



**Impact of changing work  
Uma Rani patterns on income inequality**

---

The *International Institute for Labour Studies* was established in 1960 as an autonomous facility of the International Labour Organization (ILO). Its mandate is to promote policy research and public discussion on issues of concern to the ILO and its constituents — government, business and labour.

The *Discussion Paper Series* presents the preliminary results of research undertaken by or for the IILS. The documents are issued with a view to eliciting reactions and comments before they are published in their final form.

---



**Impact of changing work  
Uma Rani patterns on income inequality**

International Institute for Labour Studies  
Geneva

---

Copyright © International Labour Organization (International Institute for Labour Studies) 2008.

Short excerpts from this publication may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to the Editor, International Institute for Labour Studies, P.O. Box 6, CH-1211 Geneva 22 (Switzerland).

---

ISBN Print: 978-92-9014-886-9

Web/pdf: 978-92-9014-883-8

*First published 2008*

---

The responsibility for opinions expressed in this paper rests solely with its author, and its publication does not constitute an endorsement by the International Institute for Labour Studies of the opinions expressed.

Requests for this publication should be sent to: ILS Publications, International Institute for Labour Studies, P.O. Box 6, CH-1211 Geneva 22 (Switzerland).

---

## TABLE OF CONTENTS

Preface.....	v
1. Introduction.....	1
2. Trends in non-standard employment.....	1
3. Wage differentials between standard and non-standard work.....	8
4. Income inequality in emerging economies.....	12
4.1 Inequality Decompositions: Within and Between Groups.....	15
4.2 Regression based Decomposition.....	16
5. Conclusion.....	20
References.....	22

## LIST OF FIGURES

Figure 1: Incidence of part-time employment, advanced economies, 1991 and 2006.....	2
Figure 2: Incidence of temporary employment, advanced economies, 1991 and 2006.....	3
Figure 3: Share of self-employment, advanced economies, 1991 and 2006.....	3
Figure 4: Incidence of part-time employment, transition economies, 1991 and 2006.....	4
Figure 5: Incidence of temporary employment, transition economies, 1991 and 2006.....	4
Figure 6: Share of self-employment, transition economies, 1991 and 2006.....	5
Figure 7: Informal employment in Asian countries.....	6
Figure 8: Informal employment in African economies.....	6
Figure 9: Informal employment in Latin American countries.....	7
Figure 10: Changes in gini index and non-standard work, 1990s-2000s.....	8
Figure 11: Hourly wages of fixed term jobs as a ratio of hourly wages of permanent jobs, Industry, 2002.....	9
Figure 12: Hourly wages of fixed term jobs as a ratio of hourly wages of permanent jobs, Services, 2002.....	9
Figure 13: Hourly wage differentials between informal and formal sector jobs.....	10
Figure 14: Hourly wage differentials between non-contractual and contractual jobs (Private sector).....	10
Figure 15: Income gap between formal sector and informal sector households in Latin America.....	11

## LIST OF TABLES

Table 1: Output and Employment Growth in the Emerging Economies, 1994-2005.....	13
Table 2: Income Inequality Trends in China and India.....	14
Table 3: Income Ratios across Groups, India.....	14
Table 4: Share of Between Group Inequality to Total Income Inequality, Urban China.....	15

Table 5: Share of Between Group Inequality to Total Inequality, Rural and Urban India .....	15
Table 6: Contribution of various household characteristics to income inequality, Urban China.....	18
Table 7a: Contribution of various household characteristics to income inequality and to the change in inequality 1993-2004, Urban India.....	19
Table 7b: Contribution of various household characteristics to income inequality and to the change in inequality 1993-2004, Rural India.....	20

## **LIST OF APPENDIX TABLES**

Appendix 1: Data Sources and Methodology.....	26
Data Sources.....	26
Methodology.....	27
Appendix 2: Tables.....	28
Table A1: Average Monthly Earnings of Workers, Urban China.....	28
Table A2: Average Monthly Incomes and Growth Rates, Urban India.....	29
Table A3: Average Monthly Incomes and Growth Rates, Rural India.....	30
Table A4: Expenditure equations for 2001 and 2005, Urban China .....	31
Table A5: Expenditure equations for 1983, 1993-94 and 2004-05, Urban India.....	32
Table A6: Expenditure equations for 1983, 1993-94, and 2004-05, Rural India .....	33



## Preface

This paper has been prepared as background to the new Institute's publication entitled *World of Work Report*, which this year focuses on the issue of income inequality. The Report shows that, in the majority of countries, the incomes of richer households have increased relative to those of their middle- and low-income counterparts.

This can be good for the economy. Indeed, it is crucial to reward work effort, talent and innovation – key engines of economic growth and wealth creation.

However, there are instances where income inequality reaches excessive levels, in that it erodes social stability. Growing perceptions that income inequalities are too high may weaken political support for pro-growth policies. Too much income inequality can also be conducive to unstable economic growth.

The Report examines a number of factors which may be conducive to excessive income inequality, such as financial globalization and steep increases in executive pay, disconnected from firm performance. The role of domestic factors is also analyzed, including i) emerging patterns of employer-employee bargaining; ii) the trend increase in non-standard forms of employment; and iii) the ability of the tax and transfer systems to redistribute the gains from economic growth.

This paper looks at how changing employment patterns might explain the rise in income inequality observed in the majority of countries. In particular, it presents a detailed decomposition of income inequalities in China and India, based on state-of-the-arts statistical techniques. It is an important research that helps understand income developments in the two countries.

Raymond Torres  
Director,  
International Institute for Labour Studies



## **1. Introduction**

The changing world of work is characterized by intense competition and constant change, in which both employers and employees face increasing risk and uncertainty. In order to retain markets, producers have to be more responsive to consumer demand through constant innovation and attractive prices. The labour market process associated with globalization are pressures for cost cutting (wage and non-wage labour costs), which induces shifts in workforce composition, labour utilization and labour demand. This process may also involve sharing economic risks and costs between firms and workers through subcontracting and other arrangements (Reich 2001). A consequence of this process is the proliferation of non-standard forms of employment – temporary, part-time or informal employment.

These new forms of employment that are created could be a major source of income inequality, as wage differentials between standard and non-standard forms of employment widen. The income inequalities could thus arise either due to structural changes in the labour market or due to access to certain segments of the labour market. Structural change through industrial restructuring could be an important contribution to the growth of non-standard work. Similarly, as only few good quality jobs are created, the majority of the workforce with low human capital endowments or due to rationing of good jobs is sorted into non-standard work without any social protection. This could lead to labour market segmentation and such employments by their very nature exacerbate existing income inequality.

This paper makes a modest attempt to assess the extent to which changes in employment patterns are associated with rising income inequality. Section 1 presents the trends in non-standard employment and examines the potential linkages between non-standard employment and income inequality. Section 2 examines the wage differentials between standard and non-standard jobs and considers the implications in terms of income inequality. Section 3 explores the factors that contribute to income inequality in emerging economies, China and India and examines whether the changing employment patterns explain wider income inequality.

## **2. Trends in non-standard employment**

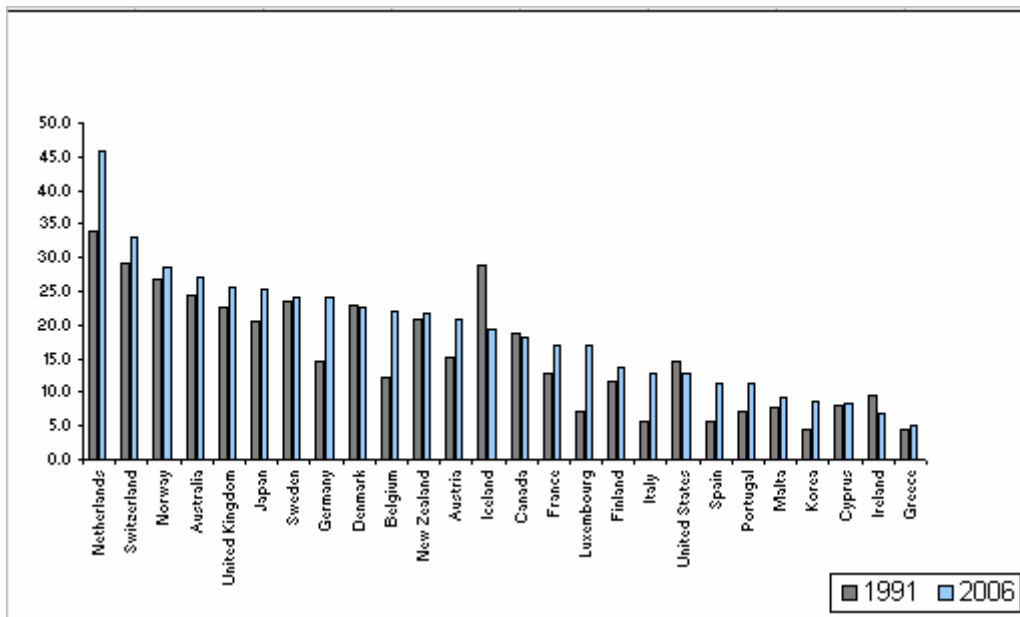
Non-standard employment refers to employment other than permanent salaried employment and comprises part-time or temporary work, self-employment and informal employment. Part-time work comprises of workers working less than 35 hours of work, although the average number of hours worked vary between countries. Temporary work comprises employment on fixed-term contracts, agency work and seasonal work. Informal employment comprises of employment in small firms (with fewer than five workers), self-employed (other than administrative, professional and technical workers), unpaid family workers, domestic workers and salaried employment without a proper work contract in the formal sector. This section looks at trends in such forms of employment, particularly part-time or temporary work and self-employment in advanced and transition economies and informal employment in developing economies.

Non-standard employment is not a new phenomenon in Europe and other advanced economies (Ricca 1982), and were considered to be an alternative for the rising unemployment in Europe. In advanced economies, standard employment – full-time, permanent work arrangements – has long been regarded as the norm and the framework within which labour law, collective bargaining and social security systems developed. The past two decades, however,

have witnessed a rise in non-standard work in the advanced economies. However, the extent and quality of such non-standard work that has developed differs across countries owing to the structuring influence of the specific national institutional context<sup>1</sup>.

The share of part-time work in advanced economies has risen over the past decade by 4 percentage points. In 2006, part-time work accounted for about 20.8 per cent of total employment (for the age group 15-64 years) compared to 16.6 per cent in 1996. The share of part-time work varies significantly across the advanced economies (figure 1), and it exceeds 20 per cent in 12 of the advanced economies in 2006. The share of part-time work continues to be high in Netherlands, followed by Switzerland, Norway, UK and Japan.

**Figure 1: Incidence of part-time employment, advanced economies, 1991 and 2006**



Source: ILS estimates based on Eurostat Labour Force Survey and OECD

Some of the major characteristics of part-time work include, first, high incidence of female part-time work indicating a stronger gender dimension with nearly one in three women having a part-time job. The share of female part-time work is high in most of the advanced economies, and in 17 of these countries female part-time employment exceeds 25 per cent. Second, the most significant expansion in part-time work has taken place in service industries and it now forms a significant component of total employment in all industries except, mining and utilities. The proportion of part-time work is highest in the service sector for both males and females, followed by manufacturing sector.

Third, about 22 per cent of part-time work is involuntary, 40 per cent is due to “family or personal responsibilities”, and about one-third is voluntary. There are substantial variations across countries and gender, indicating the different institutional settings that exist in different

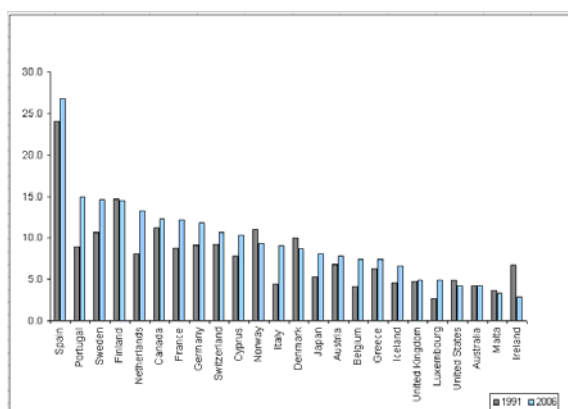
<sup>1</sup> These countries have varied welfare state and regulatory designs, as well as diverse labour market structures. From the perspective of the well-known “three worlds of welfare capitalism” (see Gøsta Esping-Andersen 1990), most of the countries fall under either “liberal” welfare states (as in Canada, the UK, and the US), or “conservative” welfare states (as in Germany and Italy), and or “social democratic” welfare state (as in Sweden). The policy frameworks vary across these welfare state models and they tend to have distinct labour market trajectories.

countries. The share of voluntary part-time work was much higher among women, which could be a choice to maintain a balance between work and family welfare in the absence of any institutional support. The share of involuntary part-time work increased for men in Germany, Spain, Italy and Japan, indicating that it is not always a choice but a refuge from unemployment.

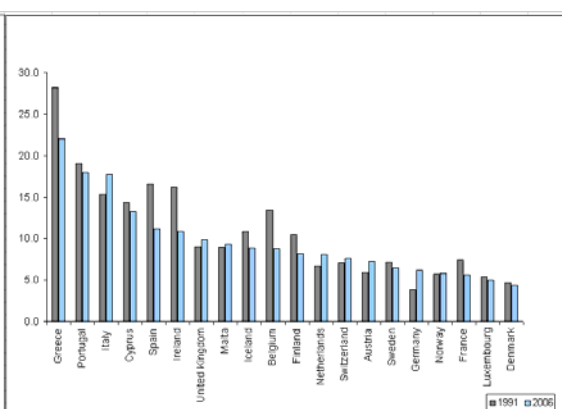
This trend could reflect demand-side developments, such as the need for greater flexibility in the workforce, or product market and demand uncertainty or to act as a cushion against economic fluctuations (Lee 1996; Cappelli et al 1997). The supply side factors such as the desire to strike a better balance between work and family life, have also been influential in the rise in part-time work (Fagan and Ward 2003). Institutional settings also play an important role (Hoffman and Walwei, 2003) and in countries where institutional support in the form of child care and separate taxation exists, the part time work actually declined, for example Denmark, Ireland, Sweden, Norway and Iceland.

