines	Average daily wage rates of farm workers involved in all crops, as well as for specific crops: rice, maize, coconut, and sugarcane **1991-2012**	Philippine Industry Yearbook of Labour Statistics 2013
	Wage rates in Central Luzon (the 'rice bowl' of the Philippines) **1998/99, 2003/04, 2007/08** and **2011/12**	Calculated from surveys from International Rice Research Institute (IRRI) Farm Household Survey Database, Central Luzon Loop surveys
Vietnam	Monthly average income per employee in state agriculture, forestry and fishing sector in Vietnam **2005-2012**	General Statistics Office of Vietnam, website
	Average daily wage for agricultural labourers **1993, 1998** and **2002**	Nguyen (2006), using Vietnam Living Standards Survey and Vietnam Household Living Standards Survey data
	Average income of wage workers in rural areas **2007 and 2009-2012** (included to compare between state sector wage and average rural incomes)	Vietnam General Statistics Office Reports on the 2011 and 2012 Vietnam Labour Force Surveys
Thailand	Average monthly wage for skilled agriculture and fishery workers in Thailand **2001-2013**	Bank of Thailand for quarterly wages, averaged annually
Burma/ Myanmar	Daily wage rates for rice production labour in Ayeyarwardy: transplanting, weeding, fertilising, carrying, harvesting, threshing, winnowing and the average of these 1**996** and **2004**	Calculated from surveys from IRRI Farm Household Survey Database, 'Survey for Assessing Changes in Agriculture and Livelihood in Ayeyarwardy Division, Myanmar'
Republic of Korea	National average monthly wage rates for agricultural crop workers **2000-2006** and for dairy product processors **1996-2006**	World Development Report 2013, Occupational Wages around the World database
Malaysia	Annual national average agricultural sector monthly wages **2010-2012**	Malaysian government statistics, Salaries and Wages Survey Report 2012
Nepal	Mean daily wage in agriculture nationally **1995/96, 2003/04 and 2010/11**	Nepal Living Standards Measurements – in Nepal LSMS Report 2011
Sri Lanka	Agricultural daily wages in Sri Lanka nationally **2007-2012**	Department of Census and Statistics Sri Lanka Labour Force Survey Annual Reports

Table 3: Time spans covered by data



wages were taken; when wages were given only seasonally, peak season wages were used. Wage data were separated into two time periods – early to mid-2000s and mid-2000s to early 2010s[10] – to compare average annual changes in rural wages – dependent variable – to average annual changes across the same time period in three independent variables: agricultural productivity, manufacturing and the rural working population.

Burma/Myanmar was excluded as data on independent variables were lacking. Malaysia was excluded as wage data were readily available only for 2010-2012.

The dataset ended up comprising 11 countries, 6 of which covered both time periods, giving 17 observations in all. Table 3 shows the countries and years of observations: grey to green representing the first period and green to red the second period.

Potential factors affecting rural wages

National data representing **agricultural labour productivity, the value of manufacturing** and the size of the **rural working population** were compiled, as Table 4 shows.

10 These time periods vary slightly depending on availability of data.

Table 4: Data on key variables influencing rural wages and sources

Variable	Description of data	Source
Agricultural labour productivity	Agricultural productivity per worker was constructed by taking **gross production value of all agriculture** in constant 2004/06 US dollars, divided by the estimated **total economically active population in agriculture** Data not available for Burma/Myanmar	FAOSTAT
Value of manufacturing	**Manufacturing, value added** in constant 2005 US dollars Manufacturing refers to industries belonging to International Standard Industrial Classification (ISIC) divisions 15-37 (https://unstats.un.org/unsd/cr/registry/regcst.asp) Data not available for Burma/Myanmar	World Bank Development Indicators
Rural working population	Constructed from data for **rural population** and the **proportion of the total population between the ages of 15 and 64** Applying the fraction of the total population aged 15-64 to the rural population gives an estimate of the rural working population. Ideally, the fraction of the rural population aged 15-64 would be used, but these data were not readily available	World Bank Development Indicators

4. Results

4.1 Description of key variables

Rural wages

Table 5 summarises the wage data found over three periods where available: i) early 2000s, ii) mid-2000s and iii) late-2000s to early 2010s. Wages are presented in constant 2010 US dollars, with percentage changes between the periods shown in the right-hand columns.

Rural wages rose in most countries and over both periods (see Figure 11). The exceptions are few: Pakistan in the second period; the Philippines for most crops in the early period and all crops except rice in the later period; and Bangladesh in the first period. China, Vietnam and some provinces of Indonesia saw the most pronounced increases. At the other end of the spectrum, Pakistan and the Philippines saw stagnant or falling wages.

Rural wages increases accelerated in the 2000s for the majority of countries where the two periods could be compared. Acceleration was clear for all series from Bangladesh, China, India, Nepal and the Republic of Korea. Wage increases had slowed in Thailand and Vietnam. The results for the Philippines were mixed.

Even with increases in the 2000s, **levels of wages in rural areas in the early 2010s remained low,** with few exceptions. Only two observations exceeded $10 a day: farm workers in Malaysia and dairy process workers in the Republic of Korea. Indeed, many observations were below $5 a day. Consider what that means for households that have to depend on such earnings. If a worker were employed for six days a week, year round – a strong assumption, when so much rural work is seasonal – then annual wage earnings would be $1,560. Assuming one dependant for every worker, then average per capita incomes would come to just $2.14 a day. This may just clear the poverty line, but not by much. Two qualifications apply, however. One is that some rural households could have earnings from non-farm enterprises with higher returns to labour; the other is that the conversion to US dollars has been done at market, rather than purchasing power parity (PPP), rates – see Annex C[11] for PPP conversions that show many more cases where wages exceed $10 a day.

For four of the countries, China, India, Pakistan and Bangladesh, available **wage data are differentiated by gender.** Rural wages for women are in most cases between a quarter and one-third less than those paid to men. Comparing difference through time, the wage gap appears to be narrowing, with relative increases in female wages slightly outstripping increases in the wages of their male counterparts (see Figure 12). Female wages as a proportion of male wages grew in most of the five provinces in China, in India slightly and in Bangladesh over the last period in particular. No progress is apparent in Pakistan, where the wage gap is the worst of the sample, with female agricultural labour wages less than half of male wages in 2012.

Agricultural labour productivity

From 1995 to 2012, **agricultural labour productivity** improved in all of the sample countries, the exception being Pakistan (see Figure 13).

Increases from 2005 to 2012 can be compared with those seen for the preceding seven years – 1997-2004 (see Figure 14). Most countries show an acceleration in the average rate of growth: China, India (from almost no growth to almost 3% a year), Indonesia, Pakistan (from negative to positive), Bangladesh, Thailand, Republic of Korea, Nepal and Sri Lanka (also from negative to positive). In contrast, the Philippines, Vietnam and Malaysia saw average annual rates of growth shrink from the first to second period, although the rate remained relatively high in the cases of Vietnam and Malaysia.

Value of manufacturing output

From 1995 to 2012, the value of manufacturing output grew across all countries (see Figure 15), albeit at considerably different rates.

Comparing manufacturing growth in 1997-2004 with that for 2005-2012 (see Figure 16), shows it accelerated for China, India, Indonesia, Bangladesh, the Philippines and Sri Lanka. In five cases, growth slowed, although for the Republic of Korea and Vietnam the rates still remained high.

Rural working population

In the mid-1990s, rural working populations were rising in all cases other than for the Republic of Korea. By 2012, the numbers were falling in China, Malaysia, Thailand and Sri Lanka – with Indonesia rising slightly after several years of falls. In these cases, a turning point has been passed. In contrast, another group has had rural working population rising throughout the period: Burma/Myanmar, Philippines, Vietnam and South Asia.

All countries saw rates of growth fall between 1997-2004 and 2005-2012, except for the Republic of Korea, which experienced a constant rate of decline (see Figure 18). The most dramatic change occurred in China, where the rural working population changed little in the earlier period but shrank on average, by 1.7% a year, in the latter. In Indonesia, the growth rate became negative in the second period, while in Thailand, Myanmar and Sri Lanka it declined to half a percent per year or less.

