The Impact of Supply-Side Human Resource Issues on Organizations: An Examination of a Temporary Accountancy Firm

by

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ABSTRACT

The preferences of individuals over working conditions may have profound effects on organizations and labour markets, and yet their impact has, for the most part, been marganalized. We argue that, in light of evolutionary developments in the workplace, a re-thinking of the impact of supply-side influences on specific labour market segments and organizations is called for. To this end, this study evaluates contemporary human resource issues, specifically -- preferences of individuals to control working-time and the impact this may have on labour market segmentation theory and organizations.

An analysis of data on such things as demographics, technology, payment systems and ethical views suggests an environment conducive for a more time-sensitive employee. We hypothesize that this time-sensitive employee may search for an organization, like the temporary agency, which provides the control over working-time that they prefer. Thus forming a unique supply-side driven labour market segment. We also assert that job forms like this, rather than being a peripheral secondary level job form, may be forming a new labour market segment that is neither primary nor secondary just atypical. Our hypotheses are derived from an approach that focuses on supply-side rather than demand-side influences, and a new adaptation and aplication of a more general time-sensitive model.

We tested our hypotheses using a three tiered approach: (i) a secondary analysis of past data sets, (ii) analysis based upon our interviews with 17 managers from London temporary accountancy agencies and (iii) our own data set drawn from 175 employees of a Large London accountancy firm and 50 employees of a London temporary

accountancy agency.

We found that temporary agency employment when compared to large firm employment was associated with greater control over working-time and was associated with employees who exhibited a greater preference for control over working-time. Therefore, we found evidence for supply-side driven job-form choice. We also found that those employees related to the internal labour market's "core" exhibited a preference for control over working-time and received control over working-time in their compensation packages.

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Chapter 1

Introduction

BACKGROUND OF TIME AND WORK

In the past, work, for the most part, was performed according to the daily rotations of the earth and the seasonal influences of its varying orbit around the sun. If it was light outside, one was able to work, usually labouring in agriculture. As the sun set and the darkness became prohibitive, other activities were pursued. During the summer, longer days meant more hours of work. During the winter, shorter days meant fewer hours of work.

However, for one hundred years or so, neither the daily rotation of the earth, nor its seasonal position, have meant as much to most people who work. Other considerations are more important to the subtle timing of their activities: mainly, the man-made organisational structures which impose rules and restrictions on the hours of work. As far as deciding *when* to work is concerned, man, rather than elements from nature, may

now be the prime determinant. We no longer work strictly according to natural cycles and rhythms, but according to the rhythms of either the industry, the firm, or the boss.

This fact may derive from the relatively recent industrialisation of the Western world in the mid 19th century, and the increased practice of capitalism. The accompanying complex organisational structure and its more time specific demands on employees compelled a greater connection between time and rewards. The repetitiveness and simplification of tasks involved in the new industrialised factories generated a commodification of time for man -- an hour of one's time was (and is) worth a specific amount of pecuniary compensation (see Taylor, 1947 for example)[1]. Ultimately, this connection influenced employees to demand a reduction in their working hours. In brief, a shorter work day was achieved[2]. Thus, the debate over working-time has shifted from one concerned with quantity of time to one of flexibility of time[3].

How changing the quantity of hours worked changes consumption and utility has been written about extensively. Most notably Becker (1965) wherein he, by introducing home production, shows the alterations in working hours as wages change, as forgone earnings change and as wealth changes. However, the effects of flexibility of working-time are

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[1] Hammond and Hammond (1920) note that "the changes the industrial revolution produced ... were so important that when the weaver in Oldham or the cropper in Halifax or the woolcomber in Bradford looked back to 1820 or 1830 to the beginning of his life, he thought he could remember the time when in all senses the worker was free" (Footnote 3 page 2).

[2] There has been a general decline of 13.7 per cent in working hours between 1950 and 1987 in the United Kingdom (Owen, 1988 and Stafford, 1980). Now, more than ever, the total time spent at work is at its lowest (see also Metcalf, 1987).

[3] As Blyton (1989) notes "... the issue of duration is increasingly being ... upstaged by the call for greater working-time flexibility" (page 125). For an historical discussion on the arrival of flexibility at work see Harriman (1982).

less formalised[4]. Exactly what are the costs to the employee of the standard arrangements of time and work and how might these costs be inducing changes in the structure of both labour markets and organizations? These problems motivate the inquiry of this thesis.

Recently, discussions about flexibility have been centred around the demand-sided influences of organizations on the characteristics of working conditions. These influences result in a variety of job forms, for example "core" job forms and "periphery" job forms (temporary or part-time). Flexibility, in this construct, means flexibility for the firm. This argument is heralded in the labour market segmentation literature (See Curson, 1986; Atkinson, 1984; Loveridge and Mok, 1979). On the supply-side, the discussions are much more anecdotal as to the various atypical working-time structures, and are most frequently described in terms of flexi-time work arrangements (See Gannon, 1984; Orpen, 1981). Here there is room for development.

This thesis departs from these general notions of time and work, and looks at working-time arrangements as an important part of the compensation package as described by the attitudes of employees within an occupation. It approaches working-time control not as a demand-sided benefit from work handed out by the employer, nor as an element of the compensation package disregarded by employees, but as an element which may be the consequence of employee job choice decisions. It also suggests that the timing of work can have various repercussions on employee performance, and possibly repercussions on the value employees place on their pecuniary compensation. It also incorporates the

[4] Some of Becker's results are ambiguous (see Hill, 1989 page 61).

complementary aspects of work-time and time utilized for activities outside of work, into an overall time framework that treats time not as a commodity but a format which allows work to occur *within time*.

