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The Incidence of Visible Underemployment: Evidence for Trinidad and Tobago

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Centre for Research in Economic Development and International Trade, University of Nottingham

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Abstract
This paper presents an empirical analysis of the incidence of visible underemployment in Trinidad and Tobago. Visible underemployment consists of workers who work less than the normal duration of working hours but are willing and available to work more. We find that compared to other groups of the labour force the visibly underemployed tend to be less educated and are more likely to work in the private sector. We also find that their revealed behaviour is consistent with their desire for more hours. Relative to the jobs of the visibly underemployed, full-time jobs would, in addition to providing more hours, be more attractive because of greater employment stability and higher returns to job specific attributes, although the personal characteristics of the visibly underemployed are better rewarded in their own jobs. Only about 50 per cent of the visibly underemployed are able to find full-time employment within three months and little except firm size helps predict who will.

Outline

I. INTRODUCTION

While policy makers and economists alike have focused extensively on the incidence of unemployment as an indicator of labour market slack, studies of the underemployed as an underutilized labour resource have been scarce. Research on this topic appears to be particularly relevant for developing countries where the incidence of underemployment is commonly assumed to be a more acute problem, since labour markets are generally not as efficient and there tend to be large informal sectors in developing countries. The International Labour Office (ILO, 1990) argues that the reason that unemployment in many developing countries appears to be low is that relatively few workers in the developing world are covered by unemployment compensation or other public relief schemes, and hence can only afford to remain unemployed for very short periods and are thus likely to take up any economic activity, however "little or inadequate that may be" (ILO, 1990, p. 122). This conjecture has important policy implications as it hints not only at underutilisation of resources and possible inefficiencies in the labour market, but also at the issue that underemployment may further add to income inequalities in developing countries.

Underemployment is typically categorised into visible and invisible underemployment, where the former consists of work of inadequate duration, i.e., both involuntary part-time employment and temporary short-time work, while the latter encompasses work of inadequate productivity.[1] The ILO suggests measuring the latter by looking at differences in income or use of workers' skills which is not as straightforward as measuring durations. Hence, most attention in the literature has been given to visible underemployment given the obvious difficulties in defining and measuring 'inadequate' productivity.

For the developed world studies of underemployment have almost exclusively examined involuntary part-time employment in the US. For instance, Stratton (1996), examining employment preferences and opportunities, finds that involuntary part-time workers are indeed 'involuntary'. Other studies on the US include Bednarzik (1975), Leppel and Clain (1988), Nardone (1986), and Stratton (1994). Ruiz-Quintanilla and Claes (1996)

undertake a study of the determinants of youth underemployment for six European Union countries. However, their definition of underemployment is somewhat different from the definition used by the ILO and in our approach, as it also includes youth unemployment along with part-time and temporary employment.

Systematic studies of underemployment in developing countries are even scarcer. Robinson and Abbasi (1979) present some summary statistics on the incidence of underemployment in Pakistan. They use highly aggregated data from the Pakistan Labour Force Survey for the period 1968 – 1975 in an attempt to measure visible and invisible underemployment. The former is defined as persons working less than 35 hours per week, while they attempt to measure the latter by looking at productivity per worker in different sectors. Their assumption is that if labour productivity in a sector does not increase over the period this is due to an increasing number of workers offsetting the "natural tendency" for productivity in developing countries to rise, and that is taken as a sign of underemployment. Overall, the authors find that the extent of underemployment in Pakistan is low and that it is concentrated mostly in agriculture, trade and services.

Kushwaha and Thakur (1984) undertake a somewhat more elaborate study attempting to measure and analyse both visible and invisible underemployment in an agrarian region in India. They use measures of income and productivity to examine the latter. The data used were collected by the authors themselves by conducting interviews with around 100 households in the region in 1980/81. They present aggregate summary statistics on visible underemployment and invisible underemployment defined by an income criterion. To look at invisible underemployment based on differences in productivity they estimate a simple production function and compare the coefficients on labour for different size establishments. Overall, they find that underemployment appears to be most prevalent for workers in very small establishments and that it shows a tendency to decrease with in an increase in establishment size.[2]

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1 More recently the ILO has opted to define invisible underemployment as other forms of underemployment to reflect that there are more than one type of invisible underemployment and that this form of underemployment is measurable, although with considerably more difficulty than visible underemployment.

2 In a further related paper, Eaton (1992) presents a brief study of migration of females in the Northeastern region of Brazil. He finds that those migrating are likely to be looking to secure a job in the informal sector rather than a modern or formal job. This can be taken as evidence that those migrants may be underemployed in the informal sector.

Adding to the literature on underemployment in developing countries, this paper investigates the incidence of visible underemployment in Trinidad and Tobago (T&T) using three years, 1996-1998, of the T&T labour force survey, known as the Continuous Survey Sample Population (CSSP). Our study presents a more sophisticated approach to analysing the incidence, determinants and other aspects of visible underemployment than previous studies for developing countries, reviewed briefly above, as we utilise rich micro-level data, with which we can also document workers' experience over time. Trinidad and Tobago presents an ideal case study of underemployment in a developing country in that its labour market slack has been high, particularly since the 1980s, in that it does not provide any official social safety net for the unemployed, and in that it is characterised by a large informal sector (see Rambarran, 1998). Using our data we investigate how the visibly underemployed differ from others in the labour force in T&T, and determine whether their hours preferences are consistent with their revealed behaviour. We also examine whether there are aspects other than more hours, namely greater employment stability and pay, associated with full-time jobs. Finally, we assess the success of the visibly underemployed of obtaining full-time employment over time.