The share of temporary employment has also tended to increase over the past two decades by almost 3 percentage points (figure 2). In 2006, temporary work accounted for about 15 per cent of total employment (for the age group 15-64 years) compared to 11.7 per cent in 1996. The share of temporary work was higher among women than men in most of the advanced economies. The share of temporary work increased across all age groups, and the highest share (35 per cent) being for the age group 15-24 years. Temporary work is higher in services sector (70 per cent) and lower in manufacturing sector (13 per cent). In the services sector, the proportion of temporary work is high in trade, real estate and other services (education, health and social work). The share of temporary work varies considerably across countries. This could be due to the level of institutional protection in standard jobs, along with the degree of coordinated centralization of the collective bargaining system (Polavieja 2006). The share of temporary work exceeds 10 per cent in 10 of the advanced economies in 2006, and it is very high in Spain (24.6 per cent).

**Figure 2: Incidence of temporary employment, advanced economies, 1991 and 2006**



**Figure 3: Share of self-employment, advanced economies, 1991 and 2006**

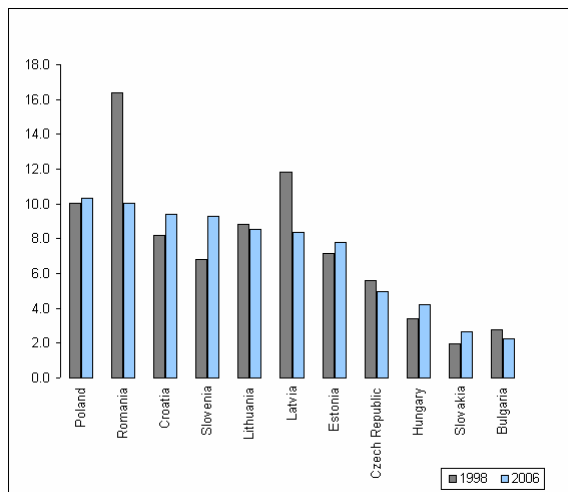


Source: IILS estimates based on Eurostat Labour Force Survey and OECD

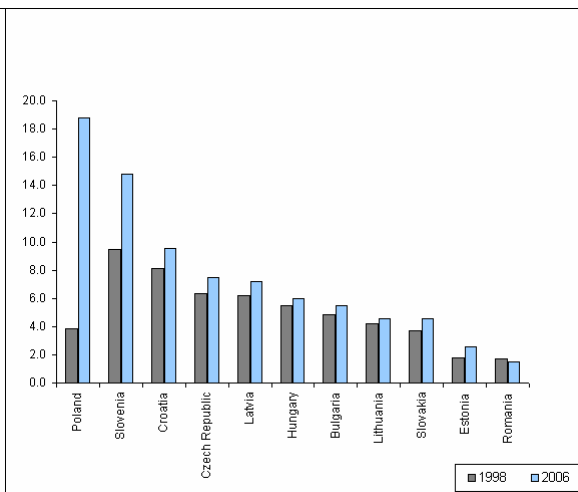
This trend is largely because firms needed to be able to respond to rapid changes in supply and demand conditions in the face of stiffer product-market competition (Kalleberg 2000; Dorantes 2000). In addition, new technology has made it possible to fragment the production process and outsource certain tasks, a trend that has been associated with less stable employment. It is also argued that badly designed employment regulations make employers reluctant to recruit under permanent contracts (Atkinson, Morris and Williams 1999; Davis-

Blake and Uzzi 1993). In some of the countries, the strong restriction on dismissal of regular workers or terminating contracts of indefinite duration (Fagan and Ward 2003) has led to a rise in temporary employment.

**Figure 4: Incidence of part-time employment, transition economies, 1991 and 2006**



**Figure 5: Incidence of temporary employment, transition economies, 1991 and 2006**



Source: ILS estimates based on Eurostat Labour Force Survey and OECD

The share of self-employment in total employment, by contrast declined in most of the advanced economies, except Germany, Italy, Netherlands, Austria and United Kingdom (figure 3). This was due to the huge decline in agricultural self-employment, and it was much more among men than women. However, most of these economies witnessed a marginal increase in non-agricultural self-employment. The existing literature suggests that the rise in self-employment in some of the countries could be varied and due to certain developments in the economy (Arum and Muller 2004; Lubert et al 2000). Some researchers have argued self-employment to be heterogeneous, having high job-creation potential, not only for the self-employed themselves but also for additional workers hired, and it is also at times state-sponsored to reduce unemployment (Bruderl and Preisendorfer 2000; Pfeiffer and Reize 2000). While, others have argued it to be associated with the growth of marginal and insecure work (Kalleberg 2000).

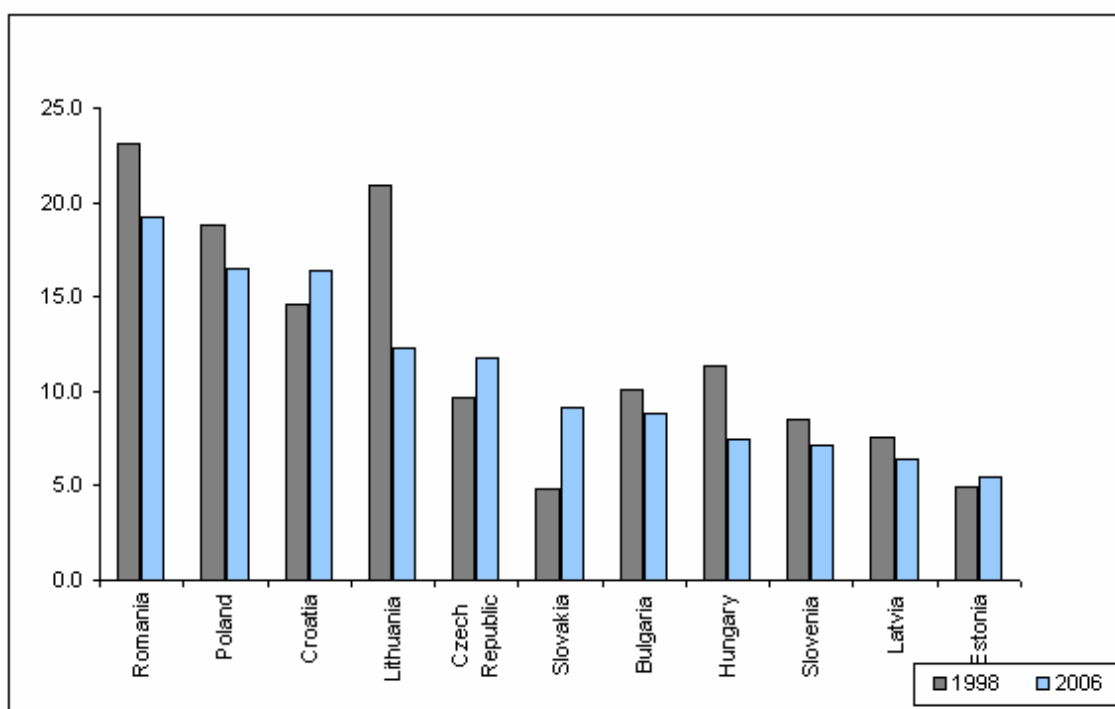
In transition economies, non-standard employment<sup>2</sup> has not shown a clear trend. The share of part-time work in total employment declined (figure 4) from 9.6 per cent in 1998 to 8 per cent in 2006. In contrast to advanced economies, the share of part-time work was less than 10 per cent in 2006. The country differences in the share of part-time work could be due to the various degrees of underemployment in each country (Cazes and Nesporova 2004). There is not such a strong gender dimension in part-time work as observed in advanced economies, as only one in ten women are engaged in part-time work. Part-time work enabled women to combine work with family responsibility, which was their primary responsibility (Riboud et al 2002). Part-time jobs are concentrated in agriculture and services sectors for both men and women. About 50 per cent

<sup>2</sup> The data for the transition economies are available on a continuous basis only from 1998, so the analysis is restricted to the short period 1998 to 2006.

of the part-time jobs in transition economies are voluntary and one-third of the jobs are involuntary. Involuntary part-time work is very high in Bulgaria, Romania, Latvia and Lithuania.

The share of temporary employment in total employment increased marginally in most countries, the exceptions being Romania (figure 5). There was not much difference across gender. There is a higher proportion of temporary work (24 per cent) among young people (aged 15-24 years). Such work is higher in services, manufacturing and construction sector. The share of temporary work was much lower, in contrast to advanced economies, which could be due to certain legislative rigidities or opposition from the trade unions (Cazes and Nesporova 2004). There has been a decline in the share of self-employment in total employment among both male and female workers (figure 6), the exceptions being Czech Republic, Slovakia and Croatia. The decline could be due persistent administrative and other barriers to small business development (Cazes and Nesporova 2004).

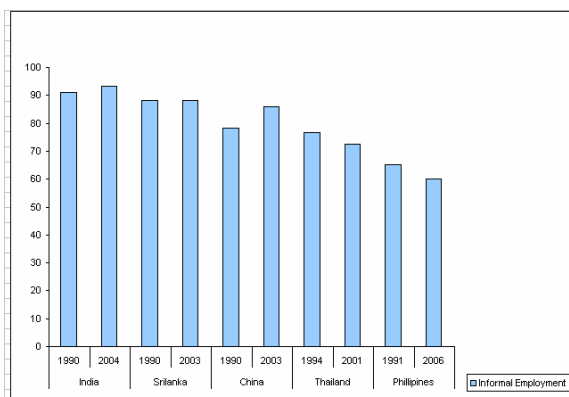
**Figure 6: Share of self-employment, transition economies, 1991 and 2006**



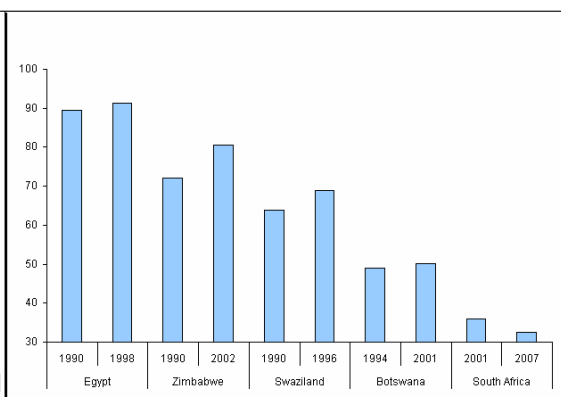
Source: ILS estimates based on Eurostat Labour Force Survey and OECD

In the developing economies, reliable data on informal employment is scarce, especially at the country level. Informal employment data are sometimes available for a single time period making comparisons over time difficult. In the Asian countries (China, India, Myanmar, SriLanka, Thailand and Philippines) for which, data are available the share of informal employment has increased, or at least, remained high (figure 7), the exceptions being, Thailand and Philippines. The increase in informal employment in India is largely due to the labour market reforms, where both public and private sector are being downsized.

**Figure 7: Informal employment in Asian countries**



**Figure 8: Informal employment in African economies**



Source: ILS estimates based on Ghose, Majid and Ernst, 2008, Appendix Table A4.1 and [www.adb.org/statistics](http://www.adb.org/statistics).

A large proportion of the workforce in Africa<sup>3</sup> is also engaged in informal employment, and the proportion ranges between 60 to 80 per cent. The trend is towards an increase in the share of informal employment, with the exception of South Africa (figure 8). In most of these economies, informal sector falls into two groups, one, income generation for survival and two, growth related enterprises. The rise in informal sector activity is argued to be due to the decline in the formal economy and promising areas of the informal sector and increased sub-contracting of work in the formal sector (Rogerson 1997). However, it is argued that most jobs in the informal sector have greater insecurity, low remuneration and lack of social security (Devey, Skinner and Valodia 2006; ILO 2002; van der Hoeven 2000).

In Latin America, informal employment has risen over the past decade, in most of the countries<sup>4</sup> (figure 9). The exceptions being Mexico, Argentina, Costa Rica, Uruguay and Chile, where there is a decline in both informal employment and informal sector<sup>5</sup>. The share of informal employment in Latin America ranged from 40 per cent in Chile to 80 per cent in Paraguay. Latin America, shows two opposing trends one where there is a decline in informal employment, which is largely due to the decline in small firms as a result of pension, labour and other legislative reforms, which has both increased the advantages for firms gaining formal status and raised the penalties of staying informal<sup>6</sup> (Saavedra and Chong 1999). The other, is that of increasing informal employment, which is largely due to growing proportions of new jobs being created in the formal sector, which is of a casual nature without proper work contracts. It is argued that the labour market reforms may have facilitated the use of temporary or fixed term

<sup>3</sup> Data on informal employment in African countries are very scarce. The only source is the household labour force surveys, which, where they exist at all, are carried out at irregular intervals.

<sup>4</sup> Data on informal employment in the Latin American countries for the initial period are not uniform. The initial year's taken for analysis is the following: Argentina 1996-98; Brazil, Mexico, Honduras and Venezuela 1995-97; Costa Rica and Panama 1991-93; Ecuador 1998-2000; and Paraguay 2001-03.