This is an important step in treating time and work in that it challenges ideas that are becoming ensconced in literature about temporary work, and firm internal stratification. On a broader scale, our treatment of time and work, in light of current evolutionary changes, may also necessitate a reworking of labour market segmentation analysis. The employment situations that motivated the writing of that literature may no longer hold true: much work is now service industry / knowledge industry based, technology like the micro-chip has altered the way work is performed, pecuniary compensation is evolving toward profit related pay, and the demographics of expert employees are changing. All of these may have profound consequences on working conditions[5]. Analysing working conditions through a theory in which the framework of time is based on notions about work that no longer predominate could produce spurious results, and inappropriate labour market segmentation labels.

Thus, a recognition that employment conditions have changed is essential to developing an appropriate theoretical approach to work. This is what this thesis attempts -- a theoretical approach which incorporates contemporary aspects of working-time into the compensation package. In light of the economic constraints that now surround organizations, new forms of compensation packages that can be both sensitive to the

[5] See the introductory chapter of Bradley's (1992a) *Phone Wars* for a concise discussion about the changes which are effecting the labour market and organizations.

employees' preferences as well as sparing firms financial strife, will be increasingly important in maintaining the commitment of knowledge based expert employees, while preparing firms for competition in the future. Showing how employees are compensated via control over working-time is an important part of this thesis.

Here, control over working-time is not restricted to those employees who have overtly different job forms, like temporary workers. We investigate a larger set of job forms within an occupation, including not only temporary workers but employees working in a traditional large firm setting, and compare the working-time circumstances that surround all of them. The significance and necessity of widening the scope of investigation into control over time at work is supported by a recent Employment Gazette Article (Wareing, 1992). There it was reported that 75 per cent of the working population in Great Britain are employed in arrangements that have working-time flexibility aspects attached to them[6]. Still, many people may wonder when the working-time flexibility revolution that was so hotly proclaimed as the future of work is going to appear? Where are all the tele-commuters that were forecasted? Perhaps the answers to these questions are masked by the traditional approaches used to study the elements of time and work and traditional labour market segmentation analysis[7].

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[6] This is in contrast to Dey (1989), who believes negotiations for patterns of working-time is minimal.

[7] Perhaps a need to recognize the "development of the concept of time", as noted by Norbert Elias (1992, pp 92-93). A development not towards a superior life style but a development toward a different "time concept".

OBJECTIVES

Because this thesis is shaped by inquiries into time and work in contemporary labour markets it is incumbent that one of its preliminary objectives is

- to look, in general terms, at the current labour market situation and to identify areas of change which might be influencing the working-time preferences of individuals in the labour force.

Because this thesis relies on the supply-side time preferences of individuals, even more importantly it needs

- to develop an approach that allows segmentation of job forms to occur in various manners including segments which occur via supply-side (preference) influences.

In opening up the discussion to supply-side influences, we make available a format which is conducive to structuring a framework in which the supply-side influences of the individual's unique time-preferences can be analyzed. That is, we are able

- to utilize a time sensitive-model which treats work as an activity which occurs *within time*.

The significance of the objectives outlined above can only be made clear if we

- show some of the recent overemphasis of demand-sided influences in literature on temporary work and labour market segmentation.

Finally, our three sources methodological approach was designed

- to investigate the possibilities of intra-occupational supply-side influences and to re-look at labour market segments with the time-sensitivity of the employee in mind.

It is important to keep in mind that the general objective of this thesis is not to develop new models of organizations, nor is it to wholly discredit demand-sided influences. We do not deny the existence of demand-sided influences, we merely highlight the existence of some supply-sided influences. The general objective is to fill a widening gap in the analysis of work and compensation packages. A gap which leaves the structures between time and work on the side-line. A gap which does not allow compromise between demand-side influences and supply-side influences. A gap we hope to begin to fill by correcting the imbalance and asserting the importance of time in compensation packages and the resulting supply-side (time-preference) driven influences on labour market segmentation.

ORGANIZATION

This thesis is organized into four parts. Part 1 consists of Chapter 1 (this chapter) and Chapter 2. Chapter 2 introduces the subject of working-time freedom by looking at some changes which may have begun to alter employee preferences toward a more liberal working-time arrangement.

Part 2 is the theoretical portion of this thesis and consists of Chapters 3, 4 and 5. Chapter 3 looks at labour market segmentation with an approach that allows for the

coexistence of both demand-sided labour market segmentation and supply-sided labour market job form choice. In Chapter 4 we utilize a time-sensitive model that embraces supply-side labour market job form choice by allowing for personal preferences over time by the labour supply. This generates two hypotheses. Chapter 5 investigates these hypotheses in closer detail.

Part 3 reports our findings of our own investigation on labour market segments. It draws from three different forms of data. The first is a secondary analysis of data used by past researchers which gives evidence for the relevance of our supply-side investigation of labour markets and organizations. The second is an examination of temporary agency managers opinions about the accountancy labour market, which also tests our own hypotheses. The third data set reports the results of employees' opinions about working conditions from a large, London-based accountancy firm and a London-based temporary accountancy firm. It employs this data to test the hypotheses generated in parts 1 and 2. Part 3 begins with Chapter 6, which explains our methodological approach and its appropriateness. Chapter 7 reports our findings from past work, while Chapter 8 reports results from our interview data. Chapter 9 explicitly defines the variable indices constructed from our questionnaire, which is followed by an analysis of the results from the questionnaire in Chapters 10 and 11.

Part 4 is Chapter 12, which is a conclusion of this thesis as well as a brief section on the implications of our results. Several appendices follow.