For these tasks our paper is organised as follows. In Section II we briefly outline the definitional issues surrounding underemployment and provide some crude international comparisons of visible underemployment. The subsequent section describes our data source and discusses aggregate statistics derived from this. In Section IV we examine whether the personal and workplace characteristics of the visibly underemployed differ from others in the labour force and whether their assumed preferences are consistent with job search behaviour. Section V contains an investigation of whether there are other aspects, apart from longer hours and hence overall greater income, of full-time jobs that make them more attractive than the jobs occupied by the visibly underemployed. In the penultimate section we assess the prospects of the visibly underemployed obtaining full-time jobs. Concluding remarks are provided in the final section.

II. DEFINITIONAL ISSUES AND INTERNATIONAL COMPARISON

Definitional Issues

As noted in the introduction, underemployment consists of both its visible and invisible factors. While one would ideally like to study both forms of underemployment, the data

requirements to examine the invisibly underemployed cannot be met by most labour force and household surveys, including the one used in this paper. The ILO itself recognises that while visible underemployment is a statistical concept relatively easy to deal with, invisible underemployment is "primarily an analytical concept reflecting a misallocation of labour resources or a fundamental imbalance as between labour and other factors of production" (ILO, 1990, p. 143) and hence would involve the analysis of a wide variety of data, including data on potential income, skill, and productivity. Hence our focus, as in almost all other studies, will be on the visibly underemployed.[3]

The problem of how to define and measure visible underemployment was first discussed by the ILO in 1925 in the Second International Conference of Labour Statisticians (ICLS), although it was not until 1966 that the Eleventh ICLS adopted the first international statistical definition of underemployment and established the foundations for the current guidelines. The guidelines have since undergone several revisions, most recently in 1998. Accordingly, an employed person is considered visibly underemployed, also known now as time-related underemployed, if he/she is

(a) willing to work additional hours
(b) available to work additional hours
(c) and worked less than a threshold relating to working time (in the reference period)[4]

There are a number of points to note with regard to the above criteria. Firstly, willingness may be expressed solely through actual or implicit desire or through actual job search. However, particularly with regard to job search, it must be realised that job search may play a different role in developing compared to developed countries.[5] In considering a threshold, the ILO recommends choosing according to national circumstances, where this may be determined by, for example, "the boundary between full-time and part-time

3 It is important to note that these two groups are not mutually exclusive. Very likely many of the visibly underemployed will not only be working less than the normal duration of hours, but also be employed in jobs in which they are below their potential and desired productive capacity.

4 The reference period may vary substantially over countries, although it usually falls between one week and one month prior to the interview.

5 In many developing countries there are no clear channels for the exchange of labour market information, making job search timely and costly. Additionally, particularly in rural areas, the information on available

employment, median values, averages, or norms of hours of work as specified in relevant legislation, collective agreements, agreements on working terms or labour practices in countries" (ILO, 1998). Finally, the ILO is careful to point out that visible underemployment relates to persons who are willing and able to work hours in addition to hours worked in all jobs. For example, under their definition a person working two jobs, but the total hours of which compromises normal full-time duration, would not be considered to be visibly underemployed.

In considering these criteria, the visibly underemployed can be thought of as consisting of two groups of workers. Firstly, those that work part-time but desire and were available to work the normal duration of hours, and, secondly, temporary short-time workers who at times work full-time but during the reference week worked less than but desired to work the normal duration of hours. In essence the former group can be thought of as a structural type of underemployment, while the latter can be seen as reflecting a cyclical form (ILO, 1998).

International Comparison

In seeking to assemble internationally comparable measures of visible underemployment it must be realised that, although the revisions of definitions introduced until the most recent resolution were not substantial, the criteria on which the definition of underemployment were based were recognised to be inadequate until its most recent revision in 1998 (ILO, 1998). In consequence, few countries applied these criteria consistently, "resulting in a panapoly of national definitions and making it difficult to compare the levels of visible underemployment between countries" (ILO, 1998). Hence, compared to other labour market measures statistics on the underemployed comparable across countries are relatively scarce and difficult to compare.

Nevertheless, in order to give some indication of the magnitude of visible underemployment in different countries we compiled cross-country figures on the underemployment rate, i.e., the number of underemployed relative to the number of employed, for 38 different nations using the ILO's KILM (Key Indicators of the Labour

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employment opportunities may be near perfect. For instance, Byrne and Strobl (2000) find that for some groups of the unemployed in T&T job search may be as meaningful as it may be in developed countries.

Market) database. Summary statistics of these are shown in Table 1 for the developed and developing countries as groups and individual figures for developing economies.[6] As would be expected, the average underemployment rate for developing countries is higher than that for our sample of developed countries, particularly if we exclude transition countries from the former.[7] As pointed out in the introduction, this may reflect differences in labour markets between developed and developing countries, with that latter being generally not as efficient and characterised by large informal sectors which are conducive to employment being less than full-time.

Table 1: International Comparison of Time-Related Underemployment Rate

Country	Year	Underemployment Rate
All Developed (mean of 22)	Various	3.7
Sweden (highest developed)	1995	7.5
Luxembourg (lowest developed)	1995	0.6
Bulgaria	1996	0.3
Costa Rica	1996	12.8
Czech Republic	1996	1.0
Ecuador	1996	2.0
French Guiana	1993	8.6
Guadelopa	1993	13.8
Hungary	1996	1.4
Latvia	1996	7.9
Mexico	1993	1.0
Paraguay	1990	2.9
Phillipines	1995	10.0
Poland	1996	1.8
Romania	1996	2.6
Slovakia	1996	0.8
Thailand	1996	3.3
Turkey	1994	0.3
All Developing (mean)	Various	4.4
All Developing (w/o Transition)	Various	6.1

III. DATA SET AND DESCRIPTIVE STATISTICS

In order to examine underemployment in Trinidad and Tobago we use data from the

6 There are some differences in the actual definition of underemployment across countries, so these figures must be viewed with some caution.

