

Short-term contracts and their effect on wages in Indian regular wage employment

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Rahul Menon

Tata Institute of Social Sciences, India

Abstract

The increase in regular wage employment in the Indian economy between 2004–2005 and 2011–2012 was accompanied by a significant deterioration in job security; more workers found themselves on short-term and insecure contracts – a continuing trend. Insecurity of tenure results in a significant wage penalty for short-term workers, compared with those with longer term contracts. This article estimates the negative effect of short-term contracts on the wages of Indian regular wage workers all along the income distribution – unlike earlier studies – using the method of unconditional quantile regressions on data from the 68th round and the 61st round of the National Sample Survey Organisation on Employment covering the period 2004–2005 and 2011–2012. It finds that the wage penalty due to short-term contracts is higher for high-wage workers than for low-wage workers, with the maximum impact felt by median wage workers, and has increased for higher paid workers from 2004–2005 to 2011–2012. The spread of informal employment arrangements within India's formal labour markets has resulted in an increasingly unequal distribution of workers' access to the benefits of growth, reflecting a shift in power in favour of capital. These findings, specific to a developing economy like India, stand in contrast with studies in European countries, where high-wage workers do not face as much of a penalty for short-term contract work as low-wage workers.

JEL Codes: J31, J41

Keywords

Decent work, insecurity, labour contract, low-paid workers, short-term contracts, unconditional quantile regression, wage penalty

Corresponding author:

Rahul Menon, Tata Institute of Social Sciences, S.R Sankaran Block, Telangana State Institute of Panchayat Raj and Rural Development (TSIPARD) Campus, Rajendranagar, Hyderabad 500 030, Telangana, India.
Email: rahul.menon@tiss.edu

Introduction

One of the major challenges facing policymakers in the Indian economy is not only to generate enough jobs for the growing workforce but also to foster employment of a healthy and sustainable nature. Progress on this front can be measured by looking at the generation of regular wage jobs in the economy. As opposed to self-employment and casual labour, workers in regular wage employment receive their payment at fixed amounts of time; they have relatively fixed contracts, and their payments do not depend on the periodic renewal of their work contract.

While the growth rate of employment per annum in India was around 1.95% during the period 1983 to 1993–1994, it fell to 1.27% for the period 1993–1994 to 2009–2010, mostly due to a dramatic fall in employment growth during the period 2004–2005 to 2009–2010 after a period of rapid increase (Himanshu, 2011; Papola and Sahu, 2012). Some commentators, however, highlighted certain positive developments, such as an increase in employment in the organised sector and in regular wage employment alongside a large decline in the number of jobs in the self-employed category. Rangarajan et al. (2014) report that there was a significant increase in the share of regular wage/salaried employees in the total workforce, across gender categories and in both the rural and urban areas. However, self-employment and casual forms of employment continued to employ a majority of the workforce (Srivastava, 2016).

This increase in regular wage employment has been accompanied by an increase in ‘precarious’ work, and a reduction in workers’ rights and access to benefits (Maiti, 2012; Nath, 2008). More workers find themselves working under extremely short-term contracts with no access to benefits such as paid leave and social security (Kannan, 2009; National Commission for Enterprises in the Unorganised Sector (NCEUS), 2009; Reddy, 2005; Sapkal and Shyam Sundar, 2017a, 2017b; Shyam Sundar, 2011). What is clearly evident in the Indian context is a process of informalisation of the formal sector, an outcome that is not unique to India alone (Standing, 2011).

While there have been plenty of studies that have outlined the steady degradation in conditions of work, less attention has been paid to studying the links between conditions of work and wages. While field studies and reports have testified to how contractual workers are paid less than directly employed workers (IndustriAll, 2012), the issue has not been rigorously explored econometrically, barring a few noteworthy exceptions (Bhandari and Heshmati, 2008; Sapkal and Shyam Sundar, 2017a, 2017b). The purpose of this article is to chart the degradation in conditions of work – as proxied by greater insecurity of tenure – and link it with the determination of wages, arguing that a shift towards shorter contracts indicates weaker bargaining power of labour, and hence is tending to lead to lower wages for such workers. The aim of this study is to advance a framework for conceptualising the determination of wages that does not depend solely on worker characteristics such as education, but that takes into account conditions of work and the shift in power between capital and labour.

This article studies the effect of short-term contracts all along the wage distribution over two different data collection rounds – the 61st covering the period 2004–2005 and the 68th for the period 2011–2012 – of the National Sample Survey Organisation’s (NSSO) Surveys on Employment and Unemployment. It does so using the method of

unconditional quantile regressions as outlined by Firpo et al. (2009) This approach allows computation of unconditional estimates of the effect of short-term contracts on wages, in order to see whether the effect of insecurity of tenure on wages is different for low-paid workers as compared to high-paid ones.

The contribution of the article rests on two fronts. First, it investigates the issue of short-term contracts and wages for India all along the wage distribution – an aspect that has not been looked at before in the context of a developing economy like India. Second, its findings differ from earlier work on the topic. While earlier work carried out in the context of European countries has found that low-wage workers are penalised the most heavily by the introduction of short-term contracts, in the Indian case the maximum penalty is experienced by middle-wage workers. Surprisingly, low-wage workers experience the *smallest* penalty for being on a short-term contract, even when compared to high-wage workers.

The article proceeds as follows: a close review of the literature on precarious work highlights the increasing trend of informalisation of work arrangements within the Indian economy and internationally, as well as examining the effects of increasing precarity on workers' bargaining power and wages. Focusing on India, the methodology of the empirical analysis is then outlined; unconditional quantile regressions on data from two rounds of the NSSO on Employment, covering the period 2004–2005 and 2011–2012, are used in order to identify the relationship between changes in the length of contracts and changes in wages all along the wage distribution. The empirical findings are then set out and their implications discussed. Finally, the disturbing conclusion is reached, that in countries such as India, development has brought about increasing precarity, as insecure contracts have encroached into higher wage sectors of the labour market as well.

Review of key literature on precarious work

It is difficult to find a concise definition of precarious work that nonetheless captures the large variety of employment practices that renders labour vulnerable. Kalleberg (2009) defines precarious employment as that which is '... uncertain, unpredictable, and risky from the point of view of the worker' (p. 2). The ACTRAV symposium¹ of the International Labour Organisation (ILO, 2011) defines it as '... a means for employers to shift risks and responsibilities onto workers ... characterized by variable levels and degrees of objective (legal status) and subjective (feeling) characteristics of uncertainty and insecurity' (p. 5).