4.2 Causes of changes in rural wages

Examining the data

A multivariate simple linear regression was conducted, with data from a panel, unbalanced owing to data

11 Annexes are available for download at: www.odi.org/rural-wages

Table 5: Real rural wages and changes for 13 Asian countries, 1995/96-2013

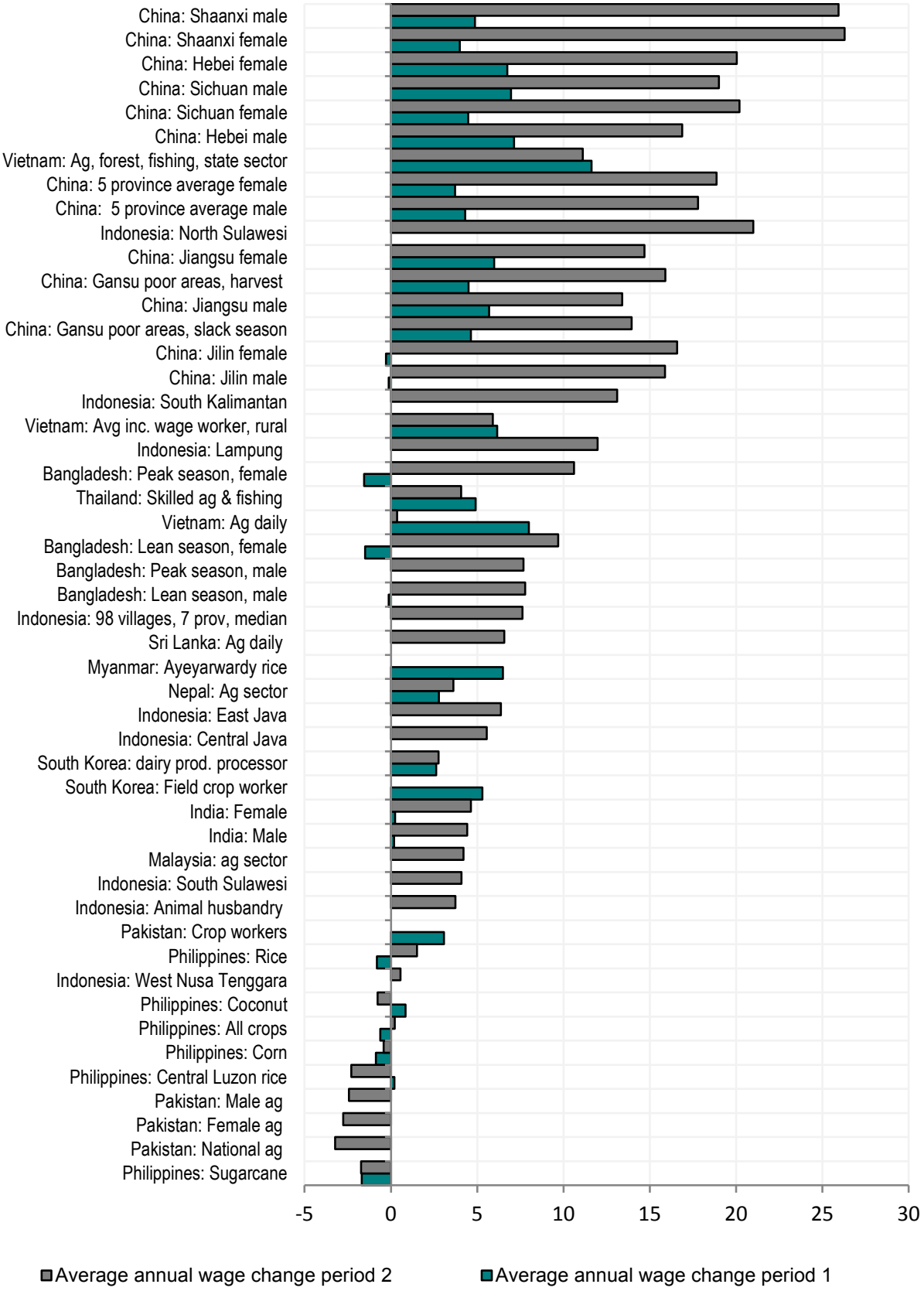
	US$ real daily wages (constant 2010[a])			Change in wages (%)		
Average daily wages	**Early 2000s**	**Mid-2000s**	**2010s**	**Early 2000s-mid-2000s**	**Mid-2000s-2010s**	**Early 2000s- 2010s**
China	**1998**	**2003**	**2006**	**1998-2003**	**2003-2006**	**1998-2006**
Gansu province, poor areas, farm **labour, harvest season**	2.32	2.89	4.50	25	56	94
Gansu province, poor areas, farm labour, slack season	1.73	2.17	3.21	25	48	85
Agricultural labour, male, five-province average	**1998**	**2003**	**2007**	**1998-2003**	**2003-2007**	**1998-2007**
	3.02	3.73	7.18	23	92	137
Jiangsu	3.26	4.30	7.11	32	65	118
Sichuan	2.35	3.29	6.60	40	101	181
Shaanxi	2.20	2.79	7.02	27	152	219
Jilin	4.67	4.64	8.37	-1	80	79
Hebei	2.55	3.60	6.72	41	87	163
Agricultural labour, female, five-province average	2.30	2.76	5.51	20	100	139
Jiangsu	2.49	3.33	5.76	34	73	132
Sichuan	1.92	2.39	4.99	25	109	161
Shaanxi	1.71	2.08	5.29	22	154	209
Jilin	3.58	3.53	6.52	-1	85	82
Hebei	1.71	2.37	4.92	38	108	187
India	**2000/01**	**2005/06**	**2012/13**	**2000-2005**	**2005-2012**	**2000-2012**
National, agricultural labour, male	2.13	2.15	2.91	1	35	36
National, agricultural labour, female	1.59	1.61	2.21	1	37	38
Indonesia	**n/a**	**2007**	**2010**	**n/a**	**2007-2010**	**n/a**
98 villages, survey data, 7 provinces, median		2.92	3.64		25	
Lampung		2.55	3.58		40	
Central Java		2.27	2.67		18	
East Java		2.36	2.84		20	
West Nusa Tenggara		3.00	3.05		2	
South Kalimantan		3.29	4.76		44	
North Sulawesi		5.08	9.00		77	

	US$ real daily wages (constant 2010[a])			Change in wages (%)		
Average daily wages	**Early 2000s**	**Mid-2000s**	**2010s**	**Early 2000s-mid-2000s**	**Mid-2000s-2010s**	**Early 2000s- 2010s**
South Sulawesi		3.05	3.44		13	
National average, animal husbandry workers	**n/a**	**2007**	**2013[b]**	**n/a**	**2007-2013**	**n/a**
		3.25	4.05		25	
Pakistan	**n/a**	**2007**	**2012**	**n/a**	**2007-2012**	**n/a**
National, agricultural workers		2.77	2.35		-15	
Male		3.36	2.97		-12	
Female		1.68	1.46		-13	
Average daily wage, crop workers	2000	2004	n/a	2000-2004	n/a	n/a
	2.33	2.63		13		
Bangladesh	**2000**	**2005**	**2010**	**2000-2005**	**2005-2010**	**2000-2010**
National, peak season, male	1.92	1.92	2.78	0	45	44
National, lean season, male	1.53	1.52	2.21	-1	46	45
National, peak season, female	1.32	1.22	2.02	-8	66	53
National, lean season, female	1.10	1.02	1.62	-7	58	48
Philippines	**2000**	**2005**	**2012**	**2000-2005**	**2005-2012**	**2000-2012**
National, farm labour all crops	4.61	4.47	4.54	-3	2	-2
Rice	4.77	4.58	5.09	-4	11	7
Corn	4.21	4.03	3.91	-4	-3	-7
Coconut	4.37	4.56	4.32	4	-5	-1
Sugarcane	5.39	4.95	4.38	-8	-11	-19
Central Luzon (rice bowl) rice labour	**1998/99**	**2007/08**	**2011/12**	**1998/99- 2007/08**	**2007/08-2011/12**	**1998/99-2011/12**
	8.83	9.00	8.20	2	-9	-7
Vietnam		**2005, 2009**	**2012**		**2005-2009, 2009-2012**	**2005-2012**
National, agriculture, forestry and fishing work, state sector		4.05, 6.29	8.63		55,37	113
Daily wage agricultural labourer 1993 = 1.45; 1998 = 2.13	**2002**					
	2.16					
Average income of wage worker in rural areas[c]		**2007, 2010**	**2012**		**2007-2010, 2010-2012**	**2007-2012**
		3.92,4.69	5.26		20, 12	34
Thailand	**2001**	**2007**	**2013**	**2001-2007**	**2007-2013**	**2001-2013**