Continuous Sample Survey of Population (CSSP). The CSSP was designed as a multi-purpose household survey in 1963 with its primary objective being to provide up-to-date data on the labour force characteristics of the population of T&T on a continuing basis. As such it has served as the primary source for aggregate statistics on the Trinidad and Tobago labour market, collecting a wide array of labour market relevant information on members of the households surveyed. Since 1987 the CSSP has been carried out on a quarterly basis, with the duration of each quarter to last exactly three months with each month consisting of two periods of a fortnight's duration. Moreover, it is a rotational survey in that households are surveyed three times – a year after the first interview and a last time the quarter subsequent to the second interview. This latter aspect allows us to create short panels for a large number of individuals. Where we needed this aspect of the data we, given the CSSP's close parallel in structure to the US CPS, used a similar algorithm to that proposed by Madrian and Lefgren (1999) to link individuals over time. This involves using questionnaire, household and time invariant individuals' information to link individuals and then using age and its anticipated possible range of changes over time to double check the merges. With regard to the current paper we have gained access to the 1996-98 CSSP surveys.[8,9] In all our estimation we also restricted our sample to include individuals, aged between 15 and 70, employed.

Our first task in identifying the visibly underemployed is to distinguish those that worked below from those that worked at least the normal duration of working time during the reference week (week prior to the interview). We will refer to the former as part-time workers, while the latter are considered full-time workers. For those individuals who worked in the reference week the CSSP provides information on the number of hours worked, placing these into hourly categories. 33 hours per week are considered to be the

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7 However, the variation of underemployment rates across countries is considerable both in the developing and developed countries sample.

8 The only variable that we were denied access to was that of the ethnic background of the individuals surveyed. This is a standard procedure at the Trinidad and Tobago Central Statistics Office. However, it is unlikely that our inability to control for ethnic differences will significantly bias our results. Firstly, Trinidad and Tobago prides itself as one the foremost (racially) non-discriminatory and racially harmonious societies. Secondly, over the past generations there has been a considerable amount of racial intermixing so that it would often be difficult to divide individuals into separate ethnic categories without considerable amount of error. Nevertheless, in our econometric estimation we included detailed regional dummies to control for regional distribution of individuals across ethnic backgrounds. These may serve, albeit crudely, to capture any racial effects.

normal duration of work. Subsequently, we categorise the part-timers into voluntary part-timers (VPT) and involuntary part-time workers (IPT). For persons working less than 33 hours, there is a follow up question, asking the individual to choose among a number of reasons for working less than 33 hours, namely (a) no more work available, (b) new job, (c) illness, (d) temporary layoff, (e) own choice, (f) vacation, and (g) other. Using this information we classified workers working less than 33 hours as part-time employees, and amongst these labelled those that stated that the reason for working less than 33 hours was either (a), (b), or (d) as the visibly underemployed.[10] Thus, our implicit assumption is that workers who had to work part-time due to no more work being available, having started a new job, or being on a temporary layoff would prefer to work full-time rather than part-time.

Two points implicit in our procedure are noteworthy. Firstly, we are not able to distinguish between the two types of visible underemployment, and hence not between its structural and cyclical aspects. Secondly, the willingness and availability to work additional hours criteria are met by the worker's subjective interpretation of the question at hand, and not by some objective criteria, such as job search. However, as mentioned above, although with obvious drawbacks, this subjective assessment may be more appropriate than job search.

Using the three years of data we were able to identify a total of 1,387 involuntary part-timers from a sample of 45,420 persons of working age (14-70 years old), 23,975 of which are part of the labour force.[11] In Table 2 we used this information to calculate the mean quarterly underemployment rate for our three years of data, as well as the unemployment rate, for the total sample and various sub-samples.[12] As can be seen, the underemployment rate lies at 6.7 per cent of the total number of employed, and thus well above the average of our previously discussed sample of developing countries.

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9 Coppin and Olsen (1998) used the 1993 CSSP to study the determinants of earnings in T&T.

10 In practise no single part-time employed person gave 'new job' as reason for working less than 33 hours per week.

11 For these overall figures we use the first observation of each individual in our data set.

12 There is some controversy as to how to best define unemployment. Although the standard ILO criteria requires active job search as a one the criteria, it also recognises that in certain circumstance, such as in developing countries, a more relaxed definition may be employed. Throughout this paper, we use the most flexible

Examining the sub-samples, we find that the female underemployment rate is 1.3 percentage points above that of males. Given the frequent importance of the distinction between urban and rural areas in developing countries,[13] we also derived the equivalent rates for these. Accordingly, the incidence of time-related underemployment is substantially higher in rural areas, nearly 2 percentage points.

Although underemployment and unemployment are both forms of labour market slack, it is not necessarily clear how these should be related. On the one hand, part-time job openings may allow individuals to leave unemployment and hence reduce unemployment. On the other hand, during recessionary times both the number of unemployed may increase while the hours of the employed are being cut. Moreover, the relationship may be different for involuntary part-time workers and temporary short-time workers, which we are not able to distinguish. We thus calculated the correlation coefficient between the underemployment and the unemployment rate. Accordingly, the experience among groups differs dramatically. For the overall sample and the breakdown by gender, the correlation is positive but fairly low. However, a regional breakdown into urban and rural areas reveals a reasonably strong negative correlation. Which relationship (or lack thereof) is more appropriate is likely to depend on what the relevant labour market is.[14]

Table 2: Average Quarterly Unemployment Rate (1996-98) and Time-Related Underemployment Rate

	Underemployment Rate	Unemployment Rate	Correlation
Total Sample	6.7	17.8	0.05
Males	6.2	14.2	0.16
Females	7.5	23.7	0.10
Urban	5.6	18.6	-0.30
Rural	7.5	17.2	-0.42

definition, i.e., we also include those non-employed persons that were not seeking, but wanted a job. See Byrne and Strobl (2000) for a detailed analysis of whether job search is an appropriate criteria for T&T.