These simple definitions, however, are unable to capture the variety of labour practices and arrangements which leave the worker vulnerable (McKay et al., 2012). Precarity can arise either through the nature of the contract, where workers may be subject to fixed-term or temporary contracts of a limited duration, or by virtue of specific employment relationships, through the use of subcontracting and so on, where the workers do not know who their principal employer is. Furthermore, precarity could arise through the conditions of work: low wages, low access to social security benefits, low access to institutions of collective bargaining and so on. These forms of precarity are not mutually exclusive; contractual workers in the Indian manufacturing sector embody most, if not all, of the above characteristics of precariousness (Sapkal, 2016). Standing (2011) identifies the 'precariat'

as those workers who are rendered vulnerable along various axes, suffering insecurity of income, work, surety of employment, representation and so on.

The existence of such forms of employment is not a new phenomenon, yet what is significant is the growth and persistence of such employment in the developed Western economies (ILO, 2011; McKay et al., 2012; Stone, 2006). Standing (2011) feels that the increase in precarity of work has progressed to such an extent that workers caught in such arrangements could now be said to constitute a separate class on their own.²

For some commentators, it could be argued that labour in India – and the developing world in general – was always precarious, given the absence of organised safety nets in the vast informal sector (Kannan, 2009). Several authors attest to the difficulties and hardships faced by the Indian labourer (Bremman, 2010; Harris-White, 2003). Labour in the informal sector do not have access to social security measures like their counterparts in the formal sector, receive lower wages (NSSO, 2012) and are also subject to harsh forms of control and domination (Bremman, 2008). Even if workers do find themselves in formal sector *enterprises*, they may be subject to informal and insecure forms of employment, such as short-term contracts (Kannan, 2009).

These developments are not unique to India alone; the period of rapid economic growth in China has led to a significant increase in informal employment. A survey by the All-China Federation of Trade Unions recorded that 80% to 90% of laid-off workers who were able to find employment by 1990 were employed in informal jobs (see Zhou, 2013, and the references within). Liang et al. (2016) report that the proportion of formal employees in the Chinese economy fell from 65% to 43% from 2007 to 2013.

Changes occurring in the Indian economy have led to an increase in such employment in certain sectors. Kalhan (2008), Mezzadri (2016) and Mezzadri and Srivastava (2015) outline how globalisation has led to a significant increase and institutionalisation of informal forms of employment in sectors such as the garment industry. With regard to the organised manufacturing sector, the extent of subcontracting of workers has increased significantly in recent times. Official data from the Annual Survey of Industries would reveal that one in nearly three workers is subject to such informal forms of employment; surveys from the field reveal that the actual percentage may be much higher (Annavajhula and Pratap, 2012a, 2012b).

What is the effect of such types of labour relationships on workers and the broader economy? Employers feel that the rise of such forms of employment relationships allows for a more dynamic economy, as it allows employers to meet sudden and temporary demand for products (All India Organisation of Employers, 2012). Given the restrictions on the easy hiring and firing of labour – so the argument goes – the ability to hire temporary workers on short-term contracts allows the flexibility for business that restrictive labour laws deny them (Nagaraj, 1984; Ramaswamy, 1999). Sapkal (2016) has shown how the hiring of contract workers in the Indian manufacturing sector is greater in states with more restrictive labour laws.

Yet while advocates of labour flexibility express their arguments in terms of efficiency and economic productivity, in actuality it was nothing but ‘... a thinly disguised attempt to roll back – under the guise of “economic efficiency” – gains that workers had achieved over years and years of bargaining and political activity’ (Stiglitz, 2002: 13). According to Nagaraj (1984), the practice of subcontracting in the Indian manufacturing

sector is largely concerned not with efficiency of output but with lowering labour costs and blunting the power of organised labour. As a result, increasing insecurity and forms of temporary work may reflect itself in wage disparities between workers, as well as significant changes in the distribution of income between wages and profits.

Mainstream accounts of wage determination explain wages as a function of the worker's productivity, which would depend on the characteristics of the worker – age, education and so on – as well as the productive process – the capital–labour ratio, the type of industry and so on (Krishna and Paul, 2012). A bargaining model of wage determination, however, would hold that the relative strengths of capital and labour determine the wage. Several authors have found that union membership delivers a significant wage premium (Blanchflower and Bryson, 2004; Card, 2001; Schmitt, 2008). If workers are not part of a union, or do not have strong bargaining power, they could face a significant penalty in terms of reduced wages.

Studies have shown a link between the nature of the work contract and wages. Based on a survey of workers in organised manufacturing enterprises, Bhandari and Heshmati (2008) show that contract workers earn lesser compared to their directly employed counterparts, a wage differential that does not reflect differences in productivity. Sapkal and Shyam Sundar (2017b), using decomposition analyses, show that workers on long-term contracts enjoy higher wages as compared to those on shorter term contracts. Chen and Hamori (2011) show that 76.35% of the differentials in hourly incomes of urban workers in China are accounted for by the difference in characteristics between formal and informal employment. In the context of the UK economy, Haldane (2017) reports that the puzzle of weak wage growth in the presence of healthy job growth could be explained by the *forms* of jobs being generated. The reduction in rates of unionisation and the increase in insecure forms of employment encompassing self-employment and zero-hour contracts have played a significant role in reducing workers' bargaining power, possibly impacting wages as well. Workers on zero-hour contracts earn significantly less than workers on non-zero-hour contracts, even after controlling for personal characteristics (Gardiner, 2016).

The expansion of such precarious forms of employment is not a positive development for an economy, as it brings in its wake worker insecurity, adverse labour relationships and consequences in the form of reduced wages. The expansion of decent work is incompatible with a labour regime that does not guarantee workers stable employment and rights at work (Srivastava, 2012).

It is important to note that the existence of short-term contracts can be seen among low-wage as well as high-wage workers. Contractual and insecure workers are generally thought to be at the lower end of the wage spectrum, with such contracts adding to their already considerable insecurity. The increase in insecure contracts and precarious forms of work and its effects on wages have been well documented and established for countries in the European Union (Comi and Grasseni, 2012; Da Silva and Turrini, 2015). Barbieri and Cutuli (2009) and Bosio (2009) find that the prevalence of short-term contracts adversely affects workers at the lower end of the wage distribution, who suffer a significant wage penalty relative to workers at the higher end of the distribution. An examination of the data complicates this simple conclusion, for high-wage workers have also seen an increase in the prevalence of such contracts, albeit at lower rates than

low-wage workers. Yet in spite of the lower prevalence of short-term contracts among high-wage workers, they face a significant penalty due to the existence of such contracts. While the prevalence of informality and its effects on the Indian worker have been studied in detail, any attempt to study the effect of informal working conditions all along the wage distribution has not been carried out before.