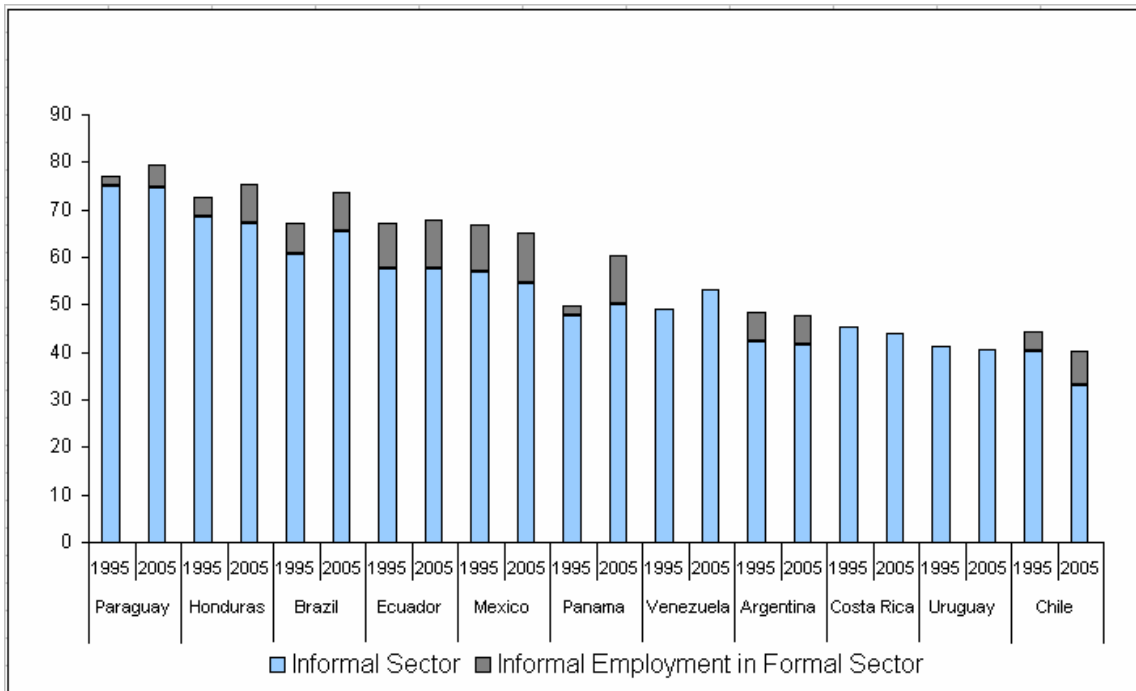
<sup>5</sup> "Informal sector" means employment in small firms (with fewer than five workers), self-employed (other than administrative, professional and technical workers), unpaid family workers and domestic workers.

<sup>6</sup> "The policies that affected the relative costs and benefits of entering or staying in the informal sector took many forms, such as binding minimum wage regulations, specific mandated benefits, forced savings schemes, extremely high hiring costs, job stability rules, and an array of other required administrative procedures and tax rules and regulations" (Saavedra and Chong 1999: 97).



contracts and subcontracting arrangements (Pianto and Pianto 2002). The contingent and informal wage and salary work arrangements provide firms with significant tax and dismissal cost advantages, as well as hiring flexibility, relative to permanent work arrangements (Dorantes 2005).

**Figure 9: Informal employment in Latin American countries**



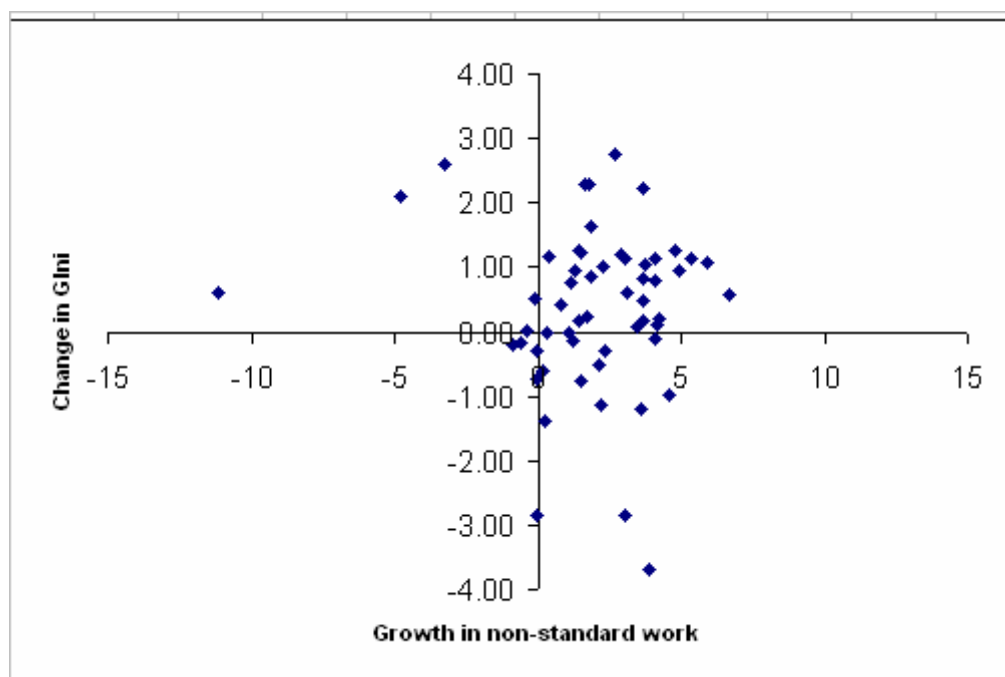
Note: Informal employment in the formal sector includes those workers who do not have a proper contract. Informal sector includes workers in small firms (less than five workers), self-employed (other than administrative, professional and technical workers), unpaid family workers and domestic workers.

Source: ILS estimates based on data processed by the ILO's Information System and Labour Analysis (SIAL) in Panama city

Income inequality, as measured using the Gini index, has risen in the majority of countries where data are available. It is not clear to what extent the rise in inequality is due to the increase in non-standard work. If changes in non-standard work are plotted against changes in income inequality over the past decade, we find that in majority of the countries (60 per cent) there is rise in non-standard work and rise in inequality, and in 10 per cent of the countries the reverse is true (figure 10). However, there is no link between the two in the remaining countries. In the transition economies Lithuania, Latvia and Romania inequality increased despite a decline in non-standard work, indicating that other institutional factors or transition-related factors<sup>7</sup> are responsible for the rise in inequality. There is also some evidence of the impact of non-labour earnings such as capital and property income having an influence on rising inequality (World Bank 2000: 147). Similarly, among the Latin American countries, like in Brazil, Paraguay, Panama, Chile and Mexico income inequality declined despite an increase in non-standard work.

<sup>7</sup> Mitra and Yemtsov (2006) argue that transition related factors, such as the evolution of the education premium, a bias in the investment climate against new private sector firms, regional impediments to mobility of goods and labour and technological changes could be reasons for the rise in inequality.

Figure 10: Changes in gini index and non-standard work, 1990s-2000s



Source: ILS estimates

### 3. Wage differentials between standard and non-standard work

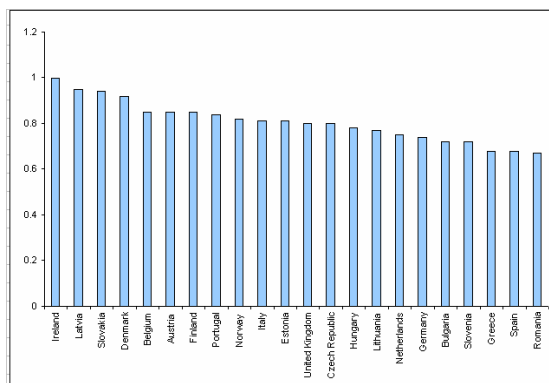
The earlier section showed a clear trend towards rising non-standard forms of work in advanced and developing economies, although the patterns differ significantly from country to country. The changing employment pattern has an effect on the distribution of household income<sup>8</sup> as there are wage differentials between standard and non-standard work. Non-standard work reduces employment security and wages and lowers the household income forcing other members from the household to enter the labour market. The increase in these forms of employment could represent a new source of inequality in many parts of the world.

It is difficult to empirically establish the relationship between widening inequality and wage differentials between standard and non-standard work due to lack of data<sup>9</sup>. According to the Structure of Earnings Survey 1995, the hourly earnings of part-time workers represent between around 55 and 90 percent of those of full-timers, depending on the country (OECD 1999: 23). In 2002, the wage gap further widened with non-standard work receiving less wages than standard work (figures 11 and 12). The only exception being Ireland, where, the two types of work are equally remunerated in both industrial and service sectors. The extreme cases are that of Spain, Greece and Germany where the wages of non-standard work is about 25 per cent less than the standard work in the industrial sector. In the services sector, the wage differentials are even higher, as in 9 of the advanced economies, non-standard workers receive 25 per cent less

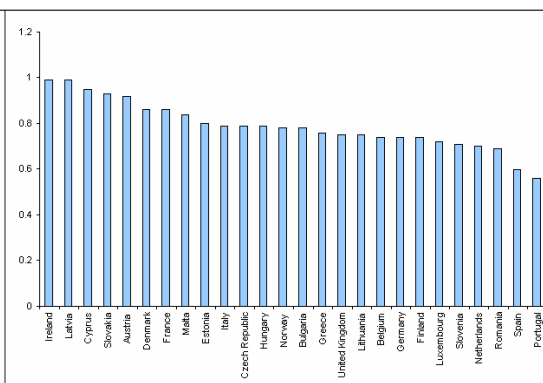
<sup>8</sup> The household income comprises of both labour income (earnings and social security benefits) and non-labour income (private and public transfers). Wage income represents a dominant share of household income and could be an important driver to inequality.

<sup>9</sup> The EUROSTAT has undertaken Structure of Earnings Survey, for the years 1995 and 2002. The Structure of Earnings Survey, 1995 provides median hourly earnings for part-time and full-time workers, and the data are obtained from employers. The Structure of Earnings Survey, 2002 provides mean hourly wage earnings for those with Indefinite Duration and those with Fixed term Contract. As the data collected for the two periods are different, it makes comparison difficult.

**Figure 11: Hourly wages of fixed term jobs as a ratio of hourly wages of permanent jobs, Industry, 2002**



**Figure 12: Hourly wages of fixed term jobs as a ratio of hourly wages of permanent jobs, Services, 2002**



Source: ILS estimates based on Structure of earnings Survey, 2002

than their counterparts in standard work. In Spain and Portugal the non-standard wages were 40 per cent less. In most of the transition economies, the non-standard work wages were 20 to 35 per cent less than that of the standard work wages in industry and service sector, the exceptions being Slovakia and Latvia.

Such comparisons need to be analyzed with caution: as fixed-term jobs may differ from permanent jobs in terms of sectoral allocation of the job, the seniority of the wage earner or skill intensity, and such differences can explain the wage gap. Even controlling for these factors, however, studies have found that fixed-term jobs pay less than permanent ones (Gash and McGinnity, 2005<sup>10</sup> and Mertens and McGinnity, 2005 for Germany; Jimeno and Toharia, 1993<sup>11</sup> and Bentolila and Dolado, 1994 for Spain). Bardasi and Gorniyk (2007) also found that women who work part-time earn considerably less than full-time workers, and the wage gap is statistically significant. The wage penalties were found to be largest in Italy and the US (22 per cent), followed by UK and Canada (12 to 15 per cent) and Germany (8 per cent). Sweden was an exception with women part-time workers earning slightly more (about 1 per cent) than full-time workers.

Tansel<sup>12</sup> (2000) indicated substantial earnings differences between the formal and informal sectors for men, but not so for women in Turkey. Mertens, Gash and McGinnity (2007) show that the fixed-term contracts pay a wage penalty irrespective of being a high or a low wage earner in Spain. In contrast, they show that in West Germany, the earnings of permanent and fixed-term workers are almost similar among high earners, while there are differentials among low earners.

However, there are mixed evidences whether these wage differentials and non-standard jobs lead to income inequality. Some studies have shown that as there is no upward mobility for those with non-standard jobs, the low wages and increased job insecurity lead to income inequality (Giasecke and Gross 2004; Blanchard and Landlier 2002). There is also evidence that where

<sup>10</sup> The study found temporary workers to earn 9 % less than the matched permanent workers in Germany.

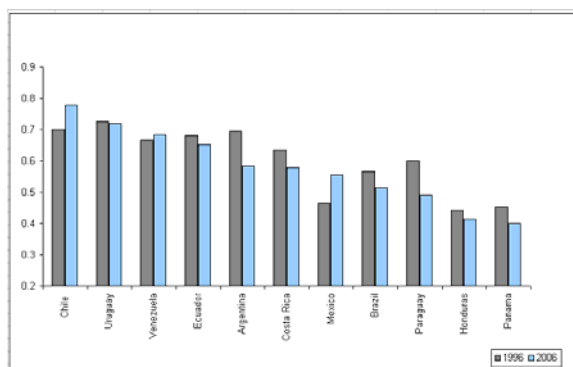
<sup>11</sup> The wage penalty associated with fixed-term work was estimated to be between 8 and 11 percent. relative to indefinite workers.

<sup>12</sup> The analysis was carried out using the 1994 Turkish Household Expenditure Survey, which defined uncovered wage earners and self-employed as part of the informal sector, while covered wage earners to be part of the formal sector.

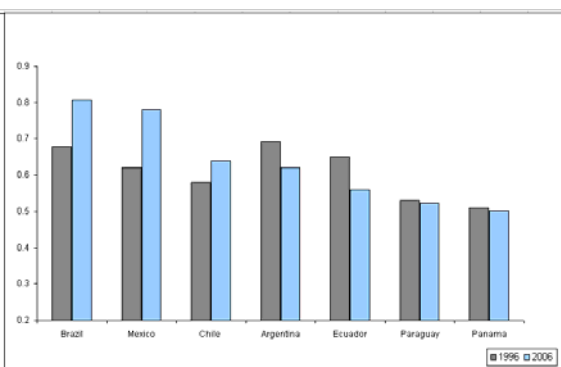
non-standard work was found to be the prime income source, as in Britain, it led to widening income inequality (Gregg and Wadsworth 1996). In Japan, the degree of income inequality was closely related to whether there were working wives or double earners within the household (Tachibanaki and Yagi 1992). On the contrary, it is argued that fixed-term jobs are stepping stones to permanent jobs and it provides job mobility, so this would not lead to increasing income inequality (Dorantes and Serrano-Padial 2007; Engellandt and Riphahn 2005 and Booth et al 2002). The transition rates of temporary workers to permanent work was found to be high in Germany and UK (Booth et al 2002 and Gash 2005) compared to France and the wage gap disappeared when past temporary workers obtain a permanent job. Dorantes and Serrano-Padial (2007) argue that fixed term workers through job mobility (switch jobs) are able to increase their wages by 4 per cent more than those with similar jobs with indefinite contracts.