Chapter 2

Evolutionary Changes -- The Time-Sensitive Employee

"The steam engine has relieved them of much of the exhausting and degrading toil; wages have risen; education has been improved and become more general; the railway and the printing press have enabled members of the same trade in different parts of the country to communicate easily with one another,... while the growing demand for intelligent work has caused the artisan classes to increase so rapidly that they now outnumber those whose labour is entirely unskilled. ... some of them already lead a more refined and noble life than did the majority of the upper classes even a century ago." - Alfred Marshall *Principles of Economics* - 1890

INTRODUCTION

In the late nineteenth century social scientists recognized the important effects that the changes in technology had on compensation to labour. In their terms, the new technology meant a real increase in the ability to purchase and consume an increased variety of goods and services, resulting in a "steady progress for the working classes". This was seen to be accompanied by an "emancipation from custom, and the growth of free activity..." resulting in a special character of business (Marshall, 1946 pp 3-4).

More recently changes not only in technology but also in demographics, industries and organizational behaviour have prompted discussion about contemporary compensation packages. Now, there is an increased concern regarding the new forms of working conditions that employees work under as well as an increased debate about the intrinsic value of the work performed[1]. In tandem to these debates is the question of the effectiveness of new forms of pecuniary compensation (most importantly employee stock options and performance pay).

We begin our discussion by suggesting how these changes may effect employee attitudes to the working-time aspects of working conditions. In later chapters these postulates about working-time conditions serve as a backdrop in developing our approach to employment job form choice influenced by preferences for control over working time.

THE TIME-SENSITIVE EMPLOYEE

It has been said that the employee of today, and of the future, will find that flexibility and adaptation within the work place and within their personal careers is a necessary first step to an improvement in their personal and professional selves (Handy, 1984). This may be a direct result of organizational and technological changes that have enhanced the

[1] Caston and Bratio (1985) find that "when perceived importance of intrinsic factors are taken into account in a multivariate design, support is obtained for the contention that intrinsic, not extrinsic, factors contribute to job satisfaction" (p 269). In other words, pay and possibilities of promotion are not as important as being able to do the job that one desires to do (see also Allison, 1991).

yield to the employee of an autonomous personal and professional life[2]. Furthermore, with the ever increasing ease of access to consumer durables like cars, washing machines and televisions there has been an increased emphasis on the psychological and intangible levels of "success"[3].

This combination of the external influences of changes in technology and the internal influences of changes in personal values in determining "success", forms the basis for our definition of the "protean" employee[4]. They are characterized by (a) the desire or ability for variation and (b) the desire for control over working-time and/or other aspects of their working conditions.

In the past, the traditional employee has had a more passive stance in relation to their employment history. Once they had become committed to a particular career ladder, they simply let the organizational rules and strategies plot their career course. As Hall and Hall (1979) state, "It was a passive stance; there was little need to think about attitude, identity, or adaptability unless, of course, the career ladder began to wobble". Along with this steady relationship and stable career came the commitment from the firm of life long job security. This is the basic "salaried model" of organizational relationship and has, in the past, characterized much of white collar work (Osterman, 1988).

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[2] E. P. Thompson (1967) suggests that, in the past, there was greater temporal freedom. Now it may be the case that workers with market power are attempting to regain control over working-time.

[3] As Hill notes in Blyton and Hill (1989), "continual improvements in household production conditions have reduced the satisfaction of further improvements relative to that obtained from improved working conditions, so that some of an increase in wage rates is taken in the form of improved working conditions" (page 57 - 58).

[4] "Protean: adaptable, flexible; from the Greek god of the sea, Proteus, who was able to change his shape at will" Hall and Hall, 1979.

When comparing the protean professional employee with the traditional professional employee, the protean employee ids defined as opting for greater control and accepting of (or gives less regard for) the insecurity and chance for failure that greater personal freedom entails. They are not as likely to take refuge in the corporate womb. They view security less as a function of the corporation, than as a function of market circumstances or of their own personal attribute[5].

This opinion about job security may be linked to the protean professional employee's sense of their own scarcity and their increasing importance to the organization. In this sense they may be intrinsically tied to the "expert" employee as described by Caruso, 1990 and Caruso, 1992[6]. They are the "human capital" of the organization. By this definition alone their scarcity is implied[7].

For Western organizations the two concepts work well together[8]. The expert employee has, either by luck or effort, found themselves in a position of scarcity in the labour

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[5] Osterman (1988) has an interesting point to make in that he states "there is considerable soft evidence that white collar employment has become increasingly less secure" (p 80).

[6] Caruso (1990) notes that " In organizations such as advertising, publications, management consulting, software houses etc. both management and essential employees are expert individuals. The professional represent the core expertise, and the managers represent the ability to enhance organizational value. Organizational success is a function of both the core expertise relative to competition and the ability of expert management to motivate the expert professionals and other expert employees to work together for the benefit of the organization" (p 53).

[7] The idea of Protean professionals works best when one defines the term "professional" as those engaging in new expert work. However, older organizations of employees, like solicitors, which exercise market power, may be a determinant in who will wield the power of expert work. Still, many of these organizations are experiencing an increased amount of personal specialization within their profession which may be considered a form of new expert employee. Therefore the term protean professional may apply to these groups as well.

[8] See Pascale and Athos (1986) wherein they note that Japanese managers rely on dependence from their employees compared to Western systems which encourage individual development.

market. This has quickly brought the rewards necessary for a comfortable life style with regards to the basic necessities: clothing, housing and food. Beyond this, the employee then looks for compensation in other forms. For the protean employee this means greater control over their working conditions.

How this part of the labour force (the expert protean employee) is compensated, both via the internal labour market and the external labour market, will be one of the chief considerations for employers and employees (see Bradley, 1992b and Tolfree, 1990). This too then should be an equally important aspect of labour markets for academics to appraise, and is the thrust of this thesis. However, analysis of compensation is reserved for Part 2 of this thesis. Here we explore the proposition that expert protean employment is an important labour market segment to study. This is done by detailing the changing circumstances around employment.