Data, definition and concepts

The NSSO of India carries out regular 5-year surveys on a variety of indicators such as employment, consumption, wealth and asset holding and so on; these surveys are extensive in their scope and cover a large part of the country. For the purpose of this study, data from two rounds of the NSSO surveys were considered – the 61st round that was carried out in 2004–2005 and the 68th round in 2011–2012. Sampling was carried out by way of a multistage stratified sample design. A total of 124,680 households were surveyed in 2004–2005 and 101,724 households in 2011–2012. Unit-level data at the individual level were collated from these sample surveys and analysed for the purpose of this study.

This study looks only at workers classified as Regular Wage Workers according to the Usual Principal Activity Status criterion. According to this criterion, workers are classified as self-employed (those who at the time of the survey either operated their own enterprise or were engaged independently in a trade or profession), regular wage workers (those whose payment of wages and salaries did not depend on the periodic or daily renewal of the work contract) or casual labourers (those who worked on the basis of a daily or periodic work contract) depending on whether they spent a major part of the 365 days immediately preceding the survey in a specific work activity (NSSO, 2014).³ The category of regular wage worker may also include those receiving piece wages, as well as full-time or part-time workers and paid apprentices.

The National Sample Survey (NSS) divides regular wage workers into the following categories with respect to the length of their contract: (a) no written contract, (b) written contract for 1 year or less, (c) written contract for a period between 1 and 3 years and (d) written contract for a period more than 3 years. For the purposes of this study, categories (a) and (b) as defined above are classified as short-term or insecure workers.

Empirical analysis: Worker protection in regular wage employment

The erosion of worker protection

Regular wage workers enjoy significant advantages over other kinds of workers, such as access to social security measures and higher wages. As Table 1 shows, regular wage workers enjoy significantly higher wages than casual labourers. Even though the amount of regular jobs has been increasing for both men and women, the amount of casual labour and self-employed labour is still disturbingly high. The share of the self-employed is still over half the entire workforce, and though the share of regular wage workers has increased since the 43rd round, less than a fifth of all workers at the time of the survey were regular workers (NSSO, 2014).

Table 1. Average daily wages (Rs. per day) for regular workers and casual labourers, India.

	Regular worker		Casual worker	
	Rural	Urban	Rural	Urban
2011–2012	298.96	449.65	138.62	170.1
2004–2005	133.81	193.73	48.89	68.68
1999–2000	125.31	165.05	40.23	57.98
1993–1994	55.12	75.78	20.54	28.77

Source: National Sample Survey Organisation (NSSO, 2014).

Wages for casual workers are shown only for the category 'Casual labour in other kinds of work'. They do not include wages for casual labour in public works. All figures are in nominal terms.

Table 2. Proportion of workers in regular wage employment by type of enterprise, India.

	Informal sector	Government sector	Corporate sector
61st survey round (2004–2005)	42.40%	34.01%	12.91%
68th survey round (2011–2012)	40.79%	30.03%	19.8%

Source: NSS (National Sample Survey) unit-level data.

The largest generation of regular wage employment was to be seen in the private sector, with a reduction in the share of regular wage jobs within the informal sector. The share of regular wage jobs in Private/Public Limited Companies (hereafter referred to as the Corporate Sector) increased from 12.9% in 2004–2005 to nearly 20% by the 68th round in 2011–2012, accompanied by a reduction in the share of jobs within the Government sector as well as the informal sector.⁴ However, the informal sector still accounted for a majority of these kinds of jobs (see Table 2).

In real terms, median wages for regular work have shown improvement, rising at an average annual rate of growth of about 12.15% for the rural sector and about 12.5% for the urban sector. However, the increase in wages has not been equally distributed. There has been an increase in the 90/50 wage differential, that is, the ratio of the wages at the 90th percentile to median wages. This differential has grown wider in the case of rural areas as compared to urban, though the magnitude of this increase is not large (Table 3).

International attention to the question of inequality has focused on changes at the very top end of the distribution, that is, wages and the share of wages going to the 99th percentile of wage earners or the top 1% of wage earners. When one looks at this measure, the situation rapidly changes. The wage at the 99th percentile is nearly 7 to 8 times greater than median wages, with the largest differential being seen in the urban sector in 2011–2012. The average wage of the top 1% in urban areas in 2011–2012 is nearly 8.6 times that of median wages. Clearly, growth in the interim period has seen a concentration of urban incomes at the very top. For rural incomes, the trend is reversed, with the wages of the top 1% reducing relative to median wages. The extent of this reduction, however, is not significant. Wages of the top 1% were 7.5 times greater than median wages in 2004–2005, and 7.36 times greater in 2011–2012 (Table 3).

Table 3. Median daily wage/salary earnings and wage inequality indicators, India, 2004–2005 and 2011–2012.

		2004–2005 (Rs/day)	2011–2012 (Rs/day)
Rural	50th percentile	80	178.5714
	90th percentile	300	701.7143
	99th percentile	601.5714	1314.286
	90/50 ratio	3.75	3.9296
	99/50 ratio	7.519	7.3600
Urban	50th percentile	116.714	267.1429
	90th percentile	428.5714	1000
	99th percentile	866.7143	2302.857
	90/50 ratio	3.6719	3.7433
	99/50 ratio	7.4259	8.6203

Source: NSS (National Sample Survey) unit-level data.
Figures given are in Rs. per day and are nominal figures.

The wage received for work is only one of the metrics by which employment quality must be judged. It is important that employment be of a character that satisfies a minimum threshold with respect to the rights of workers. In this regard, the generation of employment in the Indian economy has been inadequate with respect to providing for worker security and the provision of long-term employment. The share of workers under short-term contracts has increased; the burden of such unfavourable terms of employment is no longer restricted to the lower end of the wage distribution, as one might have suspected. Increasingly, workers in high-wage employment have also found themselves experiencing a worsening of conditions.

In 2004–2005, 59.08% of regular wage employees either had no written contract or had a contract whose terms of employment were less than 1 year. By 2011–2012, the share of such workers had increased to 67.10%, an increase of nearly 8 percentage points in as many years. This is a distinctly worrying trend, for even though the share of regular wage employees in the total workforce has increased, the duration of employment for these workers has grown steadily shorter, indicating short-term and precarious employment.

As shown in Table 4, both the rural and urban sectors have shown significant increase in the share of regular employees with short-term contracts. The Secondary sector (which includes Construction, Manufacturing and Mining) has a significant share of workers under short-term employment; in the 68th round, 79.8% of rural and 75.6% of urban workers in this sector are trapped in short-term contracts. The Tertiary sector (which largely includes Services) too has seen an increase in the number of such workers, rising from around 56% to around 65% in the rural sector and from 57.45% to 64.84% in the urban sector.