There is also evidence from Latin America that informal sector jobs pay significantly less than formal ones (figure 13). The wage differentials between formal and informal sector jobs have widened in almost all the countries except Mexico and Chile over the past decade. The average wages in the formal sector are above average wages in the informal sector for most countries in the region. The wage earnings of the informal workers vary between 40 to 68 per cent of the earnings of the formal worker. In Panama and Honduras, workers in the informal sector receive only 40 per cent of the wages of the formal worker. Such low wages compels the informal sector worker either to increase the number of working hours or to get involved in multiple jobs to earn additional income.

**Figure 13: Hourly wage differentials between informal and formal sector jobs**



**Figure 14: Hourly wage differentials between non-contractual and contractual jobs (Private sector)**



Source: IILS estimates based on data processed by the ILO's Information System and Labour Analysis (SIAL) in Panama city

In Latin America, over the past decade, there was an increase in informal employment in the formal sector. These informal workers in the formal sector are also paid less compared to the formal counterparts (figure 14). The wage differentials between workers with an informal arrangement in the formal sector and their permanent counterparts has also widened in all countries, except Brazil, Mexico and Chile. The wage differentials between the workers in the formal and informal sector is found to be statistically significant, even after controlling for a number of personal and household characteristics (Funkhouser (1996) for the five Spanish-speaking Central American republics;

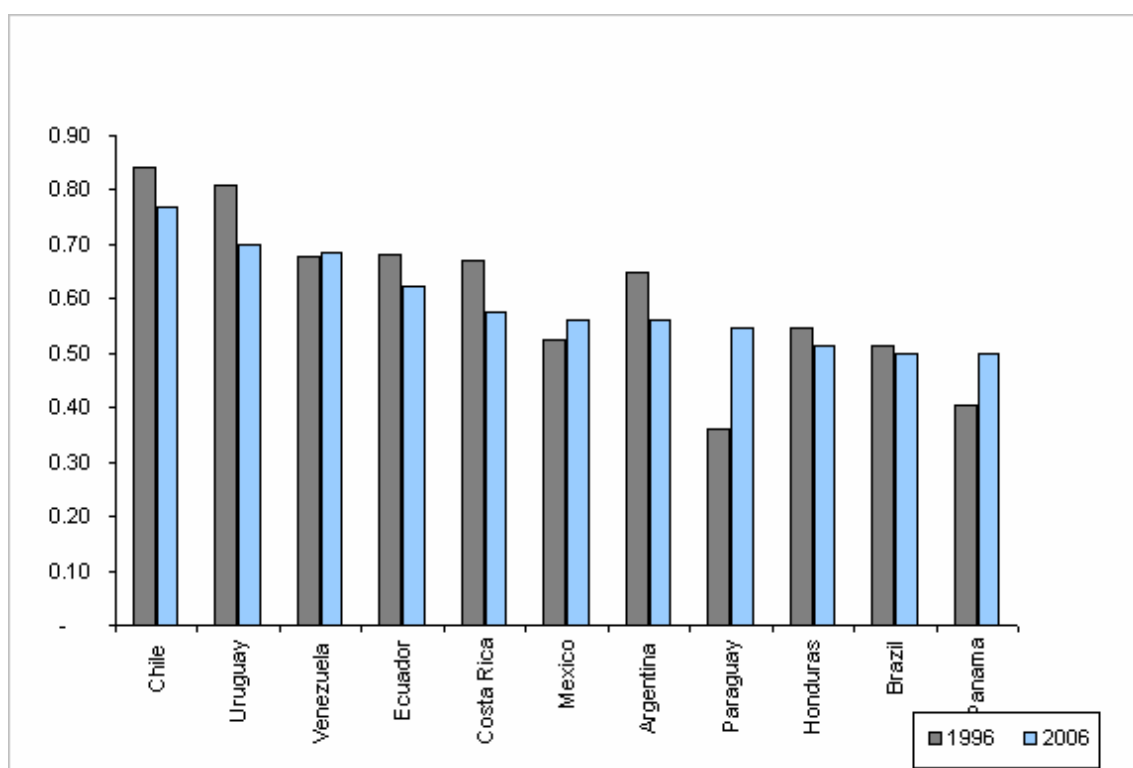
Marcouiller, Ruiz de Castilla and Woodruff (1997) found that there is significant wage premia associated with work in the formal sector in El Salvador and Peru, while in Mexico the premium is associated with informal work. Saavedra and Chong (1999) find that for Peru the earnings differentials between formal and informal self-employed workers are negligible, while the differentials persist between formal and informal salaried workers after controlling for other

factors. Gong and Soest (2002) find that the wage differentials between formal and informal sector workers are smaller for the lower educated and rise with increasing levels of education in Mexico. This finding is similar to that of Pianto and Pianto (2002) for Brazil, who suggest that differences in returns to attributes explain about 30 percent of the earning gaps at low quantiles, while at higher quantiles the differences are explained by individual characteristics.

The widening wage differentials among the different form of workers have an impact on household incomes, which lead to inequality. The total household income includes not only the wages of the main earner, but also earnings by other household members and other sources of income. In Latin America, the total income of a household where the main earner has a informal sector job is lower than the formal counterpart. The income differentials is also widening in most countries, over the past decade (figure 15). However, in some countries (Brazil, Panama and Honduras) the household income gap is narrower than the wage gap. This could indicate that households with low earnings probably have more members in the labour market or are engaged in multiple jobs or work more hours to increase their incomes. Funkhouser (1996) in his study demonstrates that in Guatemala, El Salvador and Honduras workers in the informal sector work more hours than their counterparts in formal sector to increase their incomes. This in some sense compensates for the low wages paid in the informal sector. This strategy helps them to increase their incomes and reduce income inequality.

The inequality level in most of the Latin American countries has been quite high at more than 50 per cent and these figures have been persistently high over the past decades. Almost all the countries that observed widening income differentials also observed an increase in income inequality. In Brazil, despite increasing wage differentials between formal and informal workers

**Figure 15: Income gap between formal sector and informal sector households in Latin America**



Source: ILS estimates based on data processed by the ILO's Information System and Labour Analysis (SIAL) in Panama city

and an increase in the share of informal employment, income inequality declined over the past decade. This could be due to the additional worker effect among the low income households, wherein more workers from the household enter the labour market and increase household incomes and reduce inequality. But it could also reflect state support in the form of social programs like cash transfers, public works and wage subsidies. Similarly, Chile was able to moderately reduce income inequality, despite widening income differentials. This could have been due to the decline in informal employment.

It has not been possible to gather comparable data on wages for Asian and African economies by employment status, except for India. The casual workers, who constitute a substantial share in the informal sector, receive lesser wages than the regular salaried workers. The casual workers received 44 per cent of the wages of regular salaried workers in 2004-05, as against 62 per cent in 1983, which shows that wage differential between these two types of workers has grown much wider over the past two decades. This would have a similar implication on household incomes as was observed in Latin America. There has been a rise in income inequality by 4 per cent in India over the past decade, and we would discuss the factors contributing to the rise in inequality in the next section. Evidence for South Africa shows that after controlling for the observable differences in human capital and job characteristics, the wages of the workers employed in the informal sector are 37 percent lower (Badaoui, Strobl and Walsh, 2007).

Empirical evidence for South Africa also shows that wage income is the primary cause of income inequality and that at least half of this 'wage inequality' was actually attributable to those households with no wage income or those with unemployed persons (Leibbrandt and Woolard 2001). They argue that the overall welfare can be improved, if households increase their human capital endowments through education and are able to forge and maintain linkages with the formal labour market.

However, there seems to be plausible options for reducing inequality through interventions in the labour market, if implemented effectively. First, having a legal minimum wage could be a possible option to reduce the wage differentials. There have been attempts to test this option in Costa Rica, where it was found that higher legal minimum wages raises the wages of the workers in informal sector and may actually work to reduce the wage differentials between the two types of work (Gindling and Terrell 2004). Second, non-standard jobs can actually help to reduce income inequality, if such employment is substituted for permanent workers at the top earnings quintiles. This was evident in the case of Chilean economy where they found that increased employment flexibility at the top earnings quintile actually lowered the ceiling of earnings distribution, reduced earnings dispersion and inequality for the period 1994 and 2000 (Dorantes 2005). Third, relates to the stringent rules for entering or staying in informal sector, which was applied in the case of Peru and it led to a decline in non-standard jobs (informal employment) (Saavedra and Chong 1999), and improved incomes and lowered inequality.

#### **4. Income inequality in emerging economies**

This section explores the factors that contribute to income inequality and whether the changing employment patterns can explain wider income inequality in the emerging economies India and China, which have registered very high growth in output over the past decade. There is a huge debate among researchers in these countries whether this growth has benefited only a few and led to increasing inequalities (Gustaffsson et al 2008; Dev and Ravi 2008; Sengupta et al 2008; and Bhaduri 2008).

However, this proposition has not been established and it is not clear whether the emerging economies are growing with increasing inequality or not? We address this question by looking at what the income data for these countries reveal about inequality. Whether inequality has been

growing? Whether this could be explained by the uneven effects of growth on employment and earnings? What are the main factors that contribute to explain the cause for declining or increasing inequality?

China witnessed a faster growth in output (9.7 per cent) compared to India (6.7 per cent) over the past decade (table 1). The acceleration in growth in China was fuelled by the industrial sector, while in India the growth impetus came from the services sector. However, employment growth was slower in China compared to India. This led to high growth in worker productivity in China, especially in the industrial sector (10 per cent). Services, is the only sector where work productivity grew at a similar rate in both China and India (Bosworth and Collins 2007). Most of the employment growth in China and India was generated as informal employment. The economic reforms<sup>13</sup> in India generated employment opportunities in low skilled construction and service sector, and also high skilled manufacturing and services sector<sup>14</sup>.

**Table 1: Output and Employment Growth in the Emerging Economies, 1994-2005**

Sector	India			China		
	Output	Employment	Output per worker	Output	Employment	Output per worker
Agriculture	2.2	0.7	1.5	3.7	-0.6	4.3
Industry	6.7	3.6	3.1	11.0	1.2	9.8
Services	9.1	3.7	5.4	9.8	4.7	5.1
<b>All</b>	<b>6.5</b>	<b>1.9</b>	<b>4.6</b>	<b>9.7</b>	<b>1.2</b>	<b>8.5</b>

Source: Compiled from Tables 1 and 2 in Bosworth and Collins (2007)

Both China and India have witnessed rising income inequality<sup>15</sup> along with rising growth over the past decade. The increase in inequality in urban China was about 3 per cent between 2001 and 2005 (table 2). In India, the overall increase in inequality was about 4 per cent over the past decade, after a period of stagnancy in the earlier decade. The level of inequality is much higher and increasing at the upper income brackets, and the differences are much more in urban areas than in rural areas. Income inequality is considerably low among the lower income brackets and in rural areas (table 2).

Inequality in rural India rose by 1 per cent over the past decade compared to 4 per cent in the urban areas. The marginal rise in inequality in rural India could be due to various government initiatives, like rural public works (Nayyar 2002), national rural employment guarantees scheme and huge infrastructure projects, which provide productive employment to the rural workforce. Rural inequality might have increased tremendously in the absence of such initiatives as agriculture has stagnated and there is considerable reduction in investments for irrigation projects and land development. However, these Ginis do not represent particularly high levels of inequality, especially when compared with other emerging economies like Brazil, where Gini coefficients are more than 50. However, this does not imply that inequality is not a concern in this region, and the increases in inequality have generated a huge debate within these economies.

The increasing inequality could also be due to the differential returns to labour across the various segments. In urban China, the earnings in some of the fast growing sectors like high skilled service sector (Telecommunications, banking and insurance, real estate) and the construction sector are comparatively very high, and the wage differentials are widening (refer appendix table A1). The wage differentials are very high between industrial sectors and regions (coastal and inland) in urban China.

<sup>13</sup> The new policy regime facilitated private investment and abandoned public sector monopoly in certain industries and brought about a more comprehensive trade liberalization.

<sup>14</sup> The policies facilitated huge investments in manufacturing sector to meet the demands in the construction sector, as there was a clear focus on urban infrastructure in the 1990s; and also in the services sector, especially IT.

<sup>15</sup> See Appendix 1 for data sources and methodology.

**Table 2: Income Inequality Trends in China and India**

	Gini	GE (0)	GE (1)	GE (2)
<b>Urban China</b>				
2001	0.366	0.231	0.263	0.522
2005	0.393	0.261	0.276	0.403
<b>Urban India</b>				
1983	0.339	0.189	0.215	0.344
1993-94	0.342	0.193	0.233	0.726
2004-05	0.378	0.236	0.289	0.828
<b>Rural India</b>				
1983	0.312	0.163	0.192	0.525
1993-94	0.285	0.136	0.170	0.428
2004-05	0.298	0.149	0.196	0.502

Source: ILS estimates based on computations prepared by Du Yang, Institute of Population and Labour Economics, Chinese Academy of Social Sciences, Beijing and data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India

In urban and rural India, also the incomes in the fast growing high-skilled service sectors are very high, and the income differentials between agriculture or construction and high-skilled service sector have grown much wider over the past decade (table 3). The incomes of the construction workers who constitute a substantial share in the urban informal sector are about 42 per cent of the incomes of the high-skilled services sector in 2004-05, as against 58 per cent over the past decade. Similarly, the income differentials between the casual worker and regular salaried worker widened much more in urban areas than in rural areas over the past decade.