What then are the changing circumstances which may influence employees to become protean? And what are the factors which we believe influence employee's attitude toward the composition of their compensation package in the future (namely an increase in control over working-time)? Furthermore, what are the factors which may make this an increasingly important part of the labour market to investigate? These questions are addressed in the next section.

EVIDENCE FOR CHANGES IN THE LABOUR MARKET

The current influences that are discussed below can be broken down into four broad categories: demographic changes, industrial changes, technological changes and organizational changes. Each of these will be taken up in turn, firstly suggesting the impact the changes might have on the work force itself, and secondly detailing some of the relevant data.

Demographics

Changing demographics can be a potent influence on the way labour markets are structured and the way labour markets operate. Currently the demographics of the labour force are changing acutely. These demographic statistics imply that there will be a critical shortage of people becoming available for employment. This means that fewer and fewer people will enter the workforce as years pass. This puts increasing pressures on employers to find new areas of the population from which to recruit skilled employees. Two of the most accessible pools from which these employers might draw from are the large group of non-industry employed women and the increasing proportion of older people, as well as immigrants and minorities. Still, though, the projected increase in the number of women in the workforce may be the single most important demographic change. In summary, these changes mean that there will be fewer men and younger workers, and more women and older workers[9].

[9] Rose and Baker (1991), believe that "with the younger element of the work force a shrinking resource, companies with the foresight to offer flexible working patterns will have the pick of the emerging labour pool" (page 465).

Tables A.1 and A.2 give some indication as to the changes in the labour force in Great Britain and the United States by age (All tables are given in Appendix A). In Great Britain (Table A.1) there is expected a 21.6 per cent decrease in the 16 - 24 age group between 1988 and 2000, accompanied by an 18.0 per cent increase in the 45 - 59 age group. In the US (Table A.2) there is a similar pattern, with an even greater accentuated increase in the 45-64 age group of 52.0 per cent.

The consequences of this shift are significant. Because the larger group of older workers may be more than before able to anticipate many years of active life, rather than plan for a complete retirement, they may take on work in non-standard job forms (See P. Johnson in Bradley (ed), 1992b). They may prefer a flexible working-time arrangement. They may even make radical changes in their career plans. If this is the case, the projected increase in this part of the labour force becomes important to the proportion of protean employees in the labour force. Indeed, as this segment of the labour force increases so too may the numbers of employees pursuing protean employment compensation packages, either via firm-internal compensation or via external market-offered compensation packages[10].

Tables A.3 and A.4 show the projected increase in women in the labour force for Great Britain and the United States respectively. In Great Britain (Table A.3) there was an increase in participating women between 1986 and 1990 of 7.9 per cent, compared to an

[10] KPMG management consultants concludes in a London *Sunday Times'* article (4-11-90) that 50+ year old people want a "flexible retirement decade". In another London *Sunday Times'* article (28-10-90) it is noted that IBM has set up a company that uses retired executives on a temporary basis, which is a further indication of a flexible retirement period.

increase of only 2.2 per cent for men. In the United States (Table A.4) there was an increase in participating women between 1985 and 1988 of 7.2 per cent, compared to an increase of only 3.9 per cent for men.

The consequences of this shift again rely on the potential influences the different composition of the labour force may have in altering work-time patterns and work structures. As more women enter the work force, the traditional western family structure may transform. This means that former household patterns and arrangements will be altered for both women and men. They may find it necessary to rearrange the timing of their activities as well as the structure of their family unit (see Galensen, 1991 page 117). This may imply a transformation in the structure of work arrangements as well. This transformation, it is proposed here, may take the form of an increased protean compensation package (again either via the firm or the external labour market)[11].

Even more significant than the general feminization of work is the feminization of the expert employee portion of the work force. Assuming formal education and "expert" ability are positively correlated, an examination of the demographics of education will give an indication of the potential changes in demographics of the expert employee.

Tables A.5 through A.12 show the dramatic increase in formally educated women in the 1980s for Great Britain and the United States. In Great Britain (Tables A.5 and A.6),

[11] A London *Times'* article (28-6-91) reports that MP's working hours will be brought under review "because of the growing pressures of women and those with young families". An *Employment Gazette* article (2-92) on firms that have changed their employment policies reveals the importance to women of flexible hours in order to return to work. Another more controversial article by Felice Schwartz (1989) is also very informative on the subject. This is the article that gives us the new term - the mommy track.

between the years 1977 and 1989, there was a 39.7 per cent increase in first degrees obtained by women and a 155 per cent increase in higher degrees obtained by women. When compared to the men's increases of 6.6 per cent and 34 per cent, the relative increase by women is staggering. When using a more detailed investigation of the composition of this increase (Tables A.7 and A.8) the relevance of this increase to expert occupations becomes clear. Between 1986 and 1990 there was a 43.8 per cent increase in women enrolled in undergraduate engineering and technology as well as a 30 per cent increase in business and financial studies. Graduate enrolment for women between these years was highlighted by a 14.3 per cent increase in medicine and dentistry, a 35.7 per cent increase in business and financial services, and a 48 per cent increase in architecture and related studies.

The United States (Tables A.9 - A.12) shows similar, if not more significant, patterns. Between 1980 and 1990 there was an increase of 13.2 per cent of women enrolled in higher education compared to just a .3 per cent increase of men (Table A.9). Again, the more detailed analysis shows the polarization of these women into specific areas (Table A.10). Between 1980 and 1987 there was an 80 per cent increase in women receiving bachelor's degrees in business and management and a 96 per cent increase in engineering. This is compared to an over all increase for women of 12 per cent.