	US$ real daily wages (constant 2010[a])			Change in wages (%)		
Average daily wages	**Early 2000s**	**Mid-2000s**	**2010s**	**Early 2000s-mid-2000s**	**Mid-2000s-2010s**	**Early 2000s- 2010s**
National, skilled agriculture and fishing workers	4.02	5.36	6.81	33	27	69
Burma/Myanmar	**1998**	**2004**		**1998-2004**		
Ayeyarwardy, rice labour	1.55	2.26		45		
Republic of Korea	**2000**	**2006**		**2000-2006**		
National, field crop worker	41.21	56.20		36		
National, dairy product processor	**1996**	**2001**	**2006**	**1996-2001**	**2001-2006**	**1996-2006**
	39.12	44.52	51.03	14	15	30
Malaysia		**2010**	**2012**		**2010-2012**	
National, agriculture sector		10.82	11.75		9	
Nepal	**1995/96**	**2003/04**	**2010/11**	**1995/96-2003/04**	**2003/04-2010/11**	**1995/96-2010/11**
National, agriculture sector	1.39	1.73	2.22	24	29	60
Sri Lanka		**2007**	**2012**		**2007-2012**	
National, agriculture daily work		2.24	3.08		38	

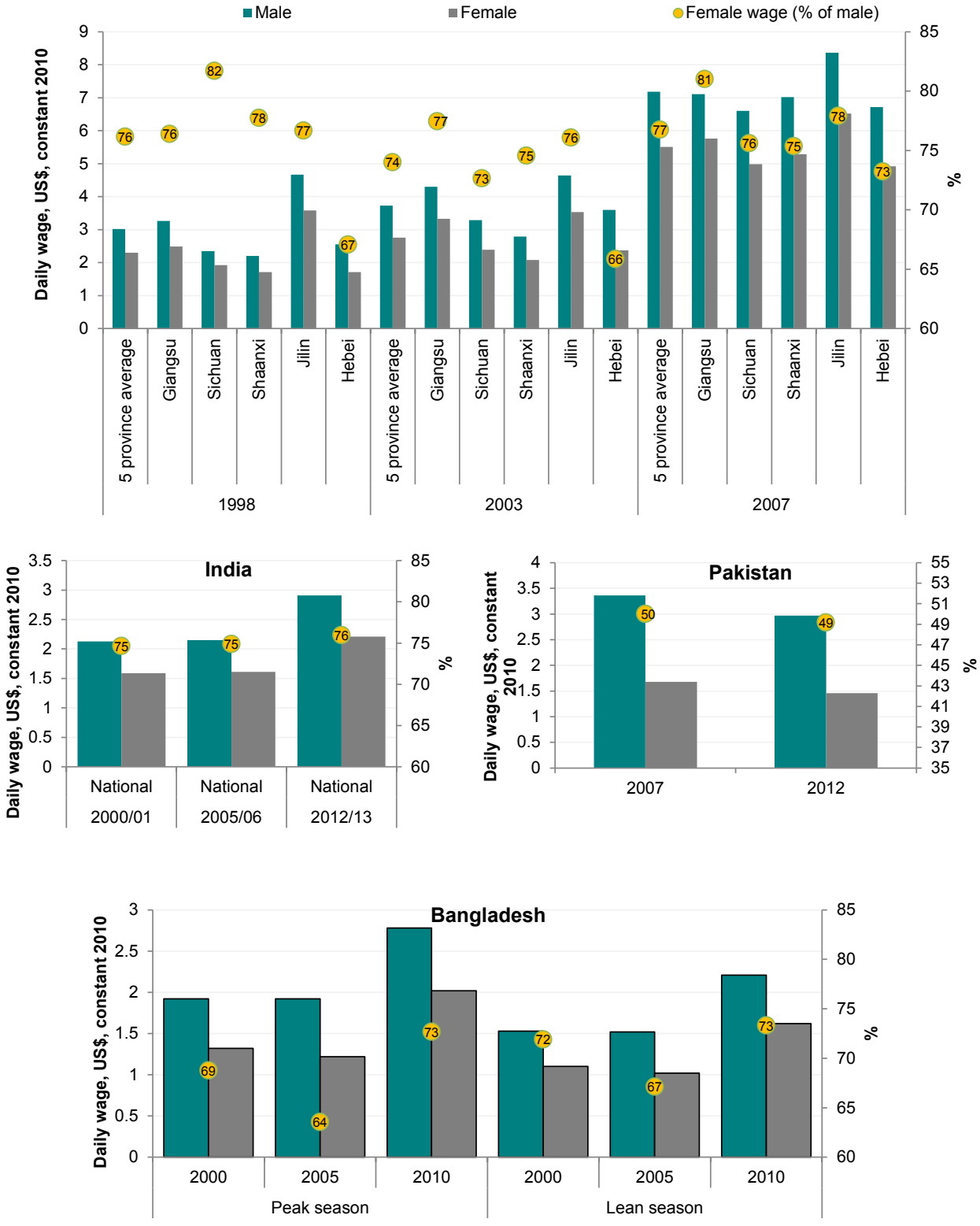
Notes: a) Values all in constant 2010 values except for Burma/Myanmar, which is in constant 2012 values, owing to currency valuation; b) 2013 data for Indonesian animal husbandry workers goes to June; c) data on average income of wage workers in rural areas — included to show the contrast between state sector wages and average worker incomes.
The three dates over which the data are presented vary by country depending on availability, hence the subheadings that list the actual dates. Where male or female is not specified, wages are not disaggregated by gender.
Source: Data from various sources, as described in Table 2. See Annex B for detailed sources and wages in local currency. (Annexes are availble for download at: www.odi.org/rural-wages).

Figure 11: Agricultural wage changes, 13 Asian countries, early and late 2000s, average annual rates



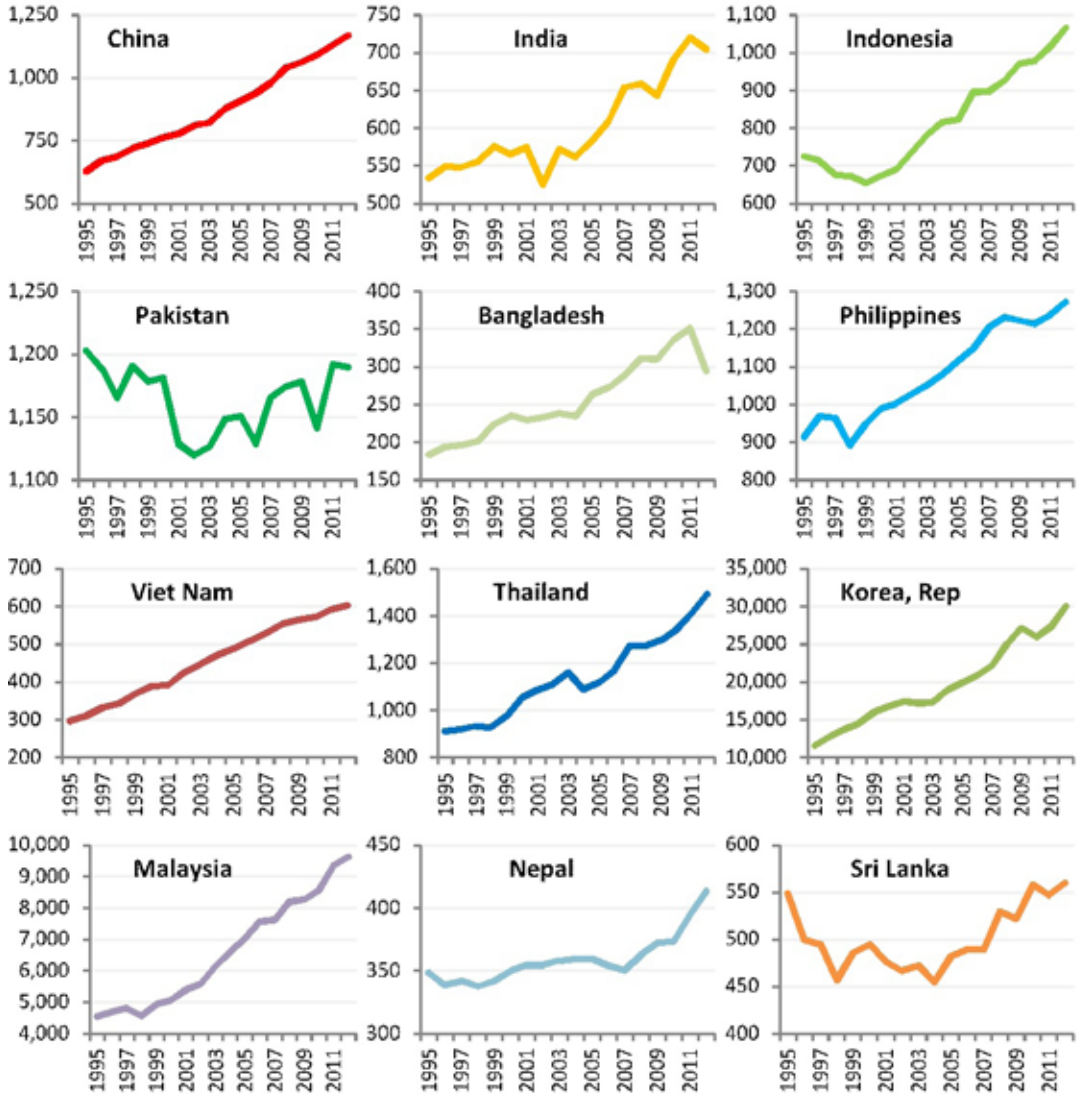
Source: Constructed from data in Table 5.