13 It has for instance been argued, see ILO (1998), that underemployment may be important in rural sectors, as agricultural communities will tend to divide work amongst themselves in the face of negative shocks.

14 For the US Tilly (1991) finds a strong positive correlation between unemployment and involuntary part-time employment in levels.

In Table 3 we summarise the distribution of part-time employment, both voluntary and involuntary, relative to total employment for our total samples and various industrial and skill level categories. Accordingly, although more than ten per cent of the employed are part-time, more than 60 per cent of those would prefer full-time employment. Examining individual industries we discover that the incidence of time related underemployment is highest in the Services and Agricultural sectors, and lowest in the Construction sector. However, examining the same for voluntary part-time employment it is clear that highly underemployed sectors are not always those where voluntary part-timers find jobs. We also find that while unskilled workers have an obvious greater incidence of part-time employment, this is mostly due to the higher incidence of underemployment. As a matter of fact, amongst skilled workers a part-timer is more likely to desire to be so.

We also calculated the distribution of the underemployed across our industrial and skill level categories. Accordingly, over 90 per cent of involuntary part-time workers are unskilled workers. The figures also suggest that nearly half of the underemployed have jobs in Services. Including those working in Agriculture, the Wholesale and Retail and the Transport, Storage and Communication sectors accounts for over 80 per cent of all the underemployed.

Table 3: Distribution of Total Employment by Part-Time Employment Type by Industry and Skill Level

Sample	% VPT (within)	% IPT (within)	% IPT (Across)
Total	3.7	6.7	100.0
Agriculture, Hunting, Forestry and Fishing	9.1	10.5	12.7
Mining & Quarrying	2.6	6.6	2.2
Manufacturing	3.3	4.6	8.1
Construction	1.8	0.3	0.1
Wholesale & Retail Trade, Restaurants & Hotels	1.9	7.1	12.4
Transport Storage & Communication	4.2	4.7	13.0
Financing, Insurance, and Real Estate	3.6	5.0	5.3
Community, Social, Personal and Other Services	3.2	8.0	46.2
Skilled	3.6	2.1	6.3

Unskilled	3.7	7.9	93.7

IV. WHO ARE THE VISIBLY UNDEREMPLOYED?

In determining who is likely to be visibly underemployed (VU) in the T&T labour force we compare the visibly underemployed separately to the three other groups of the labour force, namely the full-time employed (FT), the voluntarily part-time employed (VPT), and the unemployed (U). Each individual comparison, of course, can be interpreted differently. Assuming that the FT actually prefer full-time employment, then the difference between the FT and VU is that only the former group has managed to obtain full-time employment, although both have the same preferences for hours of work. In contrast, although the VU and the VP both work less than the normal duration of hours, they differ in their preferences.

Comparing the U to the VU is not quite as straightforward. Although we know that both prefer to change their hours situation, we have no information as to whether an unemployed person would prefer a full-time or a part-time job. Nevertheless, given the likely link between unemployment and visible underemployment, particularly in developing countries, a comparison of the two groups appears appropriate. For example, tracking the destination dates of the unemployed in T&T, we find that around 30 per cent are able to find employment within three months. Of these, 18.6 per cent flow into voluntary part-time employment, indicating their preference for less than normal hours. This leaves a total of 81.4 per cent who find employment, but whose preference is for full-time hours. From these we find that over 16 per cent only manage to find part-time employment, and hence are visibly underemployed. This leads some credence to the claim that for many without a job ‘inadequate’ economic activity is the only choice, at least temporarily, for generating income.

In comparing the characteristics of each of the three groups to the VU, we pooled the VU with each of the three groups separately and ran a simple probit model in which the dependent variable took on the value of one if the individual was visibly underemployed and zero otherwise for each comparison group, and included a number of control variables. In particular, for the comparisons to the VP and FT we included both individual and workplace characteristics, while for the probit model of contrasting the VU to the U

we only included individual characteristics.[15] The variables included in the model are described in Table 4.

Table 4: Description of variables

Variable	Description
Individual Characteristics:	
Male	1 if male
Age and Age^2	Age, allowing for non-linear effect
Mar	1 if married
Head	1 if household head
Child	1 if there are children in household
Eld	1 if elderly persons in household
Urban	1 if lives in urban area
Primary	1 if highest education is primary school
SecondaryO	1 if highest education is O levels
SecondaryA	1 if highest education is A levels
University	1 if highest education is university
Plus set of regional dummies	
Workplace characteristics:	
NewW	1 if individual is new entrant (having worked no more than six months since taking up employment)[a]
Fsize	1 if firm has more than 10 employees
Self	1 if individual is self employed
Govt	1 if employment is with government
UrbanW	1 if job in urban area
Commute	1 if individual lives in different county than he/she works in
Weekend	1 if individual typically works weekends
Plus one digit occupation and industry dummies [b]	

Notes: [a] dataset does not include information on job tenure
[b] all specifications also include seasonal and year dummies to control for seasonal and year specific effects

The results for our three pooled samples are given in Table 5. Examining the FT relative to the VU first, our results show that the VU are more likely to be female, married, younger (although at a decreasing rate), and are less likely to live in a household in which there are young children. Clearly the VU are also more prone to have less education than

15 Given the rotating panel nature of our data, we only included the first observation of each individual for this exercise.

the FT. In terms of their jobs, these tend, relative to the FT, to be in the private sector, working for somebody else, working mobile, working at night, and not provide hours on weekends.[16] We also discover that VU are less likely to work in large firms (10 or more employees) – if smaller firms are more likely to be part of the informal sector, then this provides some crude evidence that the VU are more likely to be in the informal sector, as the argument is often made.