These numbers are echoed in the numbers of higher degrees (masters and doctorates) awarded to women (Table A.11). There was an 81.4 per cent increase in business and management and a 152 per cent increase in engineering. The growth rate of women in selected professions (Table A.12) is again phenomenal. There was a 35.1 percent

increase in degrees for law, a 45 per cent increase in degrees for medicine and a 62.5 per cent increase in degrees for dentistry.

These numbers suggest that although there is a general feminization of the civilian labour force in both Great Britain and the United States, the largest impact may occur in the employment of expert individuals. In other words, if an increase in women in the workforce will alter the ways in which work is arranged, ie toward a protean style, the most significant area to look for this change may be in the expert and professional fields.

Industries

The significance of these increasing numbers of educated women becomes intensified after looking at the shift in industries where work is performed. The change in the type of work done is primarily registered by the evolutionary increase in the amount of white collar, professional, highly skilled employment. This may be due to, in large part, the shift away from manufacturing industries toward knowledge based industries[12].

Alchien and Demsetz (1972) in their famous article, *Production Information Costs, and Economic Organization*, submit that employees who primarily think or perform their tasks in their minds (expert protean employees) are, due to the nature of their tasks, very difficult to monitor. They conclude that "artistic or professional inputs ... will be given relatively freer reign with regard to individual behaviour" (p 786). Their hypothesis, of course, will not "produce" protean personalities directly, but, it is proposed here, it will,

[12] This increased demand for specialized business services may arise from "the greater financial and administrative complications of increasing levels of international integration of trade, company structures and, in the case of Europe, legislation" (Spence, 1991a).

in conjunction with an increase in knowledge based industry jobs, increase the observable protean behaviour. The increase in knowledge based industries increases the costs of monitoring the employee therefore firms are less likely to do so[13]. This increases the availability of protean behaviour by employees.

Because of the nature of knowledge based industry employment, employers might alter compensation to include control over working-time and other controls for the expert protean employees (see Galenson, 1991)[14]. As expert employee employment increases, the idea of protean employment may not appear as foreign to other employees. Thus, a multiplier effect occurs which may create more and more protean employees. In other words, the less easily monitorable work environment of knowledge based work presses employers to provide an increasingly more open contract of employment. These new contracts make protean employment less strange and other employees follow. This might increase the provisions of facilities at work for protean flexibility, as well as provisions in the community, so that protean employment becomes ever more attainable for more than just the expert knowledge based employee.

Both of these arguments suggest that with an increase in knowledge based professional service industry work, the protean employee will become an increasingly important phenomenon. This is because knowledge based work will make protean employment

[13] Taken further, the firm with its highly structured monitoring functions (through management) might become less necessary as a result.

[14] Still, one must be cautious of these statements since knowledge that is marketable can be relative to its timing, thus forming some time constraints.

more acceptable to a larger portion of the work force and/or knowledge based work will increase directly the number of observable protean employees.

Table A.13 shows that in Great Britain, between 1984 and 1991, there was a 12.5 per cent increase in service industries. This growth is marked by the higher growth rates in the professional expert employee dense industries like: legal services, business services, accountants and computer services. All of these knowledge based industries have growth rates above 40 per cent. This is far above the total industries average of 3.5 per cent. Remarkably, computer services grew at a 97.5 per cent rate, and was the only industry to continue to grow at 20 per cent through the down turn in 1989-90.

In the United States (Table A.14) expert employee dense industries like legal services, accounting, management consulting and computer services registered significantly large growth rates between 1980 and 1986, most near the 50 per cent rate. Again, as in Great Britain, computer services lead all. In the US, computer services grew 82.5 per cent.

To conclude, Silvestri and Lukasiewciz (1991) report, while predicting future job growth in the *Monthly Labor Review*, that there will be a

> "continuing above average growth rate for jobs that require relatively higher levels of education or training. This is reflected primarily in the increasing proportions of executive, administrative, and managerial workers; professional specialty occupations; and technicians and related support occupations. These three major occupational groups ... are expected to account for 41 percent of the increase in employment between 1990 and 2005."

Technology

The growth in these knowledge based industries has not occurred in isolation from changes in technology. Whereas in the last century the emphasis on the impact of change for the employee was regarding (a) the infrastructure of the state (roads, canals, trains, planes etc.), and (b) the tempering of the working conditions of manual employment, this is no longer the case. The infrastructure to move products is well established (albeit still improving), and the advances in automation technology (robotics in the workplace etc.) have made manufacturing work primarily a "human free" mechanized job. We must look elsewhere for the most recent technological influences on working conditions.

As employment increases in industries dense in knowledge based (or expert based) employees greater than in other industries (see table A.13), the important change in technology may be in the manner in which it impacts the ability of employees to transport information or knowledge from one person to another, one department to another and even one industry to another. The modes of this transportation are the basis for the "information infrastructure" of an individual, firm or country. Indeed, increasingly, information systems are formed in a person to person manner. Thus technology is applying pressures on traditional organizations and their role as communications facilitator. The last decade has seen vast developments in the infrastructure of these knowledge based industries. This is where changes in information technology may have the largest impact on working conditions.

The most important changes in the infrastructure of information, ultimately changing knowledge based industries, are grounded in, but not limited to, the silicon chip and the

information storing and retrieval capacity that such devices allow. They are seen innate to new products like: computers, printers, improved and more complex telephone services, satellite links, portable telephones, faxes, and copiers, to name a few. Each of these devices has improved the infrastructure of communication and delivery of information or knowledge. These changes are coupled with increasing standardization across trading blocks which increases the ability of these technologies to facilitate the information highways[15]. All of this may aid the expert employee in composing the pattern of their own work[16].

These issues could ultimately alter the process of producing information based goods and services. They could have the effect of relaxing some of the production time constraints. This, when compared with traditional production, may have the consequence of allowing the producer (in this case the knowledge based or expert employee) a more working-time flexible environment[17].