In rural areas, the casual worker earned 65 per cent of the income of the regular salaried worker, as against 44 per cent in the urban areas. There are also huge income differentials across education groups in urban and rural India and these differentials are widening. The workers with primary education earn 45 per cent of the income of those with secondary education. Even at the higher education level, workers with secondary education earn only about 73 per cent of the income of those with above secondary education in urban areas (table 3), indicating the importance of education. So we find that income differentials are widening, especially across industry groups and regions in urban China and across employment status, education and industry groups in urban and rural India.

**Table 3: Income Ratios across Groups, India**

	Rural			Urban		
	1983	1993-94	2004-05	1983	1993-94	2004-05
<b>Employment Status</b>						
Self Employed to Salaried (Non Agriculture)	0.80	0.72	0.70	0.75	0.76	0.70
Casual Labour to Salaried (Non Agriculture)	0.73	0.63	0.58	0.62	0.52	0.44
<b>Industry Group</b>						
Agriculture to High Skilled Services	0.88	0.61	0.57	0.76	0.50	0.39
Manufacturing to High Skilled Services	0.87	0.68	0.76	0.85	0.70	0.72
Construction to High Skilled Services	0.94	0.63	0.56	0.81	0.58	0.42
<b>Education Group</b>						
Primary to Above Secondary Education	0.72	0.59	0.51	0.58	0.51	0.45
Secondary to Above Secondary Education	0.92	0.81	0.72	0.81	0.72	0.73

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India



However, the employment opportunities created in the high skilled services sector were not larger than the low skilled sectors, but the earnings were much higher which might have led to increasing inequality. This also brings out the point that it is not only the rich who have benefited the most from the growth process, but the poor have also benefited as their incomes are not stagnant as is widely believed. An analysis by quintiles very clearly shows that in both rural and urban areas the incomes of the bottom 20 per cent increased though at a slower rate than the top 20 per cent of the population (refer appendix tables A2-A3).

#### 4.1 Inequality Decompositions: Within and Between Groups<sup>16</sup>

The generalized entropy class of measures is decomposed into the inequality that exists within groups and between groups (tables 4 and 5). In urban China, when inequality is decomposed into within and between groups, inequality is much more within-group than between group (table 4). The largest share of between group inequalities occur when workers are partitioned on the basis of regions, industry groups and education groups. The share of between group inequalities across employment status has risen substantially across all the entropy measures by 2005.

**Table 4: Share of Between Group Inequality to Total Income Inequality, Urban China**

	2001			2005		
	GE (0)	GE (1)	GE (2)	GE (0)	GE (1)	GE (2)
Age	1.7	1.5	0.6	2.3	2.2	1.5
Gender	3.5	3.0	1.5	4.2	4.0	2.7
Employment Status	2.4	2.2	1.1	8.9	6.9	4.5
Industry	8.6	7.5	4.0	13.8	13.4	9.4
Education	12.2	11.0	5.9	12.6	12.3	8.4
Region	11.3	10.3	5.4	19.1	18.5	13.2

Source: ILS estimates based on computations prepared by Du Yang, Institute of Population and Labour Economics, Chinese Academy of Social Sciences, Beijing

**Table 5: Share of Between Group Inequality to Total Inequality, Urban and Rural India**

	1983			1993-94			2004-05		
	GE (0)	GE (1)	GE (2)	GE (0)	GE (1)	GE (2)	GE (0)	GE (1)	GE (2)
<b>Urban India</b>									
Employment Status	9.0	8.2	5.5	14.1	11.6	6.4	16.8	14.6	10.2
Industry Groups	2.7	2.6	1.7	9.6	8.5	5.2	7.9	10.5	6.3
Education Groups	11.7	11.1	7.7	18.0	17.0	10.9	14.2	18.2	10.2
Social Groups	0.6	0.5	0.3	3.2	2.4	1.4	3.1	3.6	1.9
Region/States	0.5	0.5	0.3	1.1	1.0	0.5	1.0	1.2	0.7
Religious Groups	2.2	2.1	1.4	3.7	2.8	1.6	2.5	4.0	2.7
<b>Rural India</b>									
Employment Status	2.8	2.2	1.0	9.9	8.1	4.0	13.7	11.9	8.1
Industry Groups	0.7	0.6	0.3	3.5	2.9	1.6	2.4	2.9	2.9
Education Groups	2.1	2.2	1.0	8.7	7.8	3.8	9.4	11.3	11.0
Social Groups	2.1	1.1	0.5	4.4	3.6	1.6	5.8	5.1	3.5
Religious Groups	0.7	0.6	0.3	1.5	1.2	0.8	1.6	1.7	1.3
Region/States	0.5	0.4	0.2	0.7	0.6	0.3	1.6	1.5	1.0

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India.

<sup>16</sup> See Appendix 1 for data sources and methodology. The methodology for the between and within groups components are similar to that of (Cowell and Jenkins 1995; Mookerjee and Shorrocks 1982).

For urban India the largest share of between group inequalities occur when workers are partitioned on the basis of education, employment status and industry groups (table 5). When workers are partitioned on the basis of education, then almost 18 per cent of total inequality could be explained by between group inequality, using education of the worker for GE (1) measure. Similarly, about 17 per cent of total inequality could be explained by between group inequality, using employment status of the worker for GE (0) measure. Surprisingly, when workers are partitioned on the basis of social or religious groups<sup>17</sup>, they yield a very low between group inequality 3.6 per cent of GE (1) measure.

In rural India also, the largest share of between group inequalities occur when workers are partitioned on the basis employment status and education (table 5). When workers are partitioned on the basis of employment status, then almost 14 per cent of total inequality could be explained by between group inequality, using education of the worker for GE (0) measure. In contrast to the urban areas, when workers are partitioned on the basis of social groups, then almost 5.8 per cent of total inequality could be explained for GE(0) measure, bringing out the discrimination on the basis of caste and religion in the labour market. Industry groups do not entail much importance in rural areas as in urban areas, with agriculture being the dominant sector. Surprisingly, the grouping in terms of regions yields a fairly low share of between-group inequality in both urban and rural India, unlike in urban China.

However, one needs to exercise caution in interpreting the low between group inequalities. This is because the between group component of inequality tells us, in an accounting sense, what inequality would be if there were no mean differences between groups (Kanbur 2007). The demographic shifts imply that changing weights and between-group terms are important parts of inequality change.

## 4.2 Regression based Decomposition

A drawback of the standard decomposition is that portioning the population in different ways does not help to isolate the contribution of each characteristic to inequality. To overcome this, Fields (2003) has proposed an alternative approach that considers simultaneously the impact of several given characteristics on incomes, and allows us to distinguish the contributions of each characteristic. The approach is useful as it helps us to factor in the contribution of different explanatory variables including variables with non-linear effects and categorical variables entered as a string of dummy variables.

As some of the differences in incomes between the different employment statuses can be attributed to workers' educational attainment and to the occupation or industry, this approach allows us to simultaneously account for these differences. We adopt the method developed by Fields (2003), which decomposes the contribution of various explanatory variables to the level and change in inequality within a standard semi-logarithmic wage (or income) regression model. The first step in the regression based decomposition methodology is the estimation of a semi-logarithmic Mincerian (standard or augmented) wage<sup>18</sup> function,

$$\ln Y_{it} = a_t' Z_{it}$$

where,  $\ln Y_{it}$  is the log variance of income<sup>19</sup>;

<sup>17</sup> The lower castes and tribes in India, are often discriminated access to certain segments of the labour market due to their castes, so we expected a larger share in explaining inequality between these groups.

<sup>18</sup> For the regression based decomposition approach to inequality Fields (2003) argues that one can proxy wages with either total income or monthly per capita expenditures. ADB (2007) uses monthly per capita consumption expenditure as a proxy for wages to decompose inequality.

<sup>19</sup> The proxy for income that we take into consideration is the monthly per capita consumption expenditure.

$a_t = [\alpha_t \beta_{1t} \beta_{2t} \dots \beta_{jt} 1]$  and

$Z_{it} = [1 \ x_{i1t} \ x_{i2t} \dots \ x_{ijt} \ \varepsilon_{it}]$  are vectors of coefficients and explanatory variables respectively.

A general approach to analyse household income inequality would be to regress the log income on the characteristics of the household head like, sex, age, caste, religion, education, industry, occupation and regions (Fields, 2003; Gottschalk and Joyce 1995; Katz and Murphy 1992; Murphy and Welch 1992;). However, we have modified this standard approach in two ways. One, as our interest is to understand the factors that contribute to inequality at the household level, we have included the characteristics of the workers in the household in the regression. Two, as we are interested in the impact of changing work pattern on inequality, we have included the employment status of all the members of the households in the regression.

In the second step, the estimated standard semi-log regression is decomposed to compute the relative factor inequality weights (i.e., the percentage of inequality that is accounted for by the  $j^{\text{th}}$  factor), which is as follows,

$$s_j(\ln Y) = \frac{\text{cov}[a_j Z_j, \ln Y]}{\sigma^2(\ln Y)} = \frac{a_j \cdot \sigma(Z_j) \cdot \text{cor}[Z_j, \ln Y]}{\sigma(\ln Y)}$$

where,  $s_j(\ln Y)$  denotes the share of the log-variance of income that is attributable to the  $j^{\text{th}}$  explanatory factor;

$\text{cov}[\cdot]$  denotes the covariance,  $\text{cor}(\cdot)$  the correlation coefficient and  $\sigma(\cdot)$  the standard deviation.

The above decomposition, in other words, computes how much income inequality is accounted for by each explanatory factor, which is the “levels question”.

Given estimates of comparable income-generating functions, the difference in income inequality between two periods can be computed. However, this share is no longer independent of the inequality measure used as any change in inequality would depend on the measure used. For any given inequality measure  $I(\cdot)$ , the contribution of the  $j^{\text{th}}$  factor to the change in inequality between two time periods is,

$$\Pi_j(I(\cdot)) = \frac{[s_{j,2} * I(\cdot)_2 - s_{j,1} * I(\cdot)_1]}{[I(\cdot)_2 - I(\cdot)_1]}$$

where,  $\Pi_j$  is a function of  $I(\cdot)$ , which makes explicit that the explanatory contribution of the  $j^{\text{th}}$  factor depends on the inequality measure used.

We adopt this method to decompose inequality in urban China, and urban and rural India<sup>20</sup>. For urban China the analysis is restricted to the accounting for income inequality ‘levels question’ that is factors contributing to inequality, while for India we analyze ‘levels’ and ‘difference question’, which is increase in income inequality over time.

For urban China, the dependent variable used for analysis is log of household per capita income as the dependent variable. The explanatory variables comprise of household size, the ratio of adult workers to dependents, the number of male workers relative to the total family labour force, average education of adults, the average age of household members, dummy variables for industry (6 categories), education level (2 categories), employment status (3

<sup>20</sup> The data sources, definition of variables and methodology are provided in Appendix 1.

categories), regions (5 categories), average health status of the worker and affiliation to political parties.

For urban and rural India, the dependent variable used for analysis is log income. The explanatory variables comprise of household head's age, sex, social group (2 categories), religion (3 categories), employment status (3 categories), education levels (5 categories), industry group (6 categories), region (4 categories), household size, per capita land and worker's education levels (5 categories), employment status (3 categories) and industry group (6 categories). The workers' characteristics is accounted in the regression by taking the proportion of workers in each of the segments (levels of education, employment status and industry group) for each household.

The income equations for both urban China and urban and rural India are presented in Appendix Tables A4-A6. Most of the variables included in the regression are statistically significant at one percent level. In urban China, together these variables explain 41 per cent of the variance of log-income in 2001 and 53 per cent of the variance in 2005. In urban India, these variables together explain 38-51 per cent of the variance in log income and in rural India 22-43 per cent of the variance in log income.

**Discussion of Results:** Given these statistically significant variables, we now analyse the importance of these variables in accounting for inequality, in other words we try to answer the 'levels question'. The standard semi-log regression function is at the second stage decomposed to compute the relative factor inequality weights ( $s_j(\ln Y)$ ).

**Table 6: Contribution of various household characteristics to income inequality, Urban China**

Variables	Contribution to inequality level ( $s_j(\ln Y)$ )	
	2001	2005
Age	2.69	2.95
Gender	0.96	1.26
Employment Status*	0.9	1.3
Industry Group*	6.21	5.82
Level of Education*	10.89	11.07
Regions*	9.67	15.28
Others*	10.05	15.91
Residual	59.08	45.8
<b>Gini</b>	<b>0.366</b>	<b>0.393</b>

Notes:

(\*) The contribution of these variables is cumulative and is obtained by summing the contributions of constituent variables (for example, the total contribution of Industry groups is made up of six terms, agriculture, mining and electricity, gas and water, manufacturing, construction, low productive and high productive services)

Source: ILS estimates based on computations prepared by Du Yang, Institute of Population and Labour Economics, Chinese Academy of Social Sciences, Beijing

In Urban China, the main factors contributing to inequality after residual were region (15 per cent) and education (11 per cent) in 2005 and the proportions increased over time (table 6). The contribution of changing work patterns to inequality was marginal 1 per cent in 2005. In Urban China substantial income gaps exist between households engaged in different business activities and the contribution of industry to inequality was 6 per cent in 2005. Other researchers have also argued that widening sectoral gaps have caused the rising inequality in China (Yang, 1999).

Geographical location being a major factor contributing to inequality is not surprising as pronounced disparities in both income and economic opportunities between the coastal and

inland regions have been highlighted in the literature. The factors responsible for these regional inequalities include preferential government policies, favorable geographical location, and superior infrastructure facilities in the coastal regions (Fu, 2004). The other variables with sizable shares were political affiliation and household size (15.9 per cent) in 2005. Thus, in urban China we find that geographical location and education are the major factors contributing to income inequality in 2005.