In terms of enterprises, a majority of workers in informal sector enterprises are on short-term contracts. Nearly 92% of informal sector workers have short-term contracts in 2011–2012, up from 89.49% in 2004–2005. What is significant is that even though

Table 4. Regular wage employees with no written job contract or with employment contract of less than 1 year as a share of total regular wage employees, by industry, India.

	61st survey round (2004–2005)		68th survey round (2011–2012)	
	Rural	Urban	Rural	Urban
Primary	15.55%	35.66%	14.67%	33.05%
Secondary	74.40%	68.45%	79.80%	75.60%
Tertiary	55.93%	57.45%	63.18%	64.84%
Total	56.46%	60.72%	65.44%	68.02%

Source: NSS (National Sample Survey) unit-level data.

The table reads as follows: In the 68th round, 79.80% of all rural Secondary Sector workers had no written contract or had a contract less than 1 year.

Table 5. Share of insecure regular wage employment within each enterprise type.

	68th survey round	61st survey round
Informal sector	89.49%	92.03%
Government enterprises	24.41%	31.52%
Corporate sector	55.85%	66.60%

Source: NSS (National Sample Survey) unit-level data.

Figures do not add up to 100%.

regular employment increased in the Corporate Sector – as seen from Table 2 – the share of workers on short-term contracts has also increased, from 55.85% to 66.60%. Moreover, even though the share of regular wage workers employed by the Government reduced over this period, the share of those workers on short-term contract in Government enterprises increased, from 24.41% to 31.52% as seen in Table 5.

The reduction in the length of contract is not confined to low-wage workers but has been affecting workers at the higher end of the wage distribution as well. Figures 1 and 2 map these changes. Workers are arranged in deciles by average nominal daily wages, and the share of workers within each decile who do not have access to long-term contracts is plotted for the rural and urban sectors.

In the case of workers with no written contract (Figure 1(a) and (b)), all workers in 2011–2012 in both the rural and urban areas earning below the median wage (the 5th decile) saw no significant improvement in their position compared to 7 years ago, while that of their counterparts above the median wage deteriorated. The reductions in the shares of such workers among certain deciles were miniscule. Almost 17% of all rural workers and 21% of all urban workers had no written contract in 2011–2012.

In terms of the number of workers with contracts of less than 1 year (Figure 2(a) and (b)), in the rural areas, the biggest increase is seen for those in the 2nd and 3rd deciles, while in urban areas there was a large increase for workers in the 4th and 5th deciles, and a significant increase for those in the very top end. The share of urban workers in the top

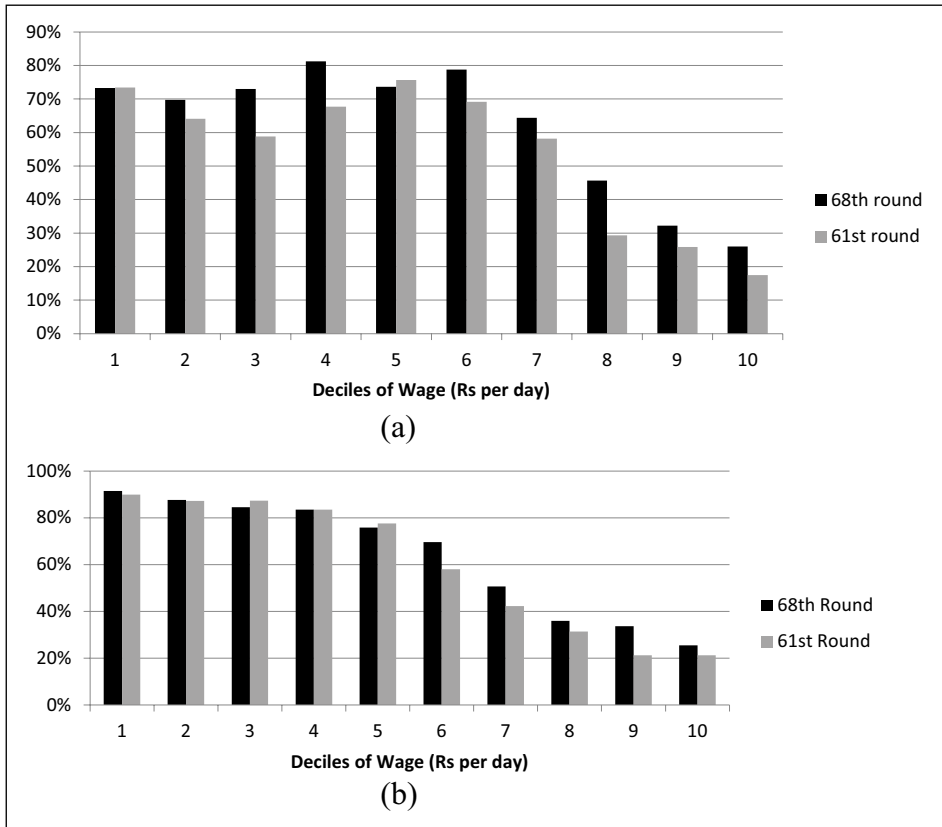


Figure I. (a) Rural wage workers with no written contract, as share of rural wage workers in each wage decile and (b) urban wage workers with no written contract, as share of urban wage workers in each wage decile.
 Source: NSS (National Sample Survey) unit-level data.

decile with a contract less than 1 year was larger than all other categories except for those between the 4th and 5th deciles.

The above exercises make it clear that there is little to celebrate with regard to the expansion of wage employment over the last few years. Low-wage jobs have remained prevalent in the secondary and tertiary sectors, while there has been a steady decrease in protections afforded to workers. More workers found themselves working in short-term jobs with no written contract, testifying to the large mass of informal employment. Economic growth over the period 2004–2005 to 2011–2012 led mainly to the expansion of a low-paid, insecure and unprotected labour force.