In comparing the VP and the VU we find less differences than the prior exercise, both in terms of individual level and workplace characteristics. The VU are more prone to be less educated (although only if we consider education above primary), female, and more likely to live in an urban area. The family composition, in terms of dependents or relationship to family, appears not to be different for people that actually want to work part-time, suggesting that their reason for wanting so is not related to the their household responsibilities. In terms of their jobs, the incidence of the VU working for others, in the private sector, and on weekends and nights is greater.

Finally, we also compare the VU to the U in T&T. As can be seen, the VU are more likely to be male, but there are no significant age differences between the two groups. Education levels appear to matter only for those with very low education – the VU tend to be less educated. Although we find that the VU are more likely to have greater household responsibility in terms of being the head of the household and married, their households also tend, relative to those of unemployed, not to have young or old dependents. As would be expected, because work opportunities are greater in urban areas, the VU are more likely to be found in these.

16 Clearly, of course, if persons work additional hours on weekends, either in the same job or another they are more likely to obtain at least 33 hours in any week.

Table 5: Comparison of Individual and Workplace Characteristics of VU to other Labour Force Groups

Compared To:	FT	VP	U
Male	-0.015***	-0.088**	0.072***
	(0.003)	(0.040)	(0.011)
Age	-0.001**	-0.006	0.004
	(0.001)	(0.009)	(0.003)
Age^2	1.32e-05**	2.84e-05	-1.35e-05
	(7.58e-06)	(1.07e-04)	(3.6e-05)
Primary	-0.006**	-0.006	-0.047***
	(0.003)	(0.039)	(0.013)
SecondaryA	-0.014***	-0.168***	-0.056***
	(0.003)	(0.059)	(0.016)
SecondaryO	-0.014**	-0.347**	-0.093
	(0.005)	(0.140)	(0.047)
University	-0.015**	-0.435***	-0.008
	(0.006)	(0.109)	(0.050)
Urban	0.005	0.153***	0.032
	(0.004)	(0.052)	(0.019)
Head	-0.003	0.035	0.034**
	(0.003)	(0.039)	(0.014)
Child	-0.004*	-0.039	-0.030***
	(0.002)	(0.033)	(0.012)
Eld	-0.001	0.005	-0.055***
	(0.004)	(0.055)	(0.018)
Mar	0.001**	0.004	0.020***
	(0.001)	(0.012)	(0.004)
NewW	0.008	0.089	---
	(0.010)	(0.090)	
Govt	-0.026***	-0.215***	---
	(0.003)	(0.051)	
Self	-0.019***	-0.336***	---
	(0.003)	(0.124)	
Fsize	-0.039***	-0.062	---
	(0.005)	(0.042)	
UrbanW	-0.005	-0.037	---
	(0.003)	(0.040)	
Commute	-0.007***	-0.033	---
	(0.002)	(0.036)	
Mobile	0.025***	0.005	---
	(0.012)	(0.089)	
Night	0.020**	0.206*	---
	(0.012)	(0.073)	
Weekend	-0.014***	0.101***	---
	(0.003)	(0.032)	
Pseudo R^2	0.21	0.36	0.07
χ^2 Statistic	1082.8***	400.3***	387.6
Observations	16313	1252	6040

Notes: ***, **, and * signify statistical significance at the one, five and ten per cent level, respectively.

Preferences and Job Search

As pointed out above, where possible we make implicit assumptions about the hours preferences of the VU relative to the three other labour force groups. One should then expect that those groups for which these preferences are fulfilled should, ceteris paribus, be relatively more content with their employment situation than those for which they are not. In other words one should a priori expect the FT and VP to be relatively 'happier' in their job than the VU, and the U should be relatively less 'happy', as long as some hours are preferable to no hours. If 'unhappiness' is likely to induce somebody to search for another (or a) job, then the incidence of job search should be highest among the U, followed by the VU, and lowest among the FT and VP. Fortunately the CSSP asks whether a person has been searching for a (or another) job, and hence we can investigate whether the incidence of job search can confirm our conjectures of the level of contentment among the VU relative to the other labour force groups. To do this we ran a simple probit model on the pooled observations of the VU and each of the other groups, using a dependent variable indicating whether the individual searched for a job, and controlling for individual and, where appropriate, workplace characteristics, and a dummy variable, *VU*, to identify the VU in the pooled samples. Additionally, we included interaction terms with the latter variable to allow for different effects across gender and area of residence (urban or rural).

Before proceeding to our results a number of shortcomings of this approach must be mentioned. Firstly, we are not able to control for differences in the intensity or type of job search. Secondly, even apart from the likelihood that job search may not be as meaningful in labour markets in developing countries as it is in the industrialised world, its meaning may differ across our four groups. For instance, negative or positive unemployment duration dependence could decrease or increase the incidence of job search among the unemployed relative to the VU, regardless of hours preferences.[17] Thirdly, there may be aspects of jobs other than hours that are relatively undesirable about the jobs that the VU have that we are not able to control for. Finally, there a surely other aspects that determine the degree and incidence of job search, such as unmeasured skills or

17 Another related problem is that we do not know whether the person is looking for a job in the full- or part-time job market. Feasibly the meaning of job search could differ for these.

motivation, that may be correlated with the fact of whether somebody is VU.

Nevertheless, we report the results of this exercise in Table 6, although they clearly must be viewed with some caution. As can be seen from these, for the comparison of FT to VU, we find that the VU are more likely to search for (another) job. This supports the conjecture that VU are, ceteris paribus, relatively 'unhappier' about their employment situation and hence more likely to take active steps in resolving this. As shown by our interaction terms, this effect is stronger for males and for those living in rural areas.