In urban India the single most dominant factor contributing to inequality is education (40 per cent) in 2005 and the proportion has increased steadily over the past two decades (table 7a). There is no other variable close to education in explaining inequality. The changing work pattern (3.2 per cent) and industry group (2.3 per cent) had a sizable share contributing to inequality. The variables that were effectively zero were age (-0.02), gender (0.03) and regions (9.99) in 2005. Geographical location in India, unlike in China does not emerge as a major factor contributing to inequality, indicating the existence of income and economic opportunities in most of the regions. Other factors like social groups and religion have a very marginal factor contribution to inequality in 2005.

**Table 7a: Contribution of various household characteristics to income inequality and to the change in inequality 1993-2004, Urban India**

Variables	Contribution to inequality level ( $s_i(\ln Y)$ )			Contribution to change in Gini
	1983	1993-94	2004-05	
Age	-0.30	-0.31	-0.02	0.30
Gender	0.24	0.08	0.03	-0.05
Social Group*	0.96	0.96	1.11	0.17
Employment Status*	3.10	4.38	3.27	-1.13
Industry Group*	0.79	0.79	2.35	1.69
Level of Education*	23.26	32.09	39.53	8.29
Regions*	0.27	0.22	0.99	0.82
Others*	9.79	11.34	7.29	-4.32
Residual	61.96	50.40	45.46	-4.78
<b>Gini</b>	<b>0.339</b>	<b>0.342</b>	<b>0.378</b>	<b>0.036</b>

Notes:

(\*) The contribution of these variables is cumulative and is obtained by summing the contributions of constituent variables (for example, the total contribution of Industry groups is made up of six terms, agriculture, mining and electricity, gas and water, manufacturing, construction, low productive and high productive services)

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India.

Education also emerges as the most dominant factor contributing to inequality in rural India (table 7b). Its contribution being 25 per cent in 2005, and this proportion has almost doubled over the past decade. The contribution of changing work patterns to inequality is comparatively higher (4 per cent) in rural areas than in urban. Social groups is a dominant factor contributing to inequality (4 per cent) in rural India, which is not surprising as access to income and economic opportunities for the lower caste is very limited. As rural India is largely agricultural the importance of industry group in contributing to inequality is about 2 per cent and slightly lower than in urban areas. The contribution of other factors like region, gender and age to inequality is effectively zero.

**Table 7b: Contribution of various household characteristics to income inequality and to the change in inequality 1993-2004, Rural India**

Variables	Contribution to inequality level ( $s_i(\ln Y)$ )			Contribution to change in Gini
	1983	1993-94	2004-05	
Age	0.05	0.21	0.58	-0.07
Gender	0.02	-0.10	-0.21	0.03
Social Group*	2.63	2.28	4.05	-0.31
Employment Status*	3.86	5.42	4.17	0.29
Industry Group*	1.03	1.87	1.83	0.02
Level of Education*	9.84	13.83	25.49	12.07
Regions*	0.23	0.54	0.61	-0.01
Others*	5.45	7.39	8.13	-0.07
Residual	76.89	68.53	55.38	13.18
<b>Gini</b>	<b>0.312</b>	<b>0.285</b>	<b>0.298</b>	<b>0.013</b>

Notes:

(\*) The contribution of these variables is cumulative and is obtained by summing the contributions of constituent variables (for example, the total contribution of Industry groups is made up of six terms, agriculture, mining and electricity, gas and water, manufacturing, construction, low productive and high productive services)

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India.

Although all the explanatory factors were statistically significant determinants of income, their factor contribution to inequality differs enormously. In urban India, education was about 10 times more important than employment status, the next closest variable and five times more important in rural areas. Similarly, in urban China, geographical location was more important than education in accounting for inequality.

The 'difference question' has been analyzed only for urban and rural India over the past decade (1993-94 to 2004-5). The results are presented in the last column of tables 7a and 7b. In urban India, education is the largest variable accounting for 8.29 per cent of the increase in gini coefficient (table 7a). Industry group was the next important variable accounting for 1.7 per cent of the increase in Gini coefficient. Age, social group and regions did not have any contribution to the increase in inequality. In rural India also education is the largest variable accounting for the increase in Gini coefficient and none of the other variables had any contribution to the increase in Gini coefficient. The changing work patterns (employment status) did not contribute to the increase in inequality over the past decade in both rural and urban India.

## 5. Conclusion

The paper very clearly shows that in majority of the countries, where data is available there is a shift towards non-standard forms of work. This has meant more part-time and temporary employment in advanced economies and more informal employment in developing countries. There is also a clear indication that most of these jobs are done by women. Temporary employment in advanced and transition economies are largely concentrated in the younger age-group of 15-24 years, indicating that such jobs are 'stepping stones' to permanent jobs as is argued by some of the researchers. For majority of the countries under analysis, there was a clear link between increased non-standard work and income inequality.

A major reason for the rising income inequality was due to the rising non-standard work and the widening differentials in the wages between standard and non-standard jobs. For

countries where data are available, we find that fixed-term jobs are paid less than those with indefinite duration, and the wage differentials are widening in the advanced and transition economies. This was found to be true in most of the Latin American and Asian economies also. The wage differentials between the two work arrangements was found to have an impact on household incomes, which is demonstrated in the case of Latin American economies. However, some of the Latin American countries, have been able to arrest or reduce income inequality either through increased work effort, in the form of multiple jobs or increasing the number of hours of work or through additions in labour force from the household. There is also evidence that state sponsored initiatives or programs have been able to reduce income inequality.

The empirical analysis in the emerging economies also shows widening wage differentials between standard and non-standard jobs, industry groups and levels of education, which could lead to increasing income inequality. However, the decomposition analysis revealed enormous differences in explaining the levels of income inequality using all these variables. In urban China geographical location and education were found to be the dominant factor in explaining inequality. In urban and rural India, education was the most dominant factor contributing to inequality and the contribution of other factors like employment status and industry groups did not have substantial effect on inequality. Education also turned out to be the most important factor for explaining the increase in inequality over the past decade.

The emergence of education as an important factor contributing to inequality does not necessarily imply that policy focus should be on improving educational levels or attainments. The level of education and the status of employment of a worker are to a large extent inter-related and it is possible that some of the effects of employment status are captured by the education variable. This is because those with tertiary education have a higher probability of entering the labour market as a salaried employee and those with primary and no education would enter the labour market as a casual labour or self-employed. The salaried jobs are rationed for a few, so even if the education level of the workers improves, the probabilities of the additional highly educated labour force getting into salaried employment are low. There is enough evidence to show that due to lack of good opportunities, which provides stable employment and benefits workers take refuge into casual and self-employed work, which was earlier considered to be a transitory phenomenon but is no longer so. In a forthcoming paper we separate out the effects of education and employment status by estimating separate equations for each of the employment status to determine the effect of other factors in explaining inequality.

## References

- ADB. 2007. Key Indicators, Philippines: Manila.
- Arum, R.; Muller, W. 2004. *The Reemergence of Self-employment: A Comparative Study of Self-employment Dynamics and Social Inequality*, Princeton: Princeton University Press.
- Atkinson, J.; Rick, J.; Morris, S.; Williams, M. 1999. "Temporary Work and the Labour Market". *Institute for Employment Studies Report 311*. Poole: BEBC Distribution.
- Badaoui, E.; Strobl, E.; Walsh, F. "Is there an Informal Employment Wage Penalty? Evidence from South Africa". *Discussion Paper Series* Institute for the Study of Labour (IZA), DP No 3151.
- Bardasi, E.; Gorniyk, J.C. 2007. "Women's Part-time Wage Penalties Across Countries", Working Paper No.467, Luxembourg Income Study.
- Bentolila, S.; Dolado, J.J. 1994. "Spanish Labour Markets", *Economic Policy*, No. 18: 53-99.
- Bhaduri, A. 2008. "Predatory Growth: Commentary" *Economic and Political Weekly*, 10-14.
- Blanchard, O.; Landier, A. 2002. "The Perverse Effects of Partial Labour Market Reform: Fixed-term Contracts in France", *The Economic Journal*, 112:214-44.
- Booth, A.L.; Francesconi, M.; Frank, J. 2002. "Temporary jobs: stepping stones or dead ends?" *Economic Journal* 112 (480), F189– F213.
- Bosworth, B.; Collins, S.M. 2007. "Accounting for Growth: Comparing China and India", Working Paper 12943, National Bureau of Economic Research, Cambridge.
- Bruderl, J; Preisendorfer, P. 2000. "Fast Growing Businesses: Empirical Evidence from A German Study", *International Journal of Sociology*, 30:45-70.
- Cappelli, P.; Bassi, L.; Katz, H.; Kroke, D.; Osterman, P.; Useem, M. 1997. *Change at Work*. New York: Oxford University Press.
- Cazes, S.; Nesporova, A. 2004. "Labour Markets in Transition: Balancing Flexibility and Security in Central and Eastern Europe", Geneva: International Labour Organisation.
- Davis-Blake, A.; Uzzi, B. 1993. "Determinants of Employment Externalization: A Study of Temporary Workers and Independent Contractors", *Administrative Science Quarterly* 38: 195-223.
- Dev, M. S.; Ravi, C. 2007. "Poverty and Inequality: All India and States, 1983-2005", *Economic and Political Weekly*, 509-21
- Devey, R.; Skinner, C.; Valodia, I. 2003. "Informal Economy Employment Data in South Africa: A Critical Analysis" Paper presented at the TIPS AND DPRU FORUM 2003, *The Challenge of Growth and Poverty: The South African Economy Since Democracy*, 8 - 10 September 2003, Indaba Hotel, Johannesburg.
- Dorantes, C. A. 2000. "Work Transitions Into and Out of Involuntary Temporary Employment in a Segmented Market: Evidence from Spain", *Industrial and Labour Relations Review*, January.
- Dorantes, C. A. 2005. "Work Contracts and Earnings Inequality: The Case of Chile", *Journal of Development Studies*, 41(4): 589-616.
- Dorantes, C. A.; Serrano-Padial, R. 2007. "Wage Growth Implications of Fixed-Term Employment: An Analysis by Contract Duration and Job Mobility", *Labour Economics*, 14: 829-47.



- Engelland, A.; Riphahn, R.T. 2005. "Temporary Contracts and Employee Efforts", *Labour Economics*, 12: 281-99.
- Esping-Andersen, G. 1990. *The Three Worlds of Welfare Capitalism*. New Jersey: Princeton University Press.
- Eurostat. 2002. *Structure of Earnings Survey*. Statistical Office of the European Communities.
- Fagan, C; Ward, K. 2003. "Regulatory Convergence? Nonstandard Work in the United Kingdom and Netherlands", in *Non-standard work in Developed Economies: Causes and Consequences*, Edited by Susan Houseman and Machiko Osawa, Michigan: W E Upjohn Institute for Employment Research.
- Fields, G. S. 2003. "Accounting For Income Inequality and Its Changes: A New Method with Application to the Distribution of Earnings in the United States." *Research in Labour Economics* 22:1-38.
- Fu, X. 2004. "Limited Linakges from growth engines and regional disparities in China", *Journal of Comparative Economics*, 32: 148-64.
- Funkhouser, E. 1996. "The Urban Informal Sector in Central America: Household Survey Evidence", *World Development*, Vol.24, No.11, 1737-1751.
- Gash, V. 2005. "Bridge or Trap? To What Extent do Temporary Workers make more Transitions to Unemployment then to the Standard Employment Contract. A Comparative Analysis of Denmark, France and United Kingdom", MPI-Berlin, Working Paper No. 3 for Employment Relationships at Risk Project.
- Gash, V.; McGinnity, F. 2005. "Temporary Contracts – the New European Inequality? Comparing men and women in West Germany and France", Paper submitted to the 2005 EPUNet Conference, June 30th-July 2nd, 2005, Colchester, United Kingdom.
- Ghose, A.; Majid, N.; Ernst, C. 2008. *The Global Employment Challenge*, Geneva: International Labour Organisation.
- Giesecke, J.; Gross, M. 2004. "External Labour Market Flexibility and Social Inequality", *European Societies*, 6 (3): 347-82.
- Gindling, T. H.; Terrell, K. 2004. "Legal Minimum Wages and the Wages of Formal and Informal Sector Workers in Costa Rica," *Discussion Paper Series*, Institute for the Study of Labour (IZA), DP No 1018.
- Gong, X.; Soest, A.V. 2002. "Wage differentials and mobility in the urban labor market: A panel data analysis for Mexico", *Labor Economics* 9:513-29.
- Gottschalk, P.; Joyce, J. 1995. "Is earnings Inequality also rising in other industrialized countries", Miimeo, Department of economics, Boston College.
- Gregg, P.; Wadsworth, J. 1996. "More work in fewer households", in *New Inequalities: The Changing Distribution of Income and Wealth in the United Kingdom*, Edited by John Hills, Great Britain: Cambridge University Press.
- Gustafsson, B.; Shi, A. L.; Sicular, T. 2008. *Inequality and Public Policy in China*, New York: Cambridge University Press.
- Hoffman, E.; Walwei, U. 2003. "The Change in Work Arrangements in Denmark and Germany: Erosion or Renaissance of Standards?" in *Non-standard work in Developed Economies: Causes and Consequences*, Edited by Susan Houseman and Machiko Osawa, Michigan: W E Upjohn Institute for Employment Research.
- ILO. 2002. *Men and Women in the Informal Economy: A Statistical Picture*. (Geneva).