Figure 12: Changes in the gender wage gap in four Asian countries



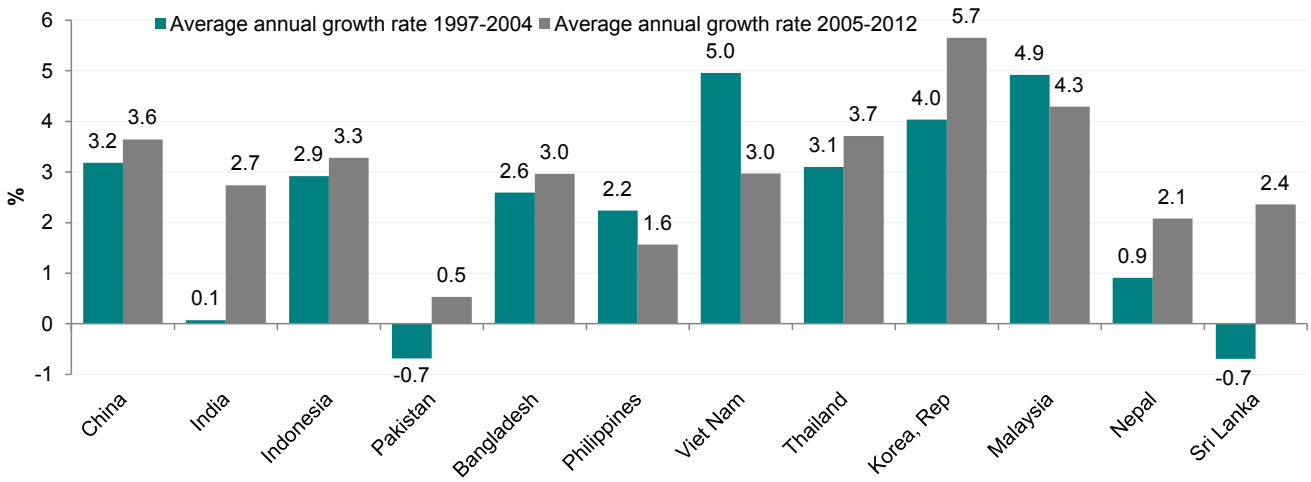
Source: Constructed from data in Table 5.

Figure 13: Changing agricultural labour productivity, 12 Asian countries, 1995-2012, gross value production per worker, constant US$ 2004/06



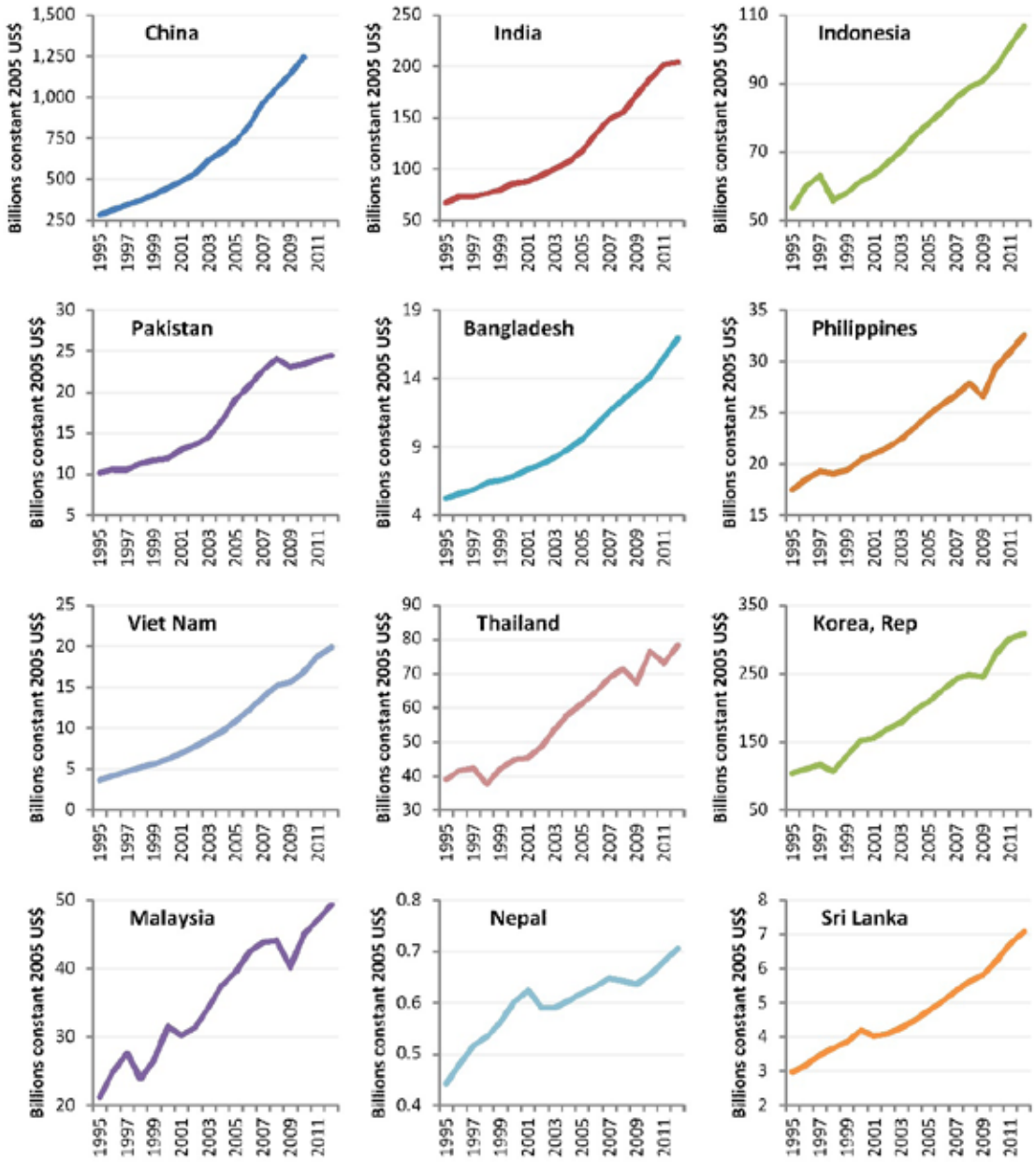
Source: Data from FAOSTAT.

Figure 14: Average annual growth rate of agricultural labour productivity, 12 Asian countries, 1997-2004 and 2005-2012



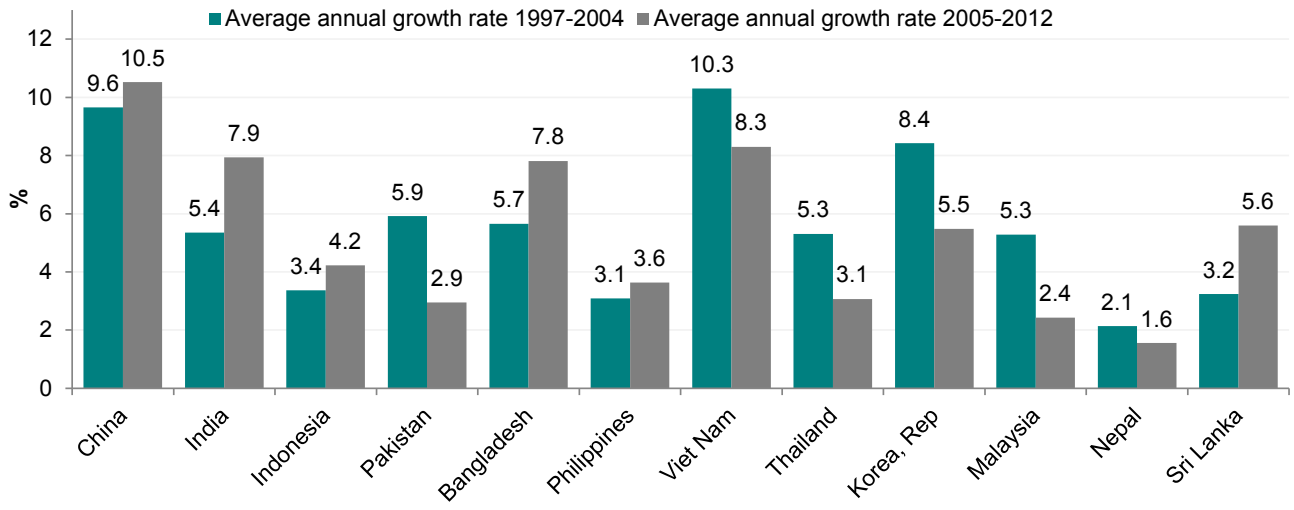
Source: Data from FAOSTAT, simple linear growth rates computed.