In contrast, as indicated by the lack of statistical significance of the coefficient on the *VU* dummy but the significance of both interaction terms, only underemployed males and persons living in urban areas are more likely to job search than the VP. A possible reason for this is that males have more incentive to job search if they have more family responsibilities (and these are not adequately proxied by our control variables) and that job search is more meaningful in urban areas.

Confirming our a priori expectations, under admittedly strong assumptions, we find that the VU are indeed less likely to search for a job than the U, and hence may be relatively more content with their labour market situation. However, as pointed out above this result could also be due to there being positive duration dependence among the unemployed.

V. THE QUALITY OF FULL-TIME JOBS

From the question being asked in the CSSP one can infer that individuals here classified as the VU worked less than full-time but would have preferred to work full-time hours. One of the advantages from working full-time is, of course, the greater income generated from the extra hours worked, although there are other aspects of full-time employment that may appeal to the VU, such as greater employment stability, higher returns to tenure, benefits etc. These aspects may be particularly important in developing countries where the VU are likely to be working in the informal sector or other less desirable jobs. Unfortunately we do not have direct information on other benefits of a job or on whether the VU would prefer an actual job change, rather than just an increase in the hours of their current jobs. However, some of these can, to some extent, be inferred from our data. In particular, we are able to examine whether full-time jobs are more stable than part-time jobs, and the pay prospects for the VU in full-time employment.

Table 6: Comparison of Job Search Intensity of VU to other Labour Force Groups

Compared To:	FT	VP	U
VU	0.053***	0.009	-0.495***
	(0.017)	(0.006)	(0.023)
VU*Urban	-0.003**	0.857***	-0.139***
	(0.001)	(0.028)	(0.040)
VU*Male	0.005*	0.051**	0.014
	(0.004)	(0.034)	(0.047)
Male	-0.001	-0.031*	0.101***
	(0.001)	(0.024)	(0.016)
Age	-1.04e-04	-0.001	0.008**
	(2.34e-04)	(0.001)	(0.004)
Age^2	-9.70e-07	-6.37e-07	1.26e-04**
	(3.17e-07)	(1.05e-06)	(4.99e-05)
Primary	0.001	-0.002	0.024
	(0.001)	(0.004)	(0.018)
SecondaryA	0.004**	0.001	0.044*
	(0.002)	(0.006)	(0.023)
SecondaryO	0.016***	Dropped	0.089
	(0.009)		(0.073)
University	0.013**	Dropped	0.038
	(0.009)		(0.075)
Urban	0.002	-0.194***	0.053**
	(0.002)	(0.043)	(0.026)
Head	0.000	0.004	0.060***
	(0.001)	(0.004)	(0.019)
Child	0.001	0.010	-0.006
	(0.001)	(0.004)	(0.015)
Eld	-0.001	0.001	-0.002
	(0.001)	(0.007)	(0.025)
Mar	0.000	0.000	0.014***
	(0.000)	(0.001)	(0.005)
NewW	0.004	0.006	---
	(0.004)	(0.019)	
Govt	0.000	-0.006	---
	(0.001)	(0.004)	
Self	-0.003	0.018	---
	(0.001)	(0.041)	
FSize	-0.001***	0.009	---
	(0.002)	(0.006)	
UrbanW	0.000	0.006	---
	(0.001)	(0.004)	
Commute	-0.004	0.000	---
	(0.002)	(0.004)	
Mobile	0.016***	0.059***	---
	(0.009)	(0.039)	
Night	0.009**	-0.009**	---
	(0.006)	(0.003)	
Weekend	-0.001	0.000	---
	(0.001)	(0.004)	
Pseudo R^2	0.21	0.29	0.21
χ^2 Statistic	383.35***	1499.3***	383.4***
Observations	13763	1062	6040

Notes: ***, **, and * signify statistical significance at the one, five and ten per cent level, respectively.

The CSSP provides information on how many months the person worked during the past year, and using this we find that, on average, the VU worked 7 while the FT worked 11 months in the prior year. This certainly implies greater employment stability for the FT, although we are assuming that preferences and starting employment amongst these two groups remained the same in the prior twelve months. We also have information on why a non-working person left the last job so that we can identify those individuals who were subject to involuntary separations three months later. This allows us to determine whether the VU are more likely to lose a job relative to the FT.[18] Using the raw probabilities we find that 15.8 per cent of the VU are likely to have lost a job involuntarily and remain non-employed by the subsequent interview, three months later after their initial state, while the parallel figure for the FT is 6 per cent. Of course, aspects other than the employment type may be driving the difference in these raw probabilities and hence we estimated a simple probit model on the effect of being visibly underemployed on the probability of an involuntary separation (three months later), while controlling for other personal and workplace factors.

The results using our pooled VU and FT sample are given in the first column of Table 7. As can be seen, males and those older (at a decreasing rate) have a lower, while new entrants to the labour force have a higher probability of suffering an involuntary separation. Education matters only if the person has a university degree, this decreasing the likelihood of involuntary separation. In terms of household or family related variables, only the presence of elderly persons in the household has a significant impact, namely a positive one. Living in an urban area raises, while working in an urban area lowers the probability. As would be expected, working in a small firm increases the likelihood of losing one's job. Most importantly we find that the VU are more likely to suffer an involuntary separation, although this effect is less so for persons living in urban areas and for males.