- Jimeno, J. F.; Toharia, L. 1993. "The Effects of Fixed-term Employment on Wages: Theory and Evidence from Spain", *Investigaciones Economicas*, 17(3): 475-94.
- Kalleberg, A. L. 2000. "Non standard Employment Relations: Part-time, temporary and Contract Work." *Annual Review of Sociology*, 26: 341-365.
- Katz, L.; Murphy, K. 1992. "Changes in Relative Wages 1963-1987: Supply and Demand Factors", *Quarterly Journal of Economics*, 107 (1): 35-78.
- Lee, D. R. 1996. "Why is flexible employment increasing?" *Journal of Labour Research*. 17(4):543– 53.
- Leibbrandt, M.; Woolard, I. 2001. "The Labour Market and Household Income Inequality in South Africa: Existing Evidence and New Panel Data", *Journal of International Development*, 13: 671-89.
- Luber, S.; Lohmann, H.; Muller, W.; Barbeieri, P. 2000. "Male self-employment in the four European Countries", *International Journal of Sociology*, 30: 5-44.
- Marcouiller, D.; Ruiz de Castilla. V.; Woodruff, C. 1997. "Formal Measures of the Informal-sector wage gap in Mexico, El Salvador and Peru", *Economic Development and Cultural Change*, Vol.45, No.2, 367-392.
- Mertens, A.; McGinnity, F. 2005. "A "Two-Tier" Labour Market for Fixed-Term Jobs? Evaluating Evidence from West Germany Using Quantile Regression", *Schmollers Jahrbuch* .
- Mertens, A.; Gash, V.; McGinnity, F. 2007. "The Cost of Flexibility at the Margin: Comparing the Wage Penalty for Fixed-term Contracts in Germany and Spain using Quantile Regression", *Labour*, 21(4-5): 637-666.
- Mitra, P.; Yemtsov, R. 2006. "Increasing Inequality in Transition Economies: Is there more to come?", *World Bank Policy Research Working Paper Series No.4007*.
- Murphy, K.; Welch, F. 1992. "The Structure of Wages", *The Quarterly Journal of Economics*, 107 (February).
- Nayyar, R. 2002. "The Contribution of Pubic Works and Other Labour-based Infrastructure to Poverty Alleviation: The Indian Experience", Geneva: International Labour Organisation.
- OECD. 2006. *Employment Outlook*. (Paris).
- OECD. 1999. *Employment Outlook*. (Paris).
- Pfeiffer, F.; Reize, F. 2000. "From Unemployment to self-employment - Public promotion and Selectivity", *International Journal of Sociology*, 30:71-98.
- Pianto, M. T.; Pianto, D. M. 2002. "Informal Employment in Brazil – A Choice at the Top and Segmentation at the Bottom: A Quantile Regression Approach", *Working Paper 236*, Department of Economics, University of Brasilia.
- Polavieja, J. G. 2006. "The Incidence of Temporary Employment in Advanced Economies: Why is Spain Different?" *European Sociological Review*, 22(1):61-78.
- Reich, R. 2001. *The Future of Success: Work and Life in the New Economy*. (London, Heinemann).
- Riboud, M.; Sanchez-Paramo, D.; Silva-Jauregui, C. 2002. "Does Eurosclerosis Matter? Institutional Reform and Labour Market Performance in Central and Eastern European Countries", In *Labour, Employment and Social Policies in the EU Enlargement Process*, edited by B Funck and C Pizzasi, Washington D C: The World Bank. P.243-311.
- Ricca, S. 1982. "Private Temporary Work Organization and Public Employment Services: Effects and Problems of Coexistence" *International Labour Review* 121: 141-153.

- Rogerson, C. M. 1997. "Globalization or Informalisation? African Urban Economies in the 1990s", In *The Urban Challenge in Africa; Growth and Management of its Large Cities*, edited by Carole Rakodi. Tokyo, Japan, United Nations University Press. P.337-70.
- Saavedra, J.; Chong, A. 1999. "Structural Reform, Institutions and Earnings: Evidence from the Formal and Informal Sectors in Urban Peru", *Journal of Development Studies*, 35(4): 95-116.
- Sengupta, A.; Kannan, K. P.; Raveendran, G. 2008. "India's Common People: Who are they, How many are they and How do they live?" *Economic and Political Weekly*, 43(11): 49-63.
- Tachibanaki, T.; Yagi, T. 1992. "Welfare Improvements caused by changes in Income Distribution, Needs and Labour Supply: A Theoretical and Empirical Investigation", Mimeographed, Kyoto Institute of Economic Research, Kyoto, Japan.
- Tansel, A. 2000. "Wage earners, Self employed and Gender in the Informal sector in Turkey", Policy Report Research on Gender and Development, *Working Paper Series*, 24.
- Van der Hoeven, R. 2000. "Labour Markets and Income Inequality: What are the New Insights after the Washington Consensus?" United Nations University/WIDER Working Paper No.209. (Helsinki: UNU/WIDER)
- World Bank 2000. *Making Transition Work for Everyone: Poverty and Inequality in Europe and Central Asia*, (Washington)
- Yang, D.T. 1999. "Urban-Biased Policies and Rising Income Inequality in China", *American Economic Review*, 89: 306-310.

## Appendix 1: Data Sources and Methodology

### **Data Sources**

India: The Indian data consists of multiple rounds of the Employment-Unemployment survey and Consumer Expenditure Survey undertaken by National Sample Survey Organisation (NSSO) every five years, covering all the major Indian states. We use the three rounds corresponding to the years 1983, 1993/94 and 2004-5. The detailed characteristics of all household members, including sex, age, caste/religion, marital status and relation with the head of the household, educational level, employment status, occupation and industry category and monthly per capita expenditure are available in the Employment-Unemployment Survey. The sample is restricted to the age group 15-64 years.

To facilitate the analysis, we aggregate the industry groups classified under NIC (National Industrial Classification) to six industry groups with similar qualitative characteristics: agriculture (comprising forestry and fishing); manufacturing; mining and electricity, water and gas; construction; services I (comprising trade, hotels and restaurants, transport, and personal services) and services II (comprising banking and insurance, communication and storage, real estate, business services and public administration). The service sector categorization is based on skill and capital requirements. Low skilled services are largely low productive, whereas high-skilled services comprise of more modern skills and capital-intensive services.

In addition, we classify education into five categories, Illiterate; literate to primary; middle; secondary and above secondary. The employment status categories comprises of self-employed, salaried and casual labour. The self-employed comprises of own account worker, employer and unpaid family worker; salaried worker comprises of regular salaried and wage employee; and the casual worker comprises of casual labour in public works or other types of works.

China: The data for Urban China is from the China Urban Labour Survey 1 (CULS1) and China Urban Labour Survey 2 (CULS2). The CULS1 was administered from Nov.2001 to Jan.2002; and CULS2 from May-August, 2005 in five large Chinese cities Shanghai, Shanyong, Wuhan, Xian and Fuzhou. The survey was administered by the Institute of Population Studies at the Chinese Academy of Social Sciences, in collaboration with local offices of the National Statistical Bureau in each of the five cities. The detailed characteristics of all household members, including sex, age, marital status and relation with the head of the household, educational level, employment status, occupation, industry category, political affiliation, and monthly consumption expenditures were collected through this survey. The Sampling Frame included a proportional population sampling approach, wherein an average of 15 households in each of the 70 neighborhood clusters was sampled, using the 2000 population census as an aid to sampling clusters and households within each city.

## Methodology

**Income Inequality Measures:** The trends in inequality are examined using the Gini coefficient and three Generalized Entropy measures – the mean log deviation (MLD), the Theil index and half the squared coefficient of variation.

The Gini coefficient can be computed as follows,

$$Gini = \frac{-(n+1)}{n} + \frac{2}{n^2 \mu_x} \sum_{i=1}^n i \cdot x_i$$

Inequality trends according to the Generalized Entropy measures depend on the measures used because of the different weighting given to different parts of the income distribution. The formula for computing is,

$$GE(\alpha) = \frac{1}{\alpha(1-\alpha)} \frac{1}{n} \sum_{i=1}^n \left[ 1 - \left( \frac{x_i}{\mu_x} \right)^\alpha \right]$$

The parameter  $\alpha$  represents weight given to income differences at different points of the income distribution. The GE (0), the mean log deviation, and it gives more weight on income differences at the lower end of the distribution, and is more sensitive to changes at that distribution. The GE (2), half of the square of the coefficient of variation, and it gives more weight on income differences at the upper end of the distribution. The GE (1), Theil index, gives equal weights on income differences across the entire distribution and exhibits a constant responsiveness across all ranges of income.

**Within and Between Group Decompositions:** The within and between group decomposition separates total inequality in the distribution into a component of inequality between the chosen groups ( $I_b$ ) and the remaining within-group inequality ( $I_w$ ) in any one year, i.e. a static decomposition. This method basically captures the shifts in the demographic composition through population sub-groups. Any of the Generalized Entropy class of measures can be decomposed by population sub-groups so that the overall inequality  $I$  can be into within-group inequality  $I_w$ , and between group inequalities  $I_b$ .

**Within group inequality** is defined as a weighted sum of inequality within each of the sub-groups where the weights are population and income shares. It reflects the inequality that exists 'over and above' mean difference across groups. The 'contribution' of between group inequality is then taken to be simply the ratio of between group inequality to total inequality, and the contribution of within group inequality is simply one minus this number. Within-group inequality  $I_w$  is defined as:

$$I_w = \sum_{j=1}^k w_j GE(\alpha)_j$$

$$w_j = v_j^\alpha f_j^{1-\alpha}$$

where,  $f_j$  is the population share and  $v_j$  the income share of each partition  $j$ ,  $j = 1, 2, \dots, k$ .

**Between groups inequality** is inequality calculated on the total population when each  $y$  in a group is replaced by the mean of  $y$  in that group. It reflects, therefore, the mean differences across the groups. Between-group inequality,  $I_b$ , is measured by assigning the mean income of each partition  $j$ ,  $\bar{y}_j$ , to each member of the partition and is calculated as:

$$I_b = \frac{1}{\alpha^2 - \alpha} \left[ \sum_{j=1}^k f_j \left( \frac{\bar{y}_j}{\bar{y}} \right)^\alpha - 1 \right]$$

The between group measure, is the inequality that would be seen if all the individual observations within one group were replaced by the average income of that group, so that the concentration would then be only on variations between these distinct groups. The share of between group inequalities can be quite low. The extent of inequality accounted for by between groups inequalities can also be influenced by the number of groups into which households can be partitioned. In general finer partitions can be expected to increase the share of between-group inequality. It is negligible for a partition based on gender of the household head or regions.

## Appendix 2: Tables

Table A1: Average Monthly Earnings of Workers, Urban China

	2001	2005
<b>Gender</b>		
Male	1136	1416
Female	874	1049
<b>Employment Status</b>		
Wage Employment	999	1268
With contract	896	1446
Without contract	1062	910
Self-Employment	1250	1173
<b>Industry</b>		
Agriculture	994	1767
Mining and Manufacturing	890	1240
Construction	974	1669
Services 1	1090	1150
Services 2	1399	1776
Research and Government admn.	1057	1221
<b>Education</b>		
Jr. High School and below	778	906
Sr. High School	949	1078
College and above	1428	1668
<b>Regions</b>		
Shanghai	1436	1922
Wuhan	866	902
Shenyang	868	895
Fuzhou	1110	1383
Xian	782	958

Source: ILS estimates based on computations prepared by Du Yang, Institute of Population and Labour Economics, Chinese Academy of Social Sciences, Beijing.

Table A2: Average Monthly Incomes and Growth Rates, Urban India

	Average Incomes			Growth Rates	
	1983	1993-94	2004-5	1983 to 1993-94	1993-94 to 2004-5
<b>Quintiles</b>					
Bottom 20%	51	144	583	4.53	5.87
Lower Middle 20%	78	205	583	4.84	5.84
Middle 20%	102	261	652	5.05	5.92
Upper Middle 20%	136	348	829	5.31	6.13
Top 20%	316	725	1628	5.95	6.74
<b>Employment Status</b>					
Self Employed	178	442	997	5.52	6.30
Casual Labour	146	303	627	5.16	5.87
Salaried	237	584	1420	5.76	6.62
<b>Industry Group</b>					
Agriculture	165	337	736	5.25	6.02
Mining and Public Utilities	228	539	973	5.69	6.25
Manufacturing	186	467	1350	5.57	6.59
Construction	176	386	782	5.38	6.07
Low skilled Services	218	451	959	5.51	6.25
High skilled Services	208	668	1882	5.91	6.89
<b>Education Group</b>					
Illiterate	159	342	709	5.27	5.98
Primary	174	414	849	5.45	6.14
Middle	194	460	1090	5.55	6.38
Secondary	243	588	1373	5.77	6.59
Above Secondary	301	812	1872	6.07	6.86

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India.

Table A3: Average Monthly Incomes and Growth Rates, Rural India

	Average Incomes			Growth Rates		
	1983	1993-94	2004-05	1983 to 94	1993-94 to 2004-5	
<b>Quintiles</b>						
Bottom 20%	51	142	393	4.52	5.48	
Lower Middle 20%	78	202	446	4.82	5.57	
Middle 20%	101	259	521	5.04	5.70	
Upper Middle 20%	134	341	629	5.29	5.86	
Top 20%	388	628	950	5.78	6.21	
<b>Employment Status</b>						
Self Employed (Agriculture)	159	308	583	5.17	5.80	
Self Employed (Non Agriculture)	150	312	607	5.19	5.83	
Casual Labour (Agriculture)	132	228	448	4.89	5.56	
Casual Labour (Non Agriculture)	138	272	518	5.06	5.69	
Salaried (Agriculture)	150	295	555	5.13	5.75	
Salaried (Non Agriculture)	188	432	862	5.49	6.15	
<b>Industry Group</b>						
Agriculture	151	277	534	5.07	5.72	
Mining and Public Utilities	159	313	596	5.18	5.82	
Manufacturing	150	307	712	5.17	6.00	
Construction	161	285	529	5.09	5.71	
Low skilled Services	172	329	621	5.22	5.85	
High Skilled Services	152	454	937	5.56	6.23	
<b>Education Group</b>						
Illiterate	147	251	481	4.97	5.62	
Primary	151	293	535	5.12	5.71	
Middle	167	340	625	5.26	5.85	
Secondary	194	403	761	5.41	6.03	
Above Secondary	210	499	1057	5.62	6.34	

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India.