Regression analysis: Impacts on wage determination

If wages are determined through bargaining between labour and capital, then the increase in short-term contracts only weakens the bargaining power of workers. Those workers

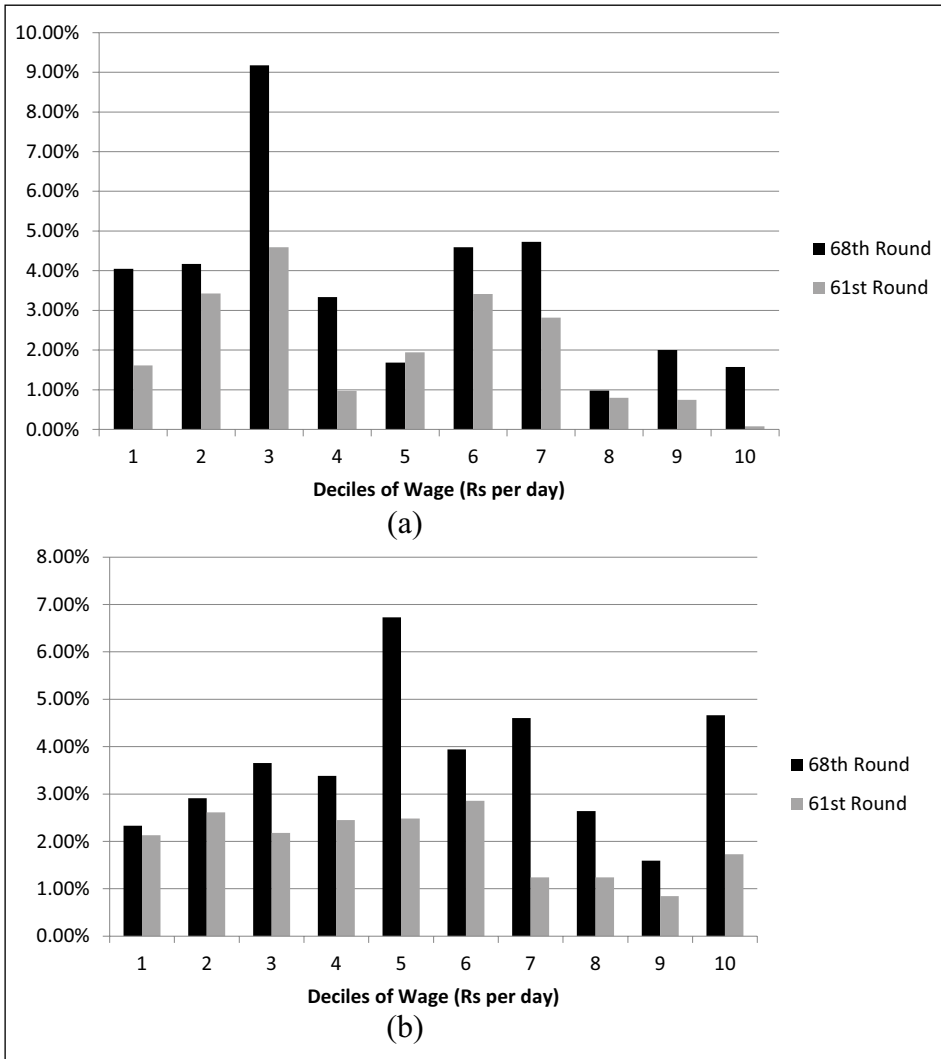


Figure 2. (a) Rural wage workers with contract less than 1 year as share of rural wage workers in each wage decile and (b) Urban wage workers with contract less than 1 year, as share of urban wage workers in each wage decile. Source: NSS (National Sample Survey) unit-level data.

with short-term contracts are at a significant disadvantage when compared to those with longer term contracts, in that they can be easily fired and hence do not have the power to successfully agitate for higher wages. We should thus expect to see strong negative correlations between the number of workers in short-term contracts and relative wages.

The use of a simple *t*-test can tell us whether there exists a significant difference in wages between those with short-term contracts and those with long-term contracts; this

Table 6. Difference in wages for short-term and long-term contracts.

	61st survey round		68th survey round	
	Average wages (Rs. per day)		Average wages (Rs. per day)	
	Rural	Urban	Rural	Urban
Long term	214.9014	292.0295	535.6977	715.1916
Short term	122.4542	125.5547	289.9575	326.478
Difference	92.4472	166.4747	245.7402	388.7135
t-statistic	43.9441	63.8435	45.1615	37.2938
p value (difference > 0)	0.00000	0.00000	0.00000	0.00000

Source: NSS (National Sample Survey) unit-level data.

hypothesis was tested for both the 61st round of the NSS and the 68th round, and the results are outlined in Table 6.

In both NSS rounds, for both rural and urban sectors, those with longer term contracts (greater than 1 year) earned much more than those with short-term contracts; the *t*-tests reveal that this difference is highly significant. The difference between wages for those with different types of contracts has increased in absolute terms: urban workers with longer term contracts earn more than twice the wage of workers with short-term contracts.

In order to test the hypothesis that the prevalence of short-term employment contracts is linked adversely to wages, a cross-sectional regression exercise was conducted using unit-level data from the 61st round and the 68th round of the NSS survey. Since the data collected by the NSS do not follow the same individuals across time, the two cross-sectional regressions carried out would not be able to control for unaccounted heterogeneity; this is a weakness that must be acknowledged.

A simple log-linear regression was run to test for the impact of short-term contracts on the logarithm of wages. The form of the regression is

$$\text{Log}(y_i) = \alpha + \beta_1 \text{Short term}_i + \sum_{j=2}^n \beta_j C_{ij} + \varepsilon_i \quad (1)$$

where ε_i is an error term, y_i is the daily wage of individual i , Short term_i is a dummy variable that takes the value 1 if the worker is on a short-term contract and 0 otherwise, and $(C_{i1}, C_{i2}, \dots, C_{in})$ is a vector of covariates that influence wages for the i th individual. A number of characteristics is controlled for, as follows:

Demographic characteristics. Caste and gender are the major demographic variables controlled for. The presence of a substantial wage penalty for women has been demonstrated by Deshpande et al. (2015), while Madheswaran and Singhari (2017) have shown that there exist significant wage penalties for lower castes in the Indian labour force. In terms of caste, the categories considered are those officially classified as Scheduled Castes

(SC), Scheduled Tribes (ST), Other Backward Castes (OBC) and Others. The category Others forms the base category, generally meant to include the more privileged and better-off castes in society.

Education. A total of six categories controlling for various levels of education are included here: those workers who are illiterate, literate and/or with schooling up to the Primary Level, Middle School, Secondary and Higher Secondary, those with a Diploma/Certificate and those who are Graduates or Postgraduates. One would expect workers with a higher level of education to enjoy higher wages relative to those with lower education levels (Agrawal, 2012). Illiterate workers are considered as the base category, and all other educational categories are compared to it.

Type of enterprise. A set of six dummy variables have been introduced to control for the kind of enterprise employing the worker. Proprietary and Partnership Enterprises represent the informal sector, while the other sectors are the Government sector, Public/Private Limited Companies, Co-operative Societies, Employer's Households and Others. Previous studies have testified to a significant wage premium in the Government sector as compared to the private economy (Azam and Prakash, 2010). Wages are also likely to be high in more productive enterprises, and hence one could expect workers in Private Limited Companies to enjoy a wage premium.

Industry and sector. Given that much of India's growth has been occurring in the tertiary sector, a set of dummies to control for the particular sector or industry of the worker's employment – whether Primary, Secondary or Tertiary – has also been included. Moreover, controls have been introduced for whether the worker is in the urban or rural sector.