Table 7: Estimates of the Probability of an Involuntary Separation (relative to the FT) and the Probability of the VU Becoming Full-Time Employed

	Prob(Inv. Separation)	Prob(Full-Time Job)
VU	0.087**	---
	(0.035)	
VU*Urban	-0.025***	---
	(0.009)	
VU*Male	-0.025***	---
	(0.009)	
Male	-0.030***	0.121
	(0.008)	(0.085)
Age	-0.004***	0.022
	(0.001)	(0.015)
Age^2	0.000**	0.000
	(0.000)	(0.000)
Primary	0.000	-0.089
	(0.007)	(0.072)
SecondaryA	-0.005	-0.018
	(0.009)	(0.113)
SecondaryO	-0.014	Dropped
	(0.013)	
University	-0.022*	Dropped
	(0.013)	
Urban	0.033***	0.011
	(0.011)	(0.131)
Head	0.000	0.051
	(0.007)	(0.077)
Child	-0.003	-0.026
	(0.005)	(0.064)
Eld	0.028**	-0.168*
	(0.012)	(0.094)
Mar	-0.001	-0.010
	(0.002)	(0.023)
NewW	0.070**	-0.053
	(0.031)	(0.166)
Govt	-0.010	-0.044
	(0.007)	(0.106)
Self	0.026	-0.075
	(0.026)	(0.214)
FSize	-0.015*	0.155*
	(0.008)	(0.081)
UrbanW	-0.016***	0.106
	(0.006)	(0.093)
Commute	-0.009	0.046
	(0.007)	(0.072)
Mobile	0.006	0.057
	(0.021)	(0.140)
Night	-0.001	-0.132
	(0.022)	(0.133)
Weekend	-0.003	-0.013
	(0.006)	(0.064)
Sample	FT & VU	VU
Pseudo R^2	0.14	0.16
χ^2 Statistic	343.0***	67.2**
Observations	5983	339

Notes: ***, **, and * signify statistical significance at the one, five and ten per cent level, respectively.

18 One of the problems with this is that persons who lost their job but regained a job before the subsequent interview are not captured as involuntary separations. Depending on whether this occurs more frequently for the FT or for the VU, this may bias our results upwards or downwards.

We also investigated whether full-time jobs would potentially generate higher income on a per hour basis for the VU, given their levels of human capital. In order to compare more homogenous groups we focus on unskilled workers only, which make up over 95 per cent of the VU as shown in Table 3 above. We also eliminated from our full-time sample anybody who worked more than 40 hours and who held more than one job, to avoid incidences of overtime pay and eliminate the possibility that some income for the FT may be generated from additional, part-time, employment.

Examining the aggregate mean hourly wage rates for these two groups, we found that the average hourly wage rate for unskilled FT was slightly higher than that of the unskilled VU: 15.39 versus 14.93 TT$ per hour (measured at 1998 prices). However, the actual difference is likely to be considerably higher if there are other non-monetary advantages to full-time jobs. Of course, even the accounted for difference may be due to or dampened by differences in the average personal characteristics and workplace factors of the FT and VU, rather than differences in the prices that they receive for these. We hence ran OLS wage determinants regressions using our control variables from above for the FT and VU samples separately and used the coefficients and the means of the control variables to employ the well-known Oaxaca (1973) decomposition of the difference in the average wage of two groups, except that we separated out the effects of personal and workplace characteristics:[19]

$$\mathbf{W}_{FT} - \mathbf{W}_{VU} =$$
$$\beta^{p}_{FT}(X^{p}_{FT} - X^{p}_{VU}) + \beta^{w}_{FT}(X^{w}_{FT} - X^{w}_{VU}) + (\beta^{p}_{FT} - \beta^{p}_{VU})\, X^{p}_{VU} + (\beta^{w}_{FT} - \beta^{w}_{VU})\, X^{w}_{VU} \quad (1)$$

where $\mathbf{W}_i$, β^j_i, and X^j_i are the average wage rate, a vector of coefficients from our OLS estimation, and the means of the variables, for the labour force groups j = FT, VU, and the groups of variables $i = w, p$ - where w stands for workplace and p for personal

19 One should note that one drawback of decomposing the effects into subgroups of the control variables is that for variables that are a set of dummies, such as the industry dummies, the contribution will to some extent depend on the omitted category; see Oaxaca and Ransom (1999) for a discussion.

characteristics.[20] As personal characteristics we include all individual level and household level variables,[21] while all other variables are assumed to be workplace characteristics. In essence the first two terms can be thought of as `explained' differences in wages (at VU prices) due to average personal and workplace characteristics differences. In contrast, the third and fourth term are considered to be the 'unexplained' components of the difference in mean wages, i.e., differences in the returns for workplace and personal characteristics between the FT and VU at the mean characteristics of the VU. The results for (1) using this procedure were as follows:

$\mathbf{W}_{FT} - \mathbf{W}_{VU} =$

$15.39 - 14.93 = 0.47$

$= \beta^{p}_{FT}(X^{p}_{FT} - X^{p}_{VU}) + \beta^{w}_{FT}(X^{w}_{FT} - X^{w}_{VU}) + (\beta^{p}_{FT} - \beta^{p}_{VU})\, X^{p}_{VU} + (\beta^{w}_{FT} - \beta^{w}_{VU})\, X^{w}_{VU}$

$=$ 1.41 + 3.04 + -9.33 + 5.35

As can be seen from the sign of the first and second terms, the mean personal and job attributes (at full-time prices) both serve to give an advantage, although slight, to the (unskilled) FT relative to the (unskilled) VU, regardless of whether it is measured at full-time or involuntary part-time prices. In other words one would 'expect' the FT to earn more given their personal and job characteristics.[22] More importantly, we find that although the prices for all the control factors together actually serve to reduce the difference in the mean wages, this effect is different for personal and workplace characteristics.[23] In terms of their personal characteristics, the VU can actually command higher prices in their jobs than if they worked in the full-time jobs of the unskilled FT, while the FT are compensated more for the job specific attributes that we can control for. The fact that prices for personal characteristics (including human capital) are higher in the jobs of the VU market could be because we are not able to control for factors like tenure,

20 Alternatively, (1) could be written by multiplying the first two terms by the returns for the VU and the the last two terms by the mean characteristics for the FT. Using this alternative specification only changed the results marginally.