Figure 15: Changes in value of manufacturing across 12 Asian countries, 1995-2012



Note: Data for China stop at 2010.
Source: Data from World Bank WDI.

Figure 16: Average annual growth rate of manufacturing in 12 Asian countries, 1997-2004 and 2005-2012



Source: Data from World Bank WDI, simple linear growth rates computed.

availability for some countries. Average annual change in rural wages was the dependent variable, while independent variables were average annual changes in agricultural productivity, value of manufacturing and number of rural workers, as well as a dummy variable to differentiate between the early (1) and late 2000s (0).

Scatterplots show relations between the dependent and independent variables (see Figure 19). Visually, it seems the expected relations apply: increases in agricultural labour productivity and manufacturing output correspond with increases in rural wages, while increased numbers of rural workers correspond with slower growth of rural wages.

A correlation matrix of the variables (see Table 6) shows changes in rural wages do indeed correlate quite strongly with the independent variables, with coefficients in the range 0.60-0.66. The matrix, however, also shows the independent variables also correlate quite strongly. That changes to rural workforce should correlate inversely with agricultural labour productivity does not surprise: if there are fewer rural workers, one might expect mechanisation and other investments on the land might compensate. Similarly, the inverse correlation between rural workforce and growth of manufacturing output might be expected since some of the workers in manufacturing may come from rural areas. Neither of these relations, however, are automatic: the result of people leaving rural areas can be abandoned fields rather than higher labour productivity; for manufacturing, labour may come from urban rather than rural areas.

The correspondence between agricultural labour productivity and manufacturing output, however, was unexpected, since it is hard to see a direct causal relation. Presumably, factors that drive growth of manufacturing also encourage higher productivity of labour on farms – such as availability of capital and spread of technical knowledge, expertise and skills.

The correlation matrix hints at some positive development processes in Asia, in which vigorous growth of manufacturing draws labour from rural areas, while farmers then use machinery and intensify use of other inputs to compensate for lost labour and hence raise output per agricultural worker.

Regression to explain changes in rural wages

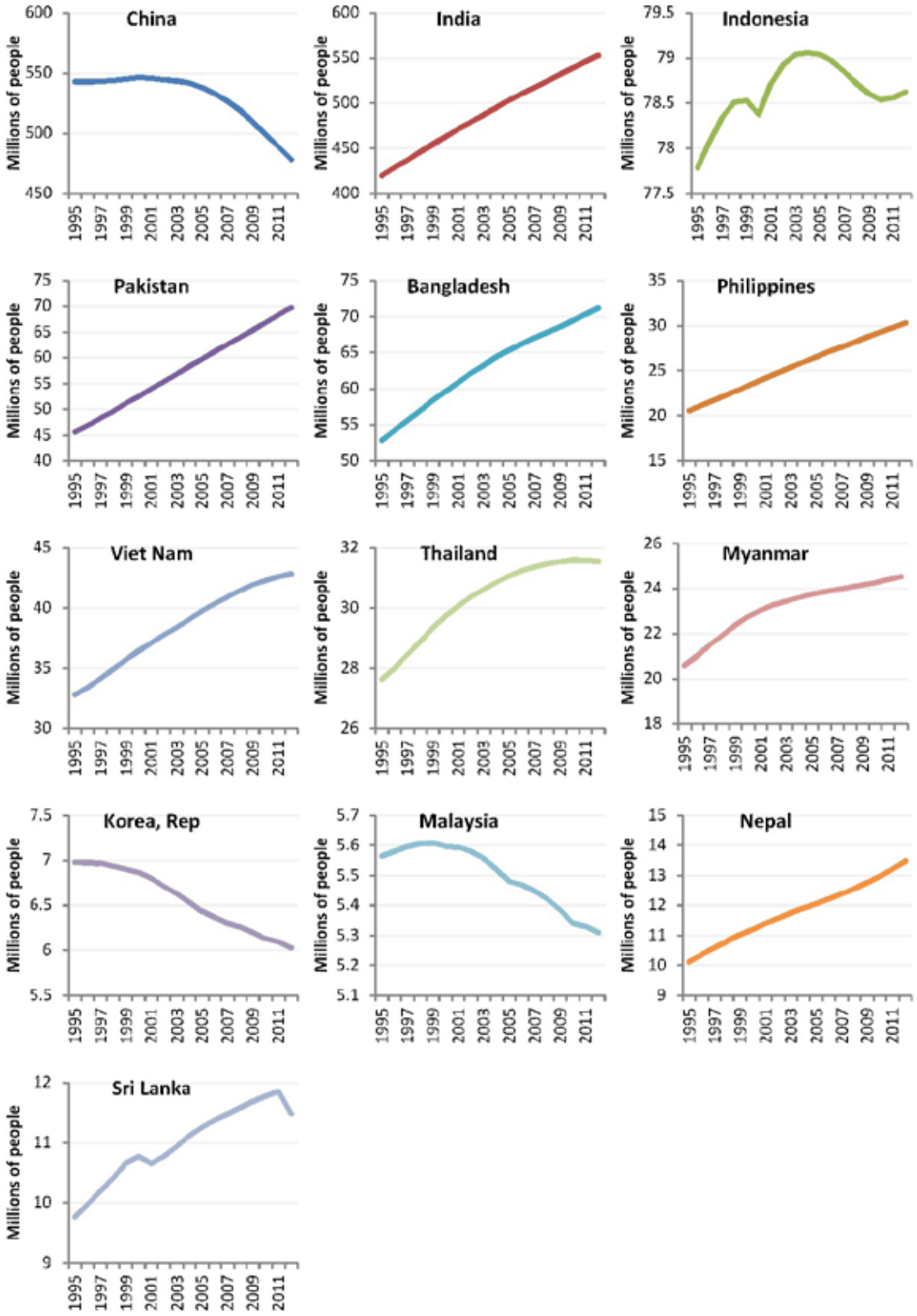
Results of the regression proved highly significant (Anova F test 99% significant) (see Table 7), with a high adjusted R-square, indicating the independent variables could explain almost two-thirds of the variation in changes in rural wages. Given the lack of degrees of freedom for the regression, this is a pleasing result.

The coefficients on the explanatory variables also carry the expected signs. That on **agricultural labour productivity** is positive, but not significant in the presence of other variables. The **value of manufacturing**, in contrast, has a large and significant positive coefficient. The coefficient on rural workers is strongly negative and significant, while the coefficient on the **time dummy** is a small negative, and also significant.

The strongest driver of changes to rural wages turns out to be number of rural workers, a function of population growth in rural areas less net migration from rural to urban areas. This is an intriguing result, since it begs the question of whether the variations in growth of the rural workforce results primarily from the demography of rural fertility and life expectancy, or whether out-migration from rural areas plays a significant role. Because of a lack of readily available data, we cannot address this question now.[12] Change in rural workers seems to be the variable that most sharply differentiates the sample countries.