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[15] The executive chairman of Cable and Wireless UK, Lord Young, in a London School of Economics Business Performance Group lecture Series (1992) stated that "over one half of the telephone traffic over the Pacific is fax", and that video phones will become commonplace and that electronic newspapers are on the horizon. The executive chairman of Motorola Inc., George Fisher, in another LSE Business Performance Group lecture emphasised the complications and necessity of standard setting.

[16] The influences of technology may even be as far reaching as a recent development where, "forecasters are considering putting screens in the foyers of offices" that display likely weather changes in the few minutes or hours ahead. "People will decide whether to go to lunch now or wait depending on the likelihood of rain" (London *Times*, 12-07-91). They can only do so if they have some working-time control.

[17] Of course the effects of technology may be a consequence of how they have been implemented by an organization. Few technologies have properties in them which cannot be altered by the way in which they are implemented. (see Austrin, 1991; Burnes, 1989; Buchannan, 1984; and Dy, 1990). But in this thesis the stress is on the "expert" professional employee. The power that this type of worker can have in determining how technology is used is assumed to be strong.

Without labouring the point, a few examples may help. Since knowledge producing industries are largely serviced by the computer its impact may be intense. The computer can be linked with other computers (networking) and information can be transported easily from one terminal to another. The prodigious printing capabilities of the computer allow a near final knowledge based product to be completed solely by the expert employee. The abilities of fax systems to almost immediately transport this product across the telephone lines links the employee in a physical manner as well.

Of course this all relies upon the standards setting practices of firms developing and producing these products. For without a standards setting policy the links may break down as one piece of equipment is incompatible with another. And this is on the increase. The industry has recognized the necessity of standards and different firms' equipment is becoming increasingly integrateable with others. These factors may essentially make the office, and all of the working-time restrictions that office hierarchies impose, if not obsolete, at least diminished in importance (See Hakim, 1984a and 1984b; Huws *et al*, 1990; and Kinsman, 1987 for related discussions on home working).

Still, the consequences do not have to be as severe as the abolishment of centrally located places of work. The important fact is that within these places of work (be they at home or in a centrally located office) the time constraints of production have become more relaxed due to the technology developed. No longer is sequenced production so constraining over working-time. If "functional specialization requires synchronization of various parts" resulting in a fixed timed pattern (Hassard, 1989b; p 94), then knowledge based jobs, a consequence of technology, with their more general functions may

inherently require less synchronization, or specified sequencing[18]. Concurrent production between processes in a knowledge based industry may take place miles away from each component and even at different times[19]. Timed production (externally imposed deadlines) is most constraining on products that are non-storable (the product if non-storable must be produced, in time, close to deadlines). Knowledge can now be stored, updated and retrieved quite easily so that deadlines do not as severely constrain production backwards in time. Production duration (the time necessary to complete a task) is less constraining in that stopping and start up costs continue to shrink as knowledge becomes more readily accessible through increased powers of technology[20].

In light of these changes though, one must be aware that knowledge as a marketable product is intertwined in the timing of production. Having knowledge first is an important competitive advantage, and therefore this aspect of knowledge based work may develop increases in time constraints.

Still the time constraints that were most severe in manufacturing production have become less severe in knowledge based industries because of the technology driven changes in

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[18] Sequencing a knowledge based product with the advent of computers with their large memory systems may be unnecessary. Data or knowledge collection, considered to be a first step in many knowledge based products, now, with computers, is a continually updated phenomena. It is no longer necessarily a sequenced precursor to a knowledge based product.

[19] A knowledge based discussion (production) can take place "concurrently" through the transportation of information from one user to another through the computer. This can happen not only at different places but also at different times. The information is stored and can be withdrawn to be used concurrently at any time.

[20] The important consequence of this freeing up of production processes in time is not that they necessarily dismember the employee from the employer and the firm, or that they entirely relieve work of all of its time constraints, but that the production process itself of an expert employee (now more likely to be knowledge based) may be radically altered.

the production process of knowledge based products. This is a fertile environment from which the protean expert employee may flourish, either within the firm or in the external labour market.

Tables A.15 and A.16 gives some numbers relating to the increase in technology in the United States and Great Britain. The most relevant and illuminating of available data is for the US. Table A.15 shows the increase in the ratio of personal computers to desk workers. In 1984 this ratio was just over .05 and in five years to 1989 the ratio had increased to .34. This shows the transformation of the office in the US. Data for computer use in GB is less easily obtained. We must rely on sales figures (total sales = sales at home + (Imports - Exports). Using this as an indicator we see in Table A.16 that sales of computers (this includes mainframe, micro, home computers and printers) more than doubled from 1986 to 1991.

Organizations

Technology may be the backbone of the new work environment but there have been some almost equally important organizational changes that will feature large in the future - namely the method in which pecuniary payment is made. The interest in new payment systems that are linked to the performance of the individual and/or of the company in which one is employed has been growing steadily in both Great Britain and the United States. Their impact on the employee may not be just in the form of payment received for work but also, indirectly, in the way that the employee is controlled or monitored.

With a change in payment structures away from compensation solely consisting of an hourly or salary based pay, there may be some alterations in the employment environment as well. The type of control and monitoring that is necessary for someone who is being paid by the hour may be extremely different from the type of monitoring that is needed for someone who is being paid through company performance related pay. This thesis is not the place to examine the exact consequences of performance pay; others have done so thoroughly (Clark, 1992; Nalbantian, 1987; Stiglitz, 1987; Bradley and Gelb, 1986). In general, there are some who say that with an increased proportion of payment linked to some type of company performance there is less need for the employee to be monitored. The logic is simple. There will be a direct impact on the employee's own income if shirking occurs. There is less direct impact if the employee is being paid via the salary system or an hourly system[21].