21 These are *Male, Age*, the educational dummies, *Urban*, *HHead*, *Child*, *Eld*, *Mar*, and the regional dummies. One could also argue that occupational dummies should be included in these, however, including these only changed our results only marginally as well.

22 In running a simple probit regression of unskilled FT versus the VU as in the spirit of Section IV, we find less differences in the personal characteristics. In particular, there are no longer age differences, and only educational differences for the less educated. Results are available from the authors.

23 This would simply be the sum of the last two terms.

on-the-job-training, and fringe benefits, that are likely to be higher in full-time employment, and may be correlated with the other factors. The lower prices for the jobs of the VU is consistent with the allegation that many of these are likely to work in the informal sector, where equivalent jobs pay less, and hence indirect evidence for a segmented labour market.

At any rate, this latter findings means that, even if one were to give the average VU a job in the full-time sector, the fact that he/she is rewarded more for his/her personal characteristics in his/her current job implies this would only result in a fall in the average wage, although a small one.[24] This result is confirmed if we examine the real wage rate changes for individuals who were originally VU but who found a full-time job or increased their hours at their current job. For those VU who found full-time employment within three months, the average person experienced a real wage rate loss of 2 per cent, although some of these may just be temporary short-time workers who happen to be working full-time at the time of interview. It must also be noted that if many of the VU are working in the informal sector, essentially queuing for higher quality formal sector jobs, then this may be reflected in differences in workplace characteristics; a factor, that as shown above, increased the difference in average wages between the two groups.

VI. DO THE VISIBLY UNDEREMPLOYED FIND FULL-TIME JOBS?

Our working hypothesis throughout this paper has been that the VU would prefer full-time employment. An obvious question to ask is then whether they are able to find such. We have already noted that after three months on average 15.8 per cent of the VU are non-employed due to an involuntary separation. To examine whether those who remain in employment are able to change their status we have compiled the distribution of the labour market destination states three months after the individual is classified as visibly underemployed in Table 8. Accordingly, 20.3 per cent of the VU leave the labour force by the end of a three months time span. Of those that remain employed, 29.6 per cent persist to be part-time, of which 86.2 per cent would still prefer full-time hours. Thus, our raw probabilities indicate that nearly 25 per cent change their preference for full-time hours within three months. Assuming that the preferences of those that become full-time employed and those that enter unemployment are still for full-time hours, implies an

24 The average wage rate would be about 90 cents lower.

unconditional probability of 52 per cent that of the VU with constant preferences will be in full-time employment three months later.

Table 8: Destinations three months after being visibly unemployed

Destination State	Probability
FT	39.1
VU	25.5
VP	4.1
U	11.1
OLF	20.3

In order to determine what attributes of the VU increase their likelihood of fulfilling their (initial) preferences, we ran a simple probit model of achieving full-time employment on the usual (initial) personal and workplace characteristics, the results of which are given in the second column of Table 7.[25] Accordingly, it is clear that practically none of our control variables help predict the probability of gaining full-time employment. The exception is our firm size dummy variable, suggesting that a visibly underemployed person working in a large firm has greater chance of becoming full-time employed. One possibility for the importance of firm size may be that in large firms the possibility of working more hours is more likely given the greater opportunities and hence a costly and timely job change to another firm is not necessary. Another possibility is that the firm size dummy is a crude proxy for the formal sector, so that individuals already in the formal sector are more likely to move to other, but full-time, formal sector jobs or formal sector jobs, even if temporarily part-time, are more likely to be full-time. Unfortunately we are not able to distinguish between or confirm either or both of these explanations.

VII. CONCLUSION

The common perception is that the underemployed in developing countries are those that, because of a lack of social safety net and inefficient labour markets, cannot afford to be unemployed for a long period of time and hence fall into inadequate employment situations, characterised by less than normal hours or inadequate productivity. This paper presents an empirical analysis of the incidence of visible underemployment in Trinidad

25 Excluding those that change their preferences over time does not change the results substantially.

and Tobago (T&T), where the visibly underemployed are defined as those in employment that work less than the normal duration of working hours but are willing and available to work additional hours.

We show that the incidence of visible underemployment in T&T is relatively high in an international comparison. In comparing the visibly underemployed to others in the labour force, we find that their revealed behaviour, in terms of job search, is consistent with their preferences. In terms of their personal and workplace characteristics our results show that, amongst other things, the visibly underemployed are less educated and more likely to work in the private sector. Compared to full-time employment, their jobs tend to be with small firms, working at night and at non-fixed locations, possibly reflective of their greater likelihood of working in the informal sector.

Although we cannot identify important non-monetary job features of full-time jobs, we do find that other aspects of full-time employment, in addition to the increase in hours, suggest that full-time jobs may be higher of quality. Specifically, they provide greater employment stability and reward job specific attributes more, although the level of human capital of the visibly underemployed seems to, on average, obtain higher returns in the jobs of the visibly underemployed. This latter finding suggests, if anything, that other non-monetary aspects of full-time employment, such as fringe benefits or job specific training, are likely to be important. However, in the end, only about half of the visibly underemployed are successful in obtaining full-time employment within three months, and little, except firm size, helps predict who will succeed. This final result may possibly reflect the segmented nature of labour markets in T&T and in developing countries in general.

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Mike Bleaney - growth, international macroeconomics
Indraneel Dasgupta – development theory
Norman Gemmell – growth and public sector issues
Ken Ingersent - agricultural trade
Tim Lloyd agricultural commodity markets
Paula Lorgelly – health, gender and growth
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