Growth of manufacturing output is the next strongest driver of rural wages. The most likely causal link is that

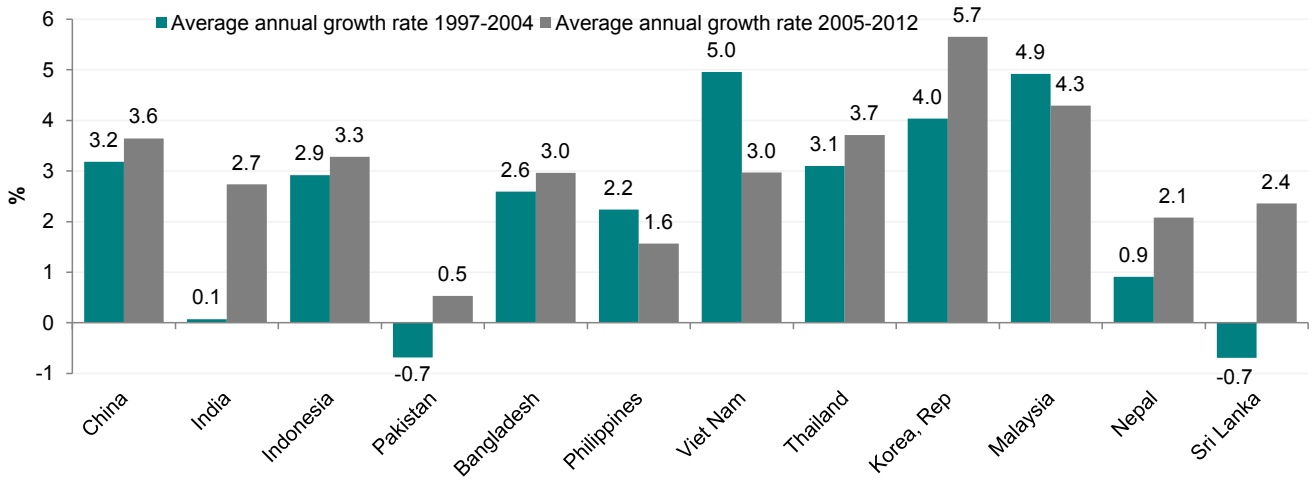
Figure 17: Changing rural working population, 12 Asian countries, 1995-2012



Source: Data from World Bank WDI

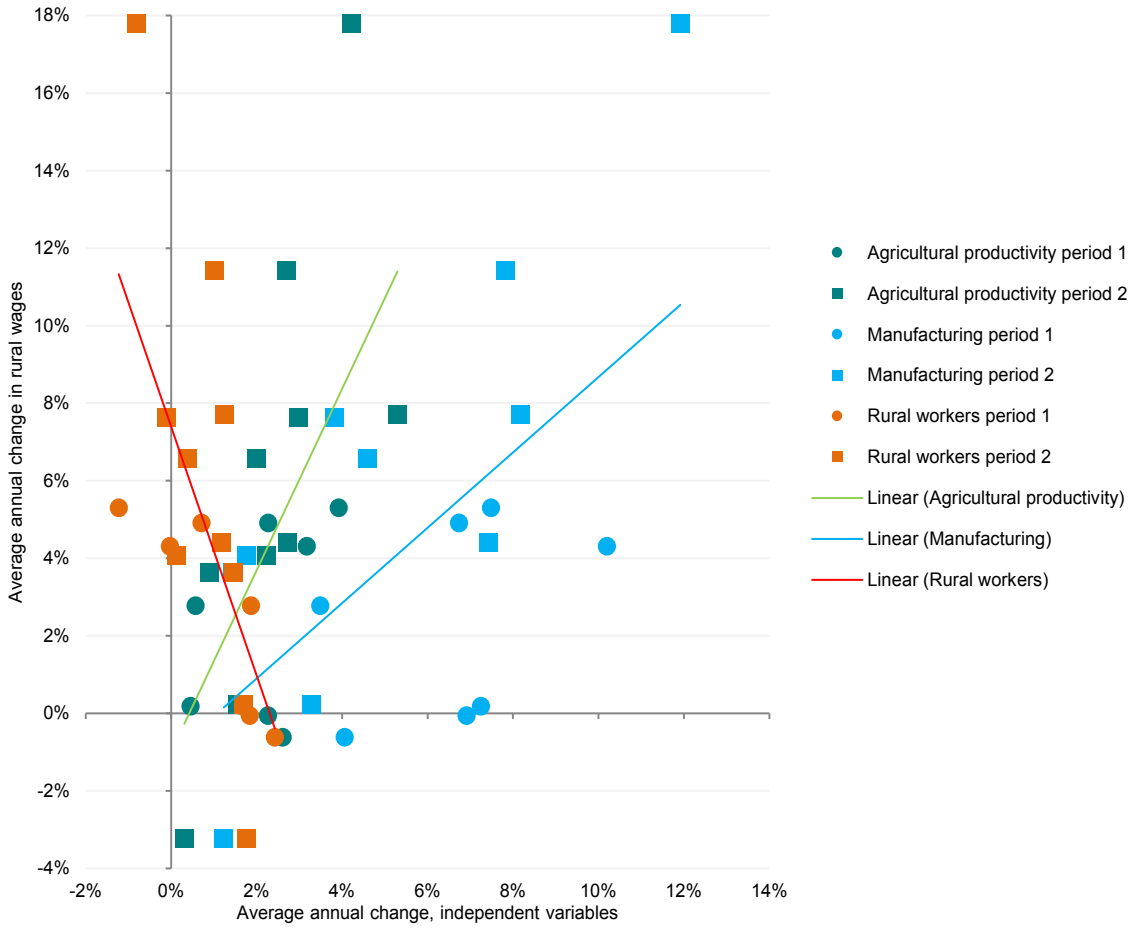
12 Data might be found by looking at individual country census data, and if necessary constructing demographic models. A preliminary look at fertility rates shows some striking reductions in fertility since 1970: all countries have seen have large reductions, although some started the reductions earlier than South Asia.

Figure 18: Average annual growth rate of rural working population in 13 Asian countries, 1997-2004 and 2005-2012



Source: Data from World Bank WDI, simple linear growth rates computed.

Figure 19: Changes in rural wages compared with those for agricultural labour productivity, manufacturing and rural workers over two periods



Source: Constructed from various sources, see Tables 2 and 3 for details.

higher wages in manufacturing draw workers from farms to factories and thereby drive up rural wages.

Changes to agricultural labour productivity would be the next strongest influence, but the result is insignificant. This could be because there are too few observations to confirm the expected relation, or it may be that, after accounting for the effects of the two previous variables, it adds little to explain changes in rural wages.

Lastly, the dummy for the first half of the 2000s is both significant and negative, although the value of the coefficient is small. Presumably, it picks out the influence of some omitted variable, or else the influences modelled on rural wages have intensified since the mid-2000s. Given how small the coefficient is compared with those on the other explanatories, whatever the dummy represents is not that important.

Overall, it seems the model supports initial hypotheses about the factors explaining changes in rural wages. The main qualification is that the pull of manufacturing outperforms that of higher agricultural productivity, and by some considerable margin.

Table 6: Correlation matrix between variables

	Agricultural labour productivity	Manufacturing	Rural workers
Rural wage	0.65	0.6	-0.66
Agricultural labour productivity	1.00	0.65	-0.56
Manufacturing		1.00	-0.44
Rural workers			1.00

Table 7: Multivariate regression of changes in rural wages

Dependent: change in rural wages	Coef.	Std. err.	T.stat.	P>|t|	95% conf. interval	
Agricultural output per worker	.194	.844	0.23	0.822	-1.65	2.03
Value manufacturing	.808	.363	2.23	0.046	0.17	1.599
Rural population 15-64	-1.754	.909	-1.92	0.079	-3.72	.235
Dummy for period	-.045	.017	-2.68	0.020	-.081	-.008
Constant	.028	.025	1.15	0.271	-.025	.082

Note: F(4,12) = 7.95, Prob > F = 0.0023; R-squared = 0.7260, Adj R-squared = 0.6347.
Source: Regression analysis in STATA.

5. Conclusions and implications

5.1 Discussion of findings

The results from this study broadly confirm insights from the literature and hence our expectations. In sum:

- In most countries of Asia, rural wages rose during the 2000s. Even so, typical rural wages remain low, at levels that would barely allow households that depend on labouring for incomes to escape ($2 a day) poverty.
- In some countries, including Bangladesh, China and India, increases in rural wages accelerated in the second half of the decade. Wage increases slowed only for Thailand and Vietnam, and for some although not all wage series for the Philippines.
- It seems changes in rural wages are associated inversely with changes in rural working population, and directly with growth of manufacturing. Changes in agricultural labour productivity may be associated with higher wages, but the estimate proved insignificant and low in the presence of these two main drivers. A small but significant time shifter suggests wages grew faster in the second half of the 2000s, independently of change in other variables.

Changes in rural working population may be the single most powerful driver, but, since migration is incorporated within the variable, it is not a purely exogenous driver. As manufacturing grows, it is expected that some of the factory workers will be recruited from the countryside so the migration component is linked to manufacturing. It is not surprising, then, that growth of manufacturing appears as the next most powerful influence on agricultural wages.

Hence, the analysis supports ideas about the pull of manufacturing on rural wages, but also suggests demography plays a significant role. Indeed, when the explanatory variables considered here are examined – see Section 4.1 – the largest differences across countries arise in the rural working population, with a sharp distinction between those countries where the rural workforce is now shrinking and those where it continues to increase. Countries of East Asia belong to the former group and those of South Asia to the latter, with countries in Southeast Asia falling in either.