**Table A4: Expenditure equations for 2001 and 2005, Urban China****Dependent Variable: Log per capita income**

<b>Variables</b>	<b>2001</b>	<b>2005</b>
Household size	-0.07***	-0.11***
Ratio of adult workers to household size	0.46***	0.64***
Percentage of male workers to total family labour force	-0.21***	-0.27***
Percentage of female workers to total family labour force	-0.10**	-0.24***
Average age of adult members	0.02***	0.02***
<b>Education groups</b>		
Percentage of members with college and above education	0.90***	0.85***
Percentage of members with senior high school	0.40***	0.19***
<b>Industry groups</b>		
Agriculture	0.52**	0.22
Mining and Manufacturing	0.39***	0.16***
Construction	0.61***	0.26***
Services 1	0.60***	0.19***
Services 2	0.73***	0.29***
Research and Government admn.	0.49***	0.11***
<b>Employment status</b>		
Ratio of self-employment to labour forces	0.05	0.08
Ratio of wage employment without contract	-0.04	-0.06
Ratio of self-employment	-0.01	-0.16**
Average health status of family members	0.08***	0.05***
Ratio of members with party membership	0.37***	0.32***
<b>Regions</b>		
Wuhan	-0.55***	-0.61***
Shenyang	-0.62***	-0.66***
Fuzhou	-0.25***	-0.27***
Xian	-0.68***	-0.66***
Constant	5.51***	7.55***
<b>Adj-R<sup>2</sup></b>	<b>0.41</b>	<b>0.53</b>
<b>No. of observations</b>	<b>3426</b>	<b>2449</b>

Note: \*\*\*p&lt;0.01, \*\*p&lt;0.05

Source: ILS estimates based on computations prepared by Du Yang, Institute of Population and Labour Economics, Chinese Academy of Social Sciences, Beijing

**Table A5: Expenditure equations for 1983, 1993-94 and 2004-05, Urban India****Dependent Variable: Log per capita income**

Variables	Category	1983	1993-94	2004-05
<b>Household heads' characteristics</b>				
Age		0.063***	0.120***	0.149***
Household size		-0.065***	-0.080***	-0.051***
Gender	Male	0.127***	0.059***	0.069***
Social Group	Scheduled tribe	-0.062***	0.032***	0.015
(Forward castes excluded)	Scheduled castes	-0.049***	-0.060***	-0.084***
Religion	Hindus	-0.017***	-0.011	0.019***
(Christian hholds excluded)	Muslims	0.108***	0.134***	0.195***
	Other religions	0.146***	0.137***	0.152***
Industry Group	Agriculture	0.065***	0.066***	0.010
(Mining, Elec. Gas excluded)	Manufacturing	0.164***	0.138***	0.171***
	Construction	0.081***	0.102***	0.034***
	Services 1	0.004	0.013	-0.036***
	Services 2	0.068***	0.076***	0.108***
Employment Status	Self-employed	-0.007	0.026***	0.017***
(Casual Labour excluded)	Salaried	-0.179***	-0.183***	-0.190***
	Unemployed	-0.122***	-0.124***	-0.088***
Education groups	Primary	-0.481***	-0.622***	-0.618***
(Illiterate excluded)	Middle	-0.406***	-0.516***	-0.508***
	Secondary	-0.323***	-0.437***	-0.405***
	Above Secondary	-0.195***	-0.289***	-0.254***
Regions	Northern	-0.029***	-0.006	-0.051***
(Southern region excluded)	Eastern	-0.003	-0.058***	-0.091***
	Western	0.055***	0.071***	0.068***
<b>Workers' characteristics</b>				
Industry Group	Agriculture	0.010	0.011	-0.009
(Mining Elec. And Gas excluded)	Manufacturing	0.085***	0.071*	0.217*
	Construction	0.095***	0.135***	0.179***
	Services 1	0.062***	0.076***	0.110***
	Services 2	0.127	0.145***	0.360***
Employment Status	Self-employed	0.000	-0.017**	-0.046**
(Casual labour excluded)	Salaried	-0.117***	-0.141***	-0.275***
	Unemployed	-0.093***	-0.098***	-0.310***
Level of Education	Primary	-0.545***	-0.580***	-0.916***
(Illiterate excluded)	Middle	-0.398***	-0.409***	-0.698***
	Secondary	-0.223***	-0.304***	-0.536***
	Above Secondary	-0.006	-0.107***	-0.253***
Constant		5.690***	6.650***	7.172***
<b>Adj-R<sup>2</sup></b>		<b>0.382</b>	<b>0.481</b>	<b>0.519</b>
<b>No. of observations</b>		<b>41264</b>	<b>45112</b>	<b>44321</b>

Note: \*\*\*p<0.01, \*\*p<0.05, \*p>0.1

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India

**Table A6: Expenditure equations for 1983, 1993-94, and 2004-05, Rural India****Dependent variable: Log per capita Income**

Variables	Category	1983	1993-94	2004-05
<b>Household heads' characteristics</b>				
Age		0.034***	0.059***	0.099***
Household size		-0.042***	-0.044***	-0.032***
Gender	Male	0.107***	0.069***	0.064***
Land per capita		0.030***	0.043***	0.028***
Social Group (Forward castes excluded)	Scheduled tribe	-0.177***	-0.123***	-0.132***
	Scheduled castes	-0.064***	-0.031***	-0.063***
Religion (Christian holds excluded)	Hindus	0.043***	0.018***	0.075***
	Muslims	0.142***	0.183***	0.289***
	Other religions	0.296***	0.248***	0.304***
Industry Group (Mining, Elec. Gas excluded)	Agriculture	0.024***	0.071***	-0.016***
	Manufacturing	0.189***	0.124***	0.157***
	Construction	0.123***	0.136***	0.052***
	Services 1	0.008	0.081***	0.013***
	Services 2	0.139***	0.136***	0.107***
Employment Status (Casual Labour excluded)	Self-employed	0.042***	-0.014**	0.013**
	Salaried	-0.105***	-0.148***	-0.110***
	Unemployed	-0.025	-0.073	-0.063
Education groups (Illiterate excluded)	Primary	-0.033***	-0.069***	-0.036***
	Middle	-0.044***	-0.112***	-0.122***
	Secondary	-0.004***	-0.017***	0.013***
	Above Secondary	-0.033***	-0.069***	-0.036***
Regions (Southern region excluded)	Northern	-0.033***	-0.069***	-0.036***
	Eastern	-0.044***	-0.112***	-0.122***
	Western	-0.004	-0.017***	0.013***
<b>Workers' characteristics</b>				
Industry Group (Mining Elec. And Gas excluded)	Agriculture	0.008	0.014	-0.012
	Manufacturing	0.108***	0.075**	0.265**
	Construction	0.087***	0.059***	0.255***
	Services 1	-0.009	0.068**	0.133***
	Services 2	0.131***	0.146***	0.452***
Employment Status (Casual labour excluded)	Self-employed	0.011**	-0.009*	0.020**
	Salaried	-0.094***	-0.087***	-0.134***
	Unemployed	-0.082***	-0.051***	-0.040
Level of Education (Illiterate excluded)	Primary	-0.329**	-0.365***	-0.817***
	Middle	-0.108***	-0.195***	-0.585***
	Secondary	0.129***	-0.039***	-0.369***
	Above Secondary	0.322***	0.142***	-0.097***
Constant		5.217	6.112***	6.897***
<b>Adj-R<sup>2</sup></b>		<b>0.331</b>	<b>0.393</b>	<b>0.430</b>
<b>No. of observations</b>		<b>77047</b>	<b>68023</b>	<b>77741</b>

Note: \*\*\*p&lt;0.01, \*\*p&lt;0.05, \*p&gt;0.1

Source: ILS estimates based on data obtained from National Sample Survey Organisation, Ministry of Statistics, Government of India.

---

Recent Discussion Paper Series  
Titres récents dans la série Documents de travail  
Títulos recientes en la serie Documentos de trabajo

---

*Social Pacts as Coalitions of 'Weak' and 'Moderate': Ireland, Italy and South Korea in Comparative Perspective*, by Lucio Baccaro and Sang-Hoon. Lim No. 162. 2006. ISBN 92-9014-787-3 & 978-92-9014-787-9.

*The law and governance debate in the European Union*, by Alexandra Gatto. No. 163. 2006. ISBN 92-9014-791-1 & 978-92-9014-791-6.

*Participatory governance and citizen action in post-apartheid South Africa*, by Steven Friedman. No. 164. 2006. ISBN 92-9014-795-4 & 978-92-9014-795-4.

*GATS, Migration, and Labor Standards*, by Philip L. Martin. No. 165. 2006. ISBN 92-9014-791-1 & 978-92-9014-791-6.

*Socially sustainable development and participatory governance: legal and political aspects*, by Konstantinos Papadakis. No. 166. 2006. ISBN No. 92-9014-799-7 & 978-92-9014-799-2.

*Migration, the diaspora and development: The case of Mexico*, by Agustín Escobar Latapí, and Eric Janssen. No. 167. 2006. ISBN 92-9014-801-2 & 978-92-9014-801-2.

*Policy concertation in Europe: Explaining government choice*, by Lucio Baccaro and Marco Simoni. No. 168. 2006. ISBN 92-9014-807-1 & 978-92-9014-807-4.

*Transstate Social Spaces and Development: Exploring the Changing Balance between Communities, States and Markets*, by Thomas Faist. No. 169. 2007. ISBN 978-92-9014-809-8 & 978-92-9014-810-4.

*Employment in the development agenda: Economic and social policies*, by T. S. Papola. No. 170. 2007. ISBN 978-92-9014-813-5.

*Using the social capital of nationals abroad as a strategy for development in the IT sector*, by Eric A. Charest. No. 172. 2007. ISBN 978-92-9014-820-3.

*Los derechos sociales en el marco de las reformas laborales en América Latina*, by Adrián Goldin. No. 173. 2007. ISBN 978-92-9014-822-7.

*The Southern European social model: Changes and continuities in recent decades*, by Maria Karamessini. No. 174. 2007. ISBN 978-92-9014-832-6.

*The quest for a fair globalization three years on: Assessing the impact of the World Commission on the Social Dimension of Globalization*, by Hamish Jenkins, Eddy Lee, and Gerry Rodgers. No. 175. 2007. ISBN 978-92-9014-828-9.

*Labour laws in South Asia: The need for an inclusive approach*, by Kamala Sankaran. No. 176. 2007. ISBN 978-92-9014-830-2.

*L'effectivité du droit du travail et l'aspiration au travail décent dans les pays en développement: une grille d'analyse*, by Rachid Filali Meknassi. No. 177. 2007. ISBN 978-92-9014-838-8.

*Globalization, the impact of trade liberalization, and labour law: The case of South Africa*, by Jan Theron, Shane Godfrey and Margaret Visser. No. 178. 2007. ISBN 978-92-9014-834-0.

*Trade liberalization, labour law, and development: A contextualization*, by Adelle Blackett. No. 179. 2007. ISBN 978-92-9014-846-3.

*Labour law: A Southern African perspective*, by Colin Fenwick, Evance Kalula and Ingrid Landau. No. 180. 2007. ISBN 978-92-9014-842-5.

*La efectividad de la legislación laboral en América Latina*, by Graciela Bensusán. No. 181. 2007. ISBN 978-92-9014-840-1.

*Gouvernance, droit international et responsabilité sociétale des entreprises Governance, International Law and Corporate Societal Responsibility*, edited by Jean-Claude Javillier. No. 182. 2007. ISBN 978-92-9014-836-4.

*Issues in the analysis of global value chains and their impact on employment and incomes in India*, by Dev Nathan and V. Kalpana. No. 183. 2007. ISBN 978-92-9014-844-9.

*Explaining non-compliance with labour legislation in Latin America: A cross-country analysis*, by Adriana Marshall. No. 184. 2007. ISBN 978-92-9014-848-7.

*Corporate social responsibility in multinational companies: Management initiatives or negotiated agreements?* by Tony Edwards, Paul Marginson, Paul Edwards, Anthony Ferner, and Olga Tregaskis. No. 185. 2007. ISBN 978-92-9014-856-2.

*The influence of the EU on the evolution of national employment models*, by Jill Rubery, Gerhard Bosch, and Steffen Lehndorff. No. 186. 2008. ISBN 978-92-9014-864-7.

*Harnessing globalization for development: Opportunities and obstacles*, by Eddy Lee. No. 187. 2008. ISBN 978-92-9014-866-1.

*Deepening the Social Dimensions of Regional Integration: An Overview of Recent Trends and Future Challenges in Light of the Recommendations of the Report of the World Commission on the Social Dimension of Globalisation*, by UNU-CRIS. No. 188. 2008. ISBN 978-92-9014-870-8.

*The Swedish model: Revival after the turbulent 1990s?*, by Dominique Anxo, Harald Niklasson. No. 189. 2008. ISBN 978-92-9014-872-2.

*Executive compensation: Trends and policy issues*, by Franz Ebert, Raymond Torres and Konstantinos Papadakis. No. 190. 2008. ISBN 978-92-9014-888-3.

*Labour, Globalization and Inequality: Are Trade Unions Still Redistributive?*, by Lucio Baccaro. No. 192. 2008. ISBN 978-92-9014-885-2.

*Impact of changing work patterns on income inequality*, by Uma Rani. No. 193. 2008. ISBN 978-92-9014-886-9.

*Policies for redistribution: The use of taxes and social transfers*, by Naren Prasad. No. 194. 2008. ISBN 978-92-9014-887-6.

---

A complete list of ILS publications can be obtained from  
<http://www.ilo.org/public/english/bureau/inst/papers/index.htm>

Une liste complète de nos publications peut être obtenue sur  
<http://www.ilo.org/public/french/bureau/inst/papers/index.htm>

Se puede obtener una lista completa de las publicaciones en  
<http://www.ilo.org/public/spanish/bureau/inst/papers/index.htm>

---