For the expert protean employee the consequences are hypothesised to be, once again, a general liberation of the workplace. This liberation comes not only in how work is completed, but also in the working-time restrictions that are placed on the employee. There is less concern for *when* the employee is working and under what schedule or regime, and more concern for the final product or the bottom line. Thus, profit related pay may act to release the expert protean employee from time constraints.

Tables A.17 through A.20 show the rapid increase in employee share schemes and profit related pay schemes in Great Britain. Between 1985 and 1990 there is evidence for

[21] Of course this does not prohibit some shirking since when working as a team there may still be incentives to shirk. The point is that, marginally, there should be less need to monitor the employee. See Alchien and Demsetz (1972) for more on this topic.

growth in the number of schemes from a low estimate of 28.5 per cent to a high estimate of 92.6 per cent. At the same time there was growth in the number of employees participating in the schemes from a low estimate of 55 per cent to a high estimate of 171 per cent. Between 1988 and 1991 the number of profit related pay schemes increased 107 per cent and the number of employees in these schemes increased 288 per cent.

In the United States (Tables A.21 and A.22) there is comparable evidence for growth. Between the years 1980 and 1991 the number of employee stock ownership plans grew by 97.4 per cent. The number of employees involved in such plans increased 179.8 per cent.

These sets of numbers for both Great Britain and The United States give some indication as to the dramatically increased numbers of companies and employees in such plans. This swell of interest could lead to the conclusion that the effects on working conditions may be just as dramatic. However, their marginal effects are enough here. For when combined with changes in technology, changes in industries and changes in demographics it suggests that the temporal conditions surrounding work will also change.

OTHER EVIDENCE FOR CHANGES IN THE LABOUR MARKET

> "Unlike the position that exists in the physical sciences, in economics and other disciplines that deal with essentially complex phenomena, the aspects of the events to be accounted for about which we can get quantitative data are necessarily limited and may not include the important ones. ... And while in the physical sciences the investigator will be able to measure what is, on the basis of prima facie theory, he thinks important, in the social sciences often that is treated important which happens to be accessible to measurement." F.A. Hayek, *Nobel Memorial Lecture* - 1974

The harder evidence displayed above about demographic changes, industrial changes, technological changes and organizational changes now gives way to some of the less quantitative evidence about changing attitudes and the changing environment. Some of this evidence will be based on the popular discussion about a new work ethic. Allied to this argument are the powerful environmental campaigns that have swept much of the Western world. An effort has been made to keep the discussion of these fecund topics brief, but this should not be inferred as a measure of their significance.

The Development Ethic

The new work ethic literature is summed up by the development ethic as opposed to the current work ethic. The basis for the development ethic is to develop oneself in totality. This includes the development of the physical, intellectual, emotional, spiritual and also includes the earning of a basic salary. No longer does more necessarily mean an increase in utility. Two cars may not be better than one. The most expensive suit may no longer bring the admiration of one's peers.

Basic economic logic is being called into question. Does increased material affluence necessarily bring psychological well-being? This leads authors like Kareasek and Theorell (1990) to develop new models with labels like "New Value". They define this as a value that is "process oriented not product oriented" (p 192). It adds value to a person or an organization, as opposed to adding a physical input into the making of a final physical product. Occupations that already possess new value elements are the

professional occupations, craft occupations and mid-level professionals[22]. They also call for an off-loading of pressures from some of the top managers etc. onto some of the occupations at a lower level. They feel that this might increase psychological well being for the top level managers, by decreasing their pressures as well as increasing the psychological well being of the lower level managers by increasing their responsibilities. In the long run, it is hypothesised, firms would be better off since the innate capabilities of human beings are more or less equally distributed across populations. The spreading of opportunity will more likely produce a more inventive output.

It is like-wise argued that managers who follow the development ethic will realize the importance of developing the whole person to the performance of the firm. This will foster an increased team effort spirit, which, it is hypothesised, produces employees that are more interested in bottom line results as opposed to mere appearances. What one contributes will be of more consequence than one's position on the corporate ladder. This means a change in management style. "Because our bosses will begin to function more as coordinators and facilitators than as warlords, control will become less an issue" (Roth 1989). Thus, control, including control over working-time, becomes less of an objective in the firm's employment policies.

The argument progresses toward one of its key elements - time. In the development ethic, freedom over working-time is highly esteemed, since control over time is needed

[22] Kareasek and Theorell (1990) feel that temporary work is lowest in new value. But they could not measure it in their sample, since no temporary workers were studied. This thesis would call into question their conclusion about temporary work as a general classification. New value to us would be best placed on more precisely defined occupational categories. Perhaps even defined along geographical lines as well.

to develop all aspects of ourselves. Some activities that help in this development can not be performed outside traditional working hours, like: seeing one's baby take its first steps, or tending to a loved grandmother, or playing tennis in the mid-day sun. If there is an increased occurrence of the development ethic, the need for working-time freedom may follow.

The development ethic may first surface in those employees with life styles most satiated with the basic needs like: housing, clothing, food etc. These are likely to be the scarce knowledge based expert employees. Their compensation packages may then reflect this new development ethic and therefore contain compensation in the form of working-time control. This is directly to the point of the forthcoming sections of this thesis, in that the compensation package, when evaluated, must be a larger set of items than merely pecuniary levels. It is suggested there that control over one's time is a basic ingredient that can produce significant increases in personal utility, and is an important element in segmenting protean compensation from other compensation.