This broadly supports the literature that reports the same pull of manufacturing as driving up rural wages. Demography features less in the literature, except for China, where the effects of the One Child Policy have aroused keen interest.

5.2 Implications

Will rural wages in Asia continue to increase in the future?

Demography clearly matters. Fertility rates have fallen dramatically across Asia since the early 1960s. In 1960, rates were high, with country rates packed in a band between 5.5 and just over 7 children on average to women in their reproductive life. By 2012, the band ran from 1.2 to 3.3, with several countries including China below the rate of 2.1 needed to sustain population in the long term. Most of the transition in fertility rates took place between the early 1970s and late 1990s. For those countries that made the transition later, it is to be expected that the effect of those falling fertility rates will work their way through in the second half of the 2010s, since the impact on the working-age population will be felt 15 years or more after the reduction in fertility. It is thus highly likely that, even for countries that still have growing rural workforces, growth rates will slow and sooner or later turn negative.

The rate of future growth of manufacturing may be more difficult to foresee, although it is hard to imagine that manufacturing will cease to grow in the near future. Any slowdown in growth of manufacturing may be compensated for by increases in services in urban areas.

If the two main drivers of rising rural wages are likely to continue their recent trends, it seems that rural wages can be expected to rise in the future. The implications of recent increases and those likely to come could have profound implications for poverty, for agriculture and food prices and for manufacturing.

Rising rural wages will put a floor to low rural incomes – at least for those able to work – and, indeed, probably to incomes throughout the economy, since rural wages have tended to mark the lowest returns to labour on offer. Hence, rising rural wages should greatly reduce poverty for most households that have working members. Most of the poor will then be those living in households that lack members earning, where there are only the old, infants, the chronically sick and the badly disabled.

Although rural wages rose in most countries throughout the 2000s, and often probably for some time before that, levels remain low in most countries. It will take some time more before they reach a level – perhaps US$10 a day[13] – that lifts a typical working household comfortably out of poverty.

Rising rural wages will push up costs of production in agriculture – already increased by the effect of higher oil prices seen since 2007 – and spur on mechanisation for those tasks where machinery is cheaper than the increased cost of manual operations. As machines replace labour, the advantage of small-scale farms in labour supervision will weaken, so a consequence may be an increase in farm sizes (Otsuka et al., 2014).

But the larger effect will be on **food prices**. Asian food prices will rise, limited to some extent by the possible lower cost of imports from the world market – moderated by the willingness of governments to allow imports of cheap food that might threaten farmers' incomes. Rising food prices threaten access of those on low incomes to

13 Assume one dependant for every worker. Assume rural labour can get work for 250 days a year. $10 a day in wages then equates to just over US$3 a day income per person.

food. The question then is the extent to which higher rural wages more than offset this effect. Given that even those on low incomes do not spend all their incomes on food – 70% at most – then the wages effect should outweigh that of higher food costs.

Perhaps the **most intriguing implication is for manufacturing**. Until recently, most manufacturers in Asia have been able to recruit unskilled labour from rural areas at low cost, given low rural wages. But, as rural wages rise, so it is likely manufacturing wages will have to increase to recruit new workers. This effect is already being seen strongly in China, where both phenomena are linked to a national workforce that is now shrinking every year. Manufacturers have two options as this takes place: to mechanise and thereby economise on labour; or to relocate to regions and countries with lower labour costs. Given the scale of its manufacturing, China's decisions will be critical. If the most common answer is relocation, then it is likely that plants in coastal China will move inland to less prosperous areas with lower wages, but also relocate outside of China. Neighbouring countries in Asia with low wages may be the first to benefit from this, with Bangladesh, Burma/Myanmar, Cambodia and Vietnam clear candidates.

There is, however, a further prospect: that of companies moving to Africa in search of lower wages. The World Bank reports Ethiopian factory wages for unskilled labour as one quarter those of Chinese wages. Logistics costs are higher, but overall costs are lower. Outside Addis Ababa, the first pioneer wave of relocated Chinese plants can be seen. Now these have broken the ice, how many more will follow? Lin (2014, in Wonacott, 2014) speculated that 85 million factory jobs could leave China in the coming years. If half of those came to Africa, it would transform a continent where there is a surge in youth entering the labour market. Of course, relocation to Africa will only happen if roads, power supplies and ports are adequate and if there is political stability,

Africa's economic underperformance has since the 1970s been far greater in manufacturing than in farming. Renewed growth of manufacturing in Africa led by Asian industrialists promises prosperous urbanisation with vibrant markets for those farmers staying on the land. This would be welcome news all round, including for agriculture.

References

Ara, A. (2014) 'BD Workers Not Getting Due Salary in Malaysia'. The Financial Express Bangladesh, 12 May, http://www.thefinancialexpress-bd.com/2014/05/12/33553

Arias-Vazquez, F.J., Lee, J.N. and Newhouse, D. (2013) 'The Role of Sectoral Growth Patterns in Labor Market Development'. Background Paper for the World Development Report 2013.

Beltran, J.C., Pannell, D.J. and Doole, G.J. (2011) 'Economic Impacts of High Labour Cost and Herbicide Resistance for the Management of Annual Barnyardgrass (Echinochloa crus-galli) in Rice Production in the Philippines'. Working Paper 1116. Perth: University of Western Australia

Berg, E., Bhattacharyya, S., Durgam, R. and Ramachandra, M. (2012) 'Can Rural Public Works Affect Agricultural Wages? Evidence from India'. Working Paper WPS/2012-05. Oxford: CSAE.

Bhalla, S., Karan, A.K. and Shobha, T. (2004) 'Rural Casual Labourers, Wages and Poverty: 1983 to 1999–2000'. Manchester: CPRC.

Bloomberg News (2013) 'Foxconn Plant in Peanut Field Shows Labor Eroding China Edge', 26 March, http://www.bloomberg.com/news/2013-03-26/foxconn-plant-in-peanut-field-shows-labor-eroding-china-s-edge.html

Carsten, P and Temphairojana, P. (2013) 'Thailand's Boom: To the Northeast the Spoils'. Reuters, 15 June, http://www.reuters.com/article/2013/06/16/thailand-northeast-idUSL3N0DJ2N820130616

Choudhury, C. (2014.) 'India's Economy Leaves Job Growth in the Dust'. Bloomberg View, 4 March, http://www.bloombergview.com/articles/2013-03-14/india-s-economy-leaves-job-growth-in-the-dust

Das, M. and N'Diaye, P. (2013) 'Chronicle of a Decline Foretold: Has China Reached the Lewis Turning Point?' Working Paper WP/13/26. Washington, DC: IMF.

Dasgupta, S. and Kim, K.B. (2011) 'Coordinated Macroeconomic, Employment and Social Protection Policies in Asia and the Pacific'. Asia-Pacific Working Paper Series. Geneva: ILO.

Datt, G. and Ravallion, M. (1998) 'Farm Productivity and Rural Poverty in India'. Journal of Development Studies 34(4): 62-85.

Dawn.com (2014) 'Over Half of Pakistan Lives under Poverty Line: Dar', 3 June, http://www.dawn.com/news/1110248/over-half-of-pakistan-lives-under-poverty-line-dar

Del Carpio, X., Messina, J. and Sanz-de-Galdeano, A. (2014) 'Minimum Wage: Does It Improve Welfare in Thailand?' IZA Discussion Paper 7911. Bonn: Institute for the Study of Labor.

Drysdale, P. (2014) 'China's labour shortage and the pace and structure of growth.' East Asia Forum. http://www.eastasiaforum.org/2014/06/16/chinas-labour-shortage-and-the-pace-and-structure-of-growth/

Fields, G.S. (2004) 'Dualism in the Labor Market: A Perspective on the Lewis Model After Half a Century'. The Manchester School 72(6): 724-735.

Gulati, A., Surbhi, J. and Satija, N. (2013) 'Rising Farm Wages in India: The "Pull" and "Push" Factors. New Delhi: Commission for Agricultural Costs and Prices, Ministry of Agriculture.

Harahap, F. and Barichello, R. (2013) 'Determinants of Rural Wage Rates in Java: How to Reduce Rural Poverty'. Presentation to Agricultural and Resource Economics, UC-Davis, 31 October.

Harahap, F. and Barichello, R. (2014) 'How to Reduce Rural Poverty: Determinants of Java's Agricultural Wage Rates'. Asian Development Bank Seminar.

Herr, H. and Kazandziska, M. (2011) 'Principles of Minimum Wage Policy – Economics, Institutions and Recommendations'. Working Paper No. 11. Geneva: ILO.