A dummy has also been introduced to check for whether the worker is in a union or not, as belonging to a union conveys a significant wage premium.

The regression equation outlined in equation (1) was run for the sample of regularly employed workers in the 61st and 68th rounds of the NSS, and the results are shown in Table 7. The coefficients show the expected signs; there is a significant wage penalty for women and SCs, and those with higher levels of education earn a significant wage premium over those with lower education levels. Workers in Government Enterprises earn significantly more than those in other forms of enterprises, with the premium on Government employment increasing from the 61st to the 68th round. Union members enjoy a significant wage premium, though the premium has reduced over the same period. Surprisingly, Scheduled Tribe workers earned, on average, significantly more than the base category in 2004–2005, though this effect had faded away in 2011–2012.

After controlling for various factors, the coefficients on the indicator variable for whether the worker is on a short-term contract or not were negative and statistically significant for both rounds, and increased over the period in question. All else remained constant: regular workers on short-term contracts earned around 19% less than workers on longer term contracts in 2004–2005, with the wage penalty increasing to around 21.1% in 2011–2012.⁵

Table 7. Regression estimates: simple OLS.

Dependent variable: log (wage)		
Variable	61st round	68th round
Short term	-0.2079** (0.008)	-0.2334** (0.0087)
Age	0.0604** (0.0017)	0.0517** (0.0019)
Age-squared	-0.0006** (0.00002)	-0.00046** (0.000025)
Union member	0.2958** (0.0081)	0.2031** (0.00831)
Female	-0.4262** (0.0096)	-0.4085** (0.00984)
Urban	0.1872** (0.0064)	0.1908** (0.0068)
Sector		
Secondary	0.0883** (0.0312)	0.0717 (0.0374)
Tertiary	0.03841 (0.0307)	0.0097 (0.037)
Caste		
OBC	-0.1755** (0.007)	-0.1105** (0.0077)
SC	-0.188** (0.0094)	-0.1552** (0.01004)
ST	0.0281** (0.0101)	0.0119 (0.0105)
Education		
Diploma/Certificate	0.7768** (0.0173)	0.7984** (0.01987)
Graduate and above	0.8947** (0.014)	0.9088** (0.0157)
Literate and Primary	0.1996** (0.0135)	0.1576** (0.0160)
Middle	0.2881** (0.0135)	0.2489** (0.01580)
Secondary and Higher Secondary	0.4948** (0.0132)	0.471** (0.0151)
Type of enterprise		
Corporate	0.2414** (0.0212)	0.26** (0.0231)
Employer's Household	-0.2048** (0.0251)	-0.2252** (0.0296)
Government	0.4008** (0.0186)	0.4395** (0.0217)
Others	0.0856** (0.0306)	-0.1153** (0.0288)
P&P	0.0041 (0.01898)	0.0126 (0.0218)
Constant	2.7695** (0.0492)	3.7688** (0.0583)
Number of observations	40,610	38,735
R ²	0.5938	0.5256

OLS: ordinary least squares; OBC: Other Backward Castes; SC: Scheduled Castes; ST: Scheduled Tribes (official classification); P&P: Proprietary and Partnership Enterprises.

Figures in parentheses are standard errors.

**Significance at 1% level.

The simple ordinary least squares (OLS) regression estimates the *average* wage penalty for a worker on a short-term contract, but the effect of a short-term contract on wages may be different at different wage levels. High-wage workers may or may not experience the same penalty for short-term contracts as low-wage workers. The effect of an independent regressor at different levels of the dependent variable can be estimated by using the method of quantile regression (Koenker and Hallock, 2001).

The problem with the standard quantile regression approach is that it is only able to estimate the conditional effect on the *t*th quantile as a result of a change in an independent

Table 8. Unconditional quantile regression estimates: 2004–2005.

Dependent variable: log (wage)				
Variable	10th quantile	25th quantile	50th quantile	95th quantile
Short term	−0.0876** (0.0139)	−0.1984** (0.0118)	−0.4433** (0.0176)	−0.1053** (0.0183)
Age	0.1286** (0.0051)	0.1174** (0.0032)	0.0664** (0.0029)	−0.0206** (0.0026)
Age-squared	−0.0015** (0.00006)	−0.0013** (0.00004)	−0.0006** (0.00003)	0.0005** (0.00003)
Female	−0.8685** (0.0247)	−0.6369** (0.01596)	−0.4564** (0.0171)	−0.1590** (0.016)
Urban	0.1554** (0.0141)	0.1797** (0.0111)	0.2573** (0.013)	0.2421** (0.0126)
Union member	0.1809** (0.0134)	0.2710** (0.0122)	0.5878** (0.0182)	0.1133** (0.0178)
Sector				
Secondary	0.2172* (0.0862)	0.0992 (0.058)	−0.0475 (0.0537)	0.0504 (0.03911)
Tertiary	0.1321 (0.0852)	0.0102 (0.057)	−0.0526 (0.0529)	−0.0305 (0.0375)
Caste				
OBC	−0.1875** (0.0158)	−0.2043** (0.0128)	−0.2381** (0.01471)	−0.1795** (0.0146)
SC	−0.2142** (0.023)	−0.2020** (0.0171)	−0.2726** (0.0185)	−0.1496** (0.0165)
ST	0.0476* (0.0193)	0.0505** (0.0159)	0.1681** (0.0214)	−0.1296** (0.0227)
Education				
Diploma/ Certificate	0.8229** (0.0411)	0.8053** (0.0296)	1.069** (0.0336)	0.3819** (0.0336)
Graduate and above	0.7839** (0.0379)	0.7978** (0.0256)	1.1688** (0.0259)	0.8737** (0.0231)
Literate and Primary	0.4529** (0.0412)	0.3271** (0.0269)	0.14202** (0.0233)	0.0099 (0.0093)
Middle	0.5603** (0.0401)	0.4275** (0.0272)	0.3011** (0.0248)	0.0286** (0.0107)
Secondary and Higher Secondary	0.6895** (0.038)	0.6127** (0.0257)	0.6625** (0.0243)	0.1018** (0.0132)
Type of enterprise				
Corporate	0.0598 (0.0429)	0.2470** (0.0357)	0.395** (0.0455)	0.3337** (0.0416)
Employer's Household	−1.040** (0.071)	−0.4259** (0.0452)	−0.0341 (0.04516)	0.2775** (0.0324)
Government	0.0581 (0.0389)	0.2693** (0.0322)	0.9448** (0.0405)	0.2566** (0.0334)
Others	−0.0593 (0.0697)	0.0559 (0.0545)	0.1256* (0.0631)	0.1315** (0.0429)
P&P	0.0302 (0.0422)	−0.0587 (0.0348)	−0.2030** (0.041)	0.1502** (0.03102)
Constant	0.5307** (0.1393)	1.2235** (0.0904)	2.3787** (0.0864)	5.843774** (0.0634)

OBC: Other Backward Castes; SC: Scheduled Castes; ST: Scheduled Tribes (official classifications);

P&P: Proprietary and Partnership Enterprises.