Environmental Pressures

Pym (1981) while also calling for new development values, links these ideas with the present concern for the environment. For him the new worker is "above all ... the embodiment of resourcefulness". Recycling and sensitivity to one's consumption are valued in the highest degree. This link between the environment and the development ethic seems appropriate for most of these new work plans. It might be said that the threat of the ecological destruction of the planet surfaces in the literature about work ethics in the form of a reevaluation of what is considered valuable to the employee.

Should one choose to purchase another or better car, and thus create the adverse ecological effects this purchase might have on the planet, or should one choose an increased opportunity to develop both professionally and personally? A more detailed account of the environmental argument and its possible connections to the development ethic is given below.

One of the more accessible planetary environmental models is in Meadows, Meadows and Randers' *Beyond the Limits* (1992). They set out a simplified model (simplified from their complex computer model) of how present patterns of living will effect the future of the planet. The model they use plots the state of the world as far as its resources and pollutants are concerned along side the material state of living for the human population. They then alter the various parameters through the computer and they conclude the choice is between either global collapse or a sustainable future. The results depend, of course, on the levels of the parameters.

A principal mechanism that the parameters pass through are the programmed delays in feedback systems. So that a too long delay causes the overshoot of production which turns into either (a) oscillating recovery of the system or (b) a total collapse, as the system, unable to react in time, is unable to regenerate and then recover (oscillation alone can be devastating)[23].

[23] In their book Meadows *et al* (1992) give an example of over-shoot due to delayed feedback mechanisms in the accumulation of CFC's in the stratosphere. It was fourteen years after the possible link between CFC's and the destruction of the ozone layer were reported that Du Pont, the worlds largest producer of CFCs stopped production of those compounds. However the production that took place within those fourteen years has not yet had its full effect on the ozone layer. Only time will tell if this particular overshoot has caused oscillation or collapse.

Even with the shortest feedback system they conclude that with liberal estimates of pollution control, yield enhancing technologies, land protection technologies, and resource saving technologies their model still yields a collapse scenario. This results in a world wherein pollution is high, consumer goods per person are low, services per person are low, and food per person is low, as well as a decreased life expectancy.

What they conclude, most importantly for this thesis, is that no combination of technology can sustain a healthy planet. They claim that in order to avoid collapse in their model, one must input a structural change in the system. The change they program for is a change in the "cultural expectations and practices ... that associate social status with material accumulation, and that define goals of getting more rather than having enough" (p 192, this is programmed by restricting output *per capita*). They maintain that this does not mean a no growth stance, but a call for "qualitative development, not physical expansion" (p 210).

The results of the combinations of changes in technologies and a structural change in the system are: life expectancy is high, a generous amount of food per person is sustainable at a reasonable level, pollution ultimately falls, and notably services per person are quite high. Industrial output is sustained but decreases slightly and population is maintained by both increasing the standard of living and by a change in attitude. It is a far more attractive result than those predicted without structural change.

Again this structural change in attitude may most likely be accessible to those groups of workers that have the most advantages in the labour market. They will generally be the

best paid and more secure in their work. Adopting these new attitudes may first be the expert employee.

The links between the environmental models and the new development work ethics then are complete. Both maintain that a change in attitudes toward what is perceived as a reward for work is needed. Development of the person is prized as opposed to an increase in material wealth. It is not the task of this chapter to defend these development ideas. This is not the point. The point to be taken is that these are serious discussions in a very accessible format, both in books and on television, and they may turn out to have a great impact in altering work attitudes, work patterns, and work compensation[24].

CONCLUSION

For all of the dimensions of change discussed in this chapter, both the hard evidence and the soft evidence, a feedback system similar to the environmental feedback system may occur in the labour market. Namely, the problem of signalling delays in labour markets is critical in understanding the recent data given above. The data is broad and yet indicative of forces that may change the pattern of working-time. The exact amount or timing is unclear due to the signalling delays inherent in the labour market.

[24] Guest (1992) discusses the possible effects of popular phenomenon can have on management styles. In his article he reports on the influences of Peters and Waterman's (1982) book *In Search of Excellence*, and believes that the book has had a "profound impact upon management thinking and upon behavioral sciences". He takes this stance in contrast to the academic discrediting of the style of the book.

The question remains -- who will react to these signals? Will firms provide for the development needs of the employee within the corporate structure, or even within the physical building (ie gymnasiums, adult education and child-care facilities), and attempt to maintain considerable control? Or, will the firm relinquish its time restricting strong hold so that the employee can pursue the diverse activities when doing so is most suitable and when it yields the highest levels of satisfaction? On the other hand, external markets may begin to first cater for the needs of a work force which preferes greater control over working-time. This could result in less time restricting institutions (hypothesised later in this thesis as temporary agencies), which also allow for the pursuit of the developmental activities. Finally, there may be a combination of both of these influences.

This chapter has set out not to prove the various linkages between the selected changes but just to provide a glimpse of the general trends toward increased preferences for control of working-time. In other words, we did not provide proofs to the hypothesised connections, to do so would be a task that would take volumes. However, we did intend to show the changes in employment which may increase the ability to control time at work. An alteration which may be suitable to the protean expert employee; an employee who is time-sensitive.

We believe, Labour Market Segmentation theory has not suitably addressed the working-time preferences of employees. Also, a change in the composition of work rewards toward working-time freedom may alter compensation to the employee in unique ways. These issues are addressed in Part 2 which follows.

PART 2 - Theory

Chapter 3

Inter-occupational Labour Market Segmentation -- And The Supply Side

INTRODUCTION

The protean employee discussed in Chapter 2, is defined as an employee that seeks control over their working conditions. More precisely, control over time at work, both the amount of time and more importantly the pattern of time. This invokes a theory of new job forms, here the temporary agency which allows for some supply-side influences. This implies a different approach to temporary work than that proposed by Labour Market Segmentation (LMS) Theorists.

The first section of this chapter will frame