Ho, Y.-M. (1972) 'Development with Surplus Population – the Case of Taiwan: A Critique of the Classical Two-Sector Model, a la Lewis'. Economic Development and Cultural Change 20(2); 210-234.

Hossain, A.A. (2008) 'Rural Labour Market Developments, Agricultural Productivity, and Real Wages in Bangladesh, 1950-2006'. The Pakistan Development Review 47(1): 89-114.

Hossain, M., Sen, B. and Sawada, Y. (2013). 'Jobs, Growth and Development: Making of the "Other" Bangladesh'. Background Paper for the World Development Report 2013.

Htike, Z. (2014) 'Farmers Ponder Future as Labour Flees'. Myanmar Times, 26 May, http://www.mmtimes.com/index.php/business/10445-farmers-ponder-future-as-labour-flees.html

Jacoby, H.G. (2013) 'Food Prices, Wages, and Welfare in Rural India'. Policy Research Working Paper 6412. Washington DC: World Bank.

Jorgenson, D.W. (1967) 'Surplus Agricultural Labour and the Development of a Dual Economy'. Oxford Economic Papers 19(3): 288-312.

Knight, J.; Y. Zeng & Z. Liang, (2013) 'China's declining working-age population' East Asia Forum. http://www.eastasiaforum.org/2013/04/19/chinas-declining-working-age-population/

Krishnan, U. (2013) 'India's Rural Silent Revolution Spurs Spending'. Bloomberg News, 23 September, http://www.bloomberg.com/news/2013-09-22/india-s-rural-silent-revolution-spurs-spending-in-boon-for-singh.html
Lau, K. & S. Green (2013), 'China's rising wages in quest for rural workers reach a critical milestone' The Nation. http://www.nationmultimedia.com/business/Chinas-rising-wages-in-quest-for-rural-workers-rea-30207052.html
Leung, S. (2011) 'Indonesia, Bangladesh "Winners" as China Costs Rise, KPMG Says'. Bloomberg News, 15 September, http://www.bloomberg.com/news/2011-09-15/indonesia-bangladesh-winners-as-china-costs-rise-kpmg-says.html
Lewis, W.A. (1954) 'Economic Development with Unlimited Supplies of Labor'. Manchester School 22(2) 139-191, reprinted in A.N. Agarwala and S.P. Singh (1958) (eds) The Economics of Underdevelopment. New York: Oxford University Press.
Li, Q., Huang, J., Luo, R. and Liu, C. (2013), China's Labor Transition and the Future of China's Rural Wages and Employment. China & World Economy, 21: 4–24. doi: 10.1111/j.1749-124X.2013.12019.x
Meng, X. (2013) 'What Worker Shortage? The Real Story of China's Migrants' Blog. http://blogs.wsj.com/chinarealtime/2013/01/04/what-worker-shortage-the-real-story-of-chinas-migrants/
Narayanamoorthy, A. and Bhattarai, M. (2013) 'Rural Employment Scheme and Agricultural Wage Rate Nexus: An Analysis across States'. Agricultural Economics Research Review 26: 149-163.
Narayanamoorthy, A. and Bhattarai, M. (2013) 'Rural Employment Scheme and Agricultural Wage Rate Nexus: An Analysis across States'. Agricultural Economics Research Review 26: 149-163.
Nguyen, D.K. (2006) 'Effects of Rice Prices on Agricultural Wage Rates in Vietnam'. MSc Thesis.
Oman Tribune (2014) 'Rising Unemployment, Population Threaten Country's Economic Outlook', 4 June, http://www.omantribune.com/index.php?page=news&id=169035&heading=Pakistan
Otsuka, Keijiro, Yanyan Liu, and Futoshi Yamauchi, 2014 (forthcoming), 'The Future of Small Farms in Asia', Paper [Draft] for Future Agricultures Consortium.
Oostendorp, R. (2012) 'The Occupational Wages around the World (OWW) Database: Update for 1983-2008)'. Background Paper for the World Development Report 2013.
Palmer-Jones, R. and Parikh, A. (1998) 'The Determination of Agricultural Wage Rates in Bangladesh'. Journal of Agricultural Economics 49(1): 111-133.
Raghu, A. (2014) 'Labour Crunch Hurts Malaysian Palm Oil Growers as Indonesians Stay Home'. Reuters, 27 April, http://www.reuters.com/article/2014/04/27/us-palmoil-labour-idUSBREA3Q0P320140427
Ranis, G.(2012) 'Labor Surplus revisited'. Economic Growth Centre Discussion Paper No. 1016. Yale University.
Reyes, C. & A. Tabuga (2011) 'Poverty and growth in the Philippines'. East Asia Forum. http://www.eastasiaforum.org/2011/09/06/poverty-and-growth-in-the-philippines/
Selva Maheshwari, M. and Gangwar, L.S. (2011) 'Impact of Rural Development Scheme on Availability of Agricultural Labour – A Study of Dairy Farmers in Thanjavur District of Tamil Nadu'. Agricultural Economics Research Review 24: 409-414.
Thai PBS (2014) '89 Myanmar Workers Return from Malaysia after Brawl', Thai PBS, 9 January, http://englishnews.thaipbs.or.th/89-myanmar-workers-return-malaysia-brawl/
Thomas, J.J. (2012) 'India's Labour Market during the 2000s: Surveying the Changes'. Special Article. Economic and Political Weekly 47(51).
UNDESA (UN Department of Economic and Social Affairs) (2005) 'World Population Prospects: The 2005 Revision'. New York: Population Division, UNDESA.
UNDESA (UN Department of Economic and Social Affairs) (2006) 'World Population Prospects: The 2006 Revision'. New York: Population Division, UNDESA.
Usami, Y. (2012) 'Recent Trends in Wage Rates in Rural India: An Update.' Review of Agrarian Studies
Winters, P., de la O, A.P., Quiñones, E.J., Hertz, T., Davis, B., Zezza, A., Covarrubias, K. and Stamoulis, K. (2008) 'Rural Wage Employment in Developing Countries'. Rome: FAO.
Wonacott, P. (2014) 'China Inc. Moves Factory Floor to Africa. Rise Wages at Home Spur Makers of Shoes, TVs, Cars to Expand on the Continent'. Wall Street Journal, 14 May.
Yamauchi, F. (2014) 'Roads, Labor Markets and Returns to Human Capital: Evidence from Rural Indonesia'. Forthcoming Working Paper. Washington, DC: World Bank.
Yamauchi, F., Muto, M., Chowdhury, S. and Dewina, R. (2011) 'Are Schooling and Roads Complementary? Evidence from Income Dynamics in Rural Indonesia'. World Development 39: 2232-2244.
Zahid, S.H. (2014) 'Is RMG Becoming Unattractive to Rural women Workforce?' The Financial Express Bangladesh 19 May.
Zhang, X., Yang, J. and Wang, S. (2010) 'China Has Reached the Lewis Turning Point'. Discussion Paper 977. Washington, DC: IFPRI.
Zhang, X., Rashid, S., Ahmad, K., Mueller, V., Lee, H.L., Lemma, S., Belal, S. and Ahmed, A. (2013) 'Rising Wages in Bangladesh'. Discussion Paper 01249. Washington, DC: IFPRI.

Zhang, Y. (2011) 'The Impact of China's 12th Five-Year Plan'. East Asia Forum, 24 April, http://www.eastasiaforum.org/2011/04/24/the-impact-of-china-s-12th-five-year-plan/

Zheng, L. (2013). 'China Rural-Income Gains Aid Shift Toward Consumption'. Bloomberg News. http://www.bloomberg.com/news/2013-01-29/china-rural-income-gains-aid-shift-toward-consumption.html

Zhu, A. and Cai, W. (2012) 'The Lewis Turning Point in China and its Impacts on the World Economy'. Working Paper 1. Brussels: AUGUR.

ODI is the UK's leading independent think tank on international development and humanitarian issues.

Readers are encouraged to reproduce material from ODI Reports for their own publications, as long as they are not being sold commercially. As copyright holder, ODI requests due acknowledgement and a copy of the publication. For online use, we ask readers to link to the original resource on the ODI website. The views presented in this paper are those of the author(s) and do not necessarily represent the views of ODI.
© Overseas Development Institute 2014. This work is licensed under a Creative Commons Attribution-NonCommercial Licence (CC BY-NC 3.0).
ISSN: 2052-7209

All ODI Reports are available from www.odi.org

Cover photo: © World Bank Photo Collection: Rice fields in Mai Chau, Vietnam

Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ
Tel +44 (0)20 7922 0300
Fax +44 (0)20 7922 0399

www.odi.org

This material has been funded by UK aid from the UK Government, however the views expressed do not necessarily reflect the UK Government's official policies.