Figures in parentheses are standard errors.

*Significance at 5% level; **Significance at 1% level.

regressor X (conditional on the sample means of the other covariates) and not the *unconditional* effect. The Recentered Influence Function (RIF) approach of Firpo et al. (2009) provides a methodology by which one can estimate the unconditional quantile effects arising due to a change in the regressors.⁶

Tables 8 and 9 outline the results of the RIF regressions on the 10th, 25th, 50th and 95th quantiles for the 61st and 68th NSSO survey rounds, respectively. As can be seen,

Table 9. Unconditional quantile regression estimates, 2011–2012.

Variable	10th quantile	25th quantile	50th quantile	95th quantile
Short term	-0.0702** (0.0099)	-0.1821** (0.0105)	-0.4167** (0.01674)	-0.1417** (0.0165)
Age	0.0754** (0.0038)	0.0835** (0.0030)	0.06715** (.0032)	-0.0153** (0.0028)
Age-squared	-0.00088** (0.000046)	-0.0009** (0.000037)	-0.00057** (0.00004)	0.0004** (0.00004)
Female	-0.5774** (0.0169)	-0.5184** (0.0139)	-0.4311** (0.0163)	-0.0831** (0.0144)
Urban	0.10573** (0.01017)	0.1655** (0.0102)	0.2805** (0.01278)	0.1548** (0.0113)
Union member	0.1069** (0.00967)	0.1825** (0.0105)	0.3657086** (0.0161421)	0.0793** (0.0157)
Sector				
Secondary	0.1307* (0.0585)	0.1249* (0.0566)	0.0617 (0.0706)	0.0376 (0.0655)
Tertiary	0.02177 (0.0576)	0.0271 (0.0555)	0.0207 (0.0696)	0.0081 (0.0646)
Caste				
OBC	-0.04157** (0.01147)	-0.0674** (0.0115)	-0.1168** (0.0147)	-0.1512** (0.0136)
SC	-0.0538** (0.0163)	-0.1142** (0.0159)	-0.1978** (0.0189)	-0.1287** (0.0156)
ST	0.0598** (0.0136)	0.0646** (0.0139)	0.0725** (0.01978)	-0.12124** (0.0201)
Education				
Diploma/ Certificate	0.6824** (0.0333)	0.8268** (0.0300)	1.0931** (0.0363)	0.3084** (0.0317)
Graduate and above	0.6707** (0.0302)	0.7872** (0.0257)	1.1668** (0.0262)	0.5815** (0.01801)
Literate and Primary	0.2376** (0.0344)	0.1818** (0.0283)	0.1043** (0.0254)	0.0455** (0.0097)
Middle	0.3879** (0.0327)	0.3218** (0.0280)	0.2118** (0.0264)	0.0564** (0.0109)
Secondary and Higher Secondary	0.5445** (0.0304)	0.5523** (0.0259)	0.5727** (0.0252)	0.0685** (0.0116)
Type of enterprise				
Corporate	0.1153** (0.0338)	0.2564** (0.0353)	0.3275** (0.0456)	0.2936** (0.0350)
Employer's Household	-0.7247** (0.0603)	-0.3884** (0.0469)	-0.0943* (0.048)	0.1892** (0.0307)
Government	0.045 (0.0323)	0.2763** (0.0331)	0.9217** (0.0426)	0.1846** (0.0306)
Others	-0.2634** (0.05218)	-0.2647** (0.0485)	-0.1837** (0.0528)	0.1248** (0.0325)
P&P	-0.0049 (0.0340)	-0.0043 (0.0348)	-0.08884* (0.0427457)	0.1299** (0.0288)
Constant	2.649** (0.1040)	2.652** (0.0902)	3.026589** (0.1037668)	6.7231** (0.0832)

OBC: Other Backward Castes; SC: Scheduled Castes; ST: Scheduled Tribes (official classifications);

P&P: Proprietary and Partnership Enterprises.

Figures in parentheses are standard errors.

*Significance at 5% level; **Significance at 1% level.

the estimates on the short-term contract dummy are all negative and significant. The estimates in each round follow a U-shaped pattern, in that the penalty increased as wages increase, and then reduced. Low-wage and high-wage workers had a lesser penalty compared with middle-wage workers, for whom the penalty was significantly high. The

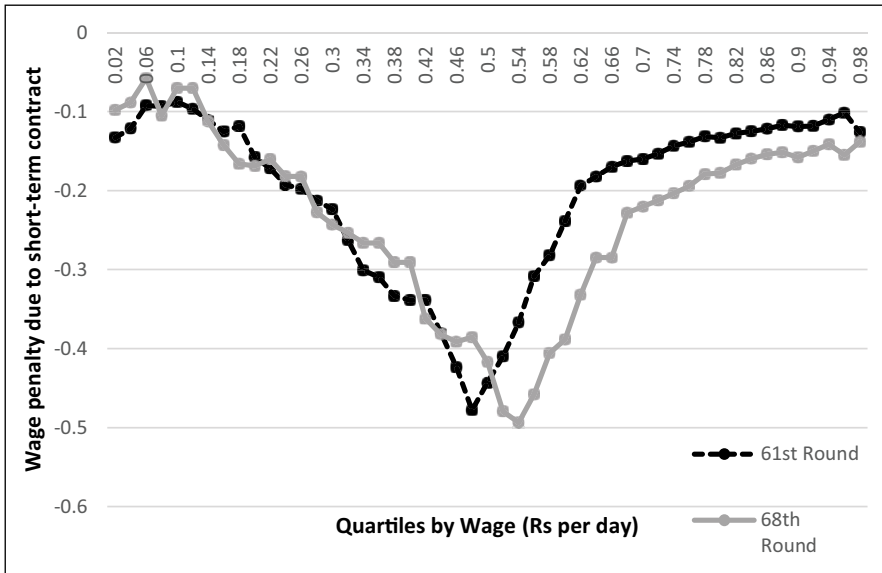


Figure 3. Unconditional quantile regression estimates of effect of short-term contracts on wages.

The graph shows the unconditional effect of short-term contracts on wages for different quantiles for both the 68th round and the 61st round data. The y-axis measures the coefficient on the dummy that indicates whether the worker is on a short-term contract or not. It therefore shows the difference in wages for a worker on a short-term contract relative to one on a longer term contract, all else remaining equal.

penalty for workers at the median was almost double that estimated from the standard OLS regression for both rounds. Moreover, the penalty was higher for high-wage workers than for low-wage workers (though both were significantly lower than that of the median worker). These findings stand in direct contradiction to those of Bosio (2014) who found a larger penalty for low-wage workers as compared to high-wage workers for the case of Italy, and Comi and Grasseni (2012) who showed similar findings for a range of European countries.

The second important point is related to the change in the wage penalty from the 61st round to the 68th round. This is illustrated in Figure 3, which plots the coefficient on the short-term contract dummy from the 2nd quantile to the 98th quantile for both rounds. The coefficients are negative throughout, indicating that at all levels of the wage distribution, a worker on a short-term contract was at a disadvantage compared to a worker on a longer term contract. For workers below the median, the wage penalty in 2011–2012 showed little to no difference from that in 2004–2005; if anything, there was a marginal decrease. But for workers above the median, the penalty showed a significant increase. The estimates of the RIF quantile regression for quantiles above the median for the 68th round were lower than for the 61st round at all points, indicating that the penalty for high-wage workers – in terms of the nominal wage – increased during the period of high growth between the two NSSO rounds.⁷

These findings indicate that the period of rapid growth in the Indian economy has led to significant changes in the bargaining power of workers at all levels of the distribution.

There is no doubt that foregone income for short-term workers would have a greater negative impact on those at lower wage levels, pushing them closer to poverty, even if their wage penalty for being on a short-term contract was lesser, in percentage terms, than high-wage workers.⁸ Yet the fact that high-wage workers on temporary contracts may still have wealth and other resources to tide them over such significant wage penalties does not mitigate or explain the outcome identified, especially in a period of extremely high growth, driven by a boom in services and software exports (Nagaraj, 2013), where one would expect a greater demand for better educated and higher paid workers.

These are puzzling outcomes and provide fertile grounds for further research into the specific wage effects of the spread of short-term contracts within the formal labour market. One limitation of the study is that it compares only the 61st and 68th NSSO data collection rounds. It is vital that NSS data for the current period be released so that the impact of contractualisation can be further studied and tracked.

Conclusion

This study largely points to the fact that worker characteristics – such as skill and/or education – alone must not be considered as the prime determinant of wages, for conditions of work play a major role in explaining why some workers are paid more than others. Workers in regular wage employment in India are increasingly finding themselves on short-term and insecure contracts, which reduces bargaining power and hence reduces their wages relative to workers with the same characteristics on more secure contracts. This effect is seen all along the wage distribution; both high-wage and low-wage workers suffer lower wages as compared to workers on more secure contracts.

The difference in wages for workers on differing types of contracts across the wage distribution does not reflect the differing extents of contractualisation seen among them. Roughly 80% of low-wage workers are on insecure contracts, as compared to around 20% to 30% of high-wage workers. Yet the effect of insecure contracts on wages has been marginally higher for high-wage workers as compared to low-wage ones. The penalty to high-wage workers for being on a short-term contract increased between 2004–2005 and 2011–2012, while no real change occurred for low-wage workers. These findings suggest that the effects of the spread of contractual insecurity into higher wage sectors of the labour market are most clearly visible in the loss of wage premia formerly associated with length of tenure, such as incremental salary scales. Such possible explanations require further systematic investigation.

What cannot be denied, though, is that the degradation of conditions of work has occurred during a period when the Indian economy experienced unprecedented rates of growth, second only to China. If ever proof was needed that a situation of high growth does not automatically imply benefits to labour, one need only look to the worsening conditions of the relatively better-off section of the Indian working class. One must therefore question the insistence of mainstream discourse calling for a return to India's high-growth trajectory.

Finally, even though the study is largely focused on differences in wages, it does point to an alternative explanation with regard to one of the more pressing questions of

our time, the distribution of income. Given that contractualisation and informalisation of work have increased over the years, it stands to reason that it would have impacted the overall share of wages in the Indian economy as well. These trends are not isolated to India. Robert Solow (2015) proposed that one of the major factors determining income distribution in the US has been shifts in bargaining power that influence the control over economic rents. Solow asserts that the reduction in ‘social bargaining power of labour’ has contributed to the lagging of real wages behind productivity growth, and one of the main reasons for this attenuation of bargaining power has been the increasing ‘casualisation’ of labour. The spread of informal work arrangements including zero-hour contracts in the UK and of subcontracting and app-based businesses such as Uber and Airbnb may be exacerbating the problem of inequality through a reduction in labour’s bargaining power. These developments, and possible responses, have been canvassed in the case of Australia and Canada (see, for example, Knox, 2018; Lewchuk, 2017; Quinlan and Sheldon, 2011; Stanford, 2017). The focus on insecure work contracts in a developing economy, carried out in the present study, is an attempt to take this direction of analysis further.

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Notes

1. ACTRAV is an acronym for the International Labour Organisation’s (ILO) Bureau for Workers’ Activities.
2. For the debate on whether the ‘precariat’ is a class or not, see Breman (2013), Wright (2016) and responses by Standing (2014, 2016).
3. More specifically, workers were classified according to Usual Activity Status taking both their Principal and Subsidiary status together. The Principal status looks at the respondent’s work activity for a major part of the preceding 365 days; someone who is not classified as a worker according to their Principal Status might have been engaged in some work as a subsidiary activity for a period not less than 30 days. The respondent would then be classified as a worker when taking their Principal and Subsidiary Activity together. Those whose Usual Activity Status (taking Principal and Subsidiary Status together) is that of a regular wage worker are identified by code 31 in the National Sample Survey Organisation (NSSO) surveys.
4. The informal sector is identified by the category Proprietary and Partnership Enterprises.
5. If β be the coefficient on the indicator variable in the ordinary least squares (OLS) regression, the percentage change in the dependent variable as a result of the indicator variable going from 0 to 1 is given by $100 \cdot [\exp(\beta - 0.5 \times \text{var}(\beta)) - 1]$, where $\text{var}(\beta)$ is the square of the standard error (Kennedy, 1981).

6. See Borah and Basu (2013) for a demonstration of how the estimates from unconditional quantile regressions that make use of a Recentered Influence Function differ from a standard quantile regression.
7. Since the individual units differ between the two rounds, unobserved heterogeneity cannot be accounted for.
8. I am indebted to an anonymous referee on an earlier draft for the clarification.

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Author biography

Rahul Menon teaches at the School of Livelihood and Development at Tata Institute of Social Sciences, Hyderabad. His areas of interest lie in the economics of growth, macroeconomics, labour economics and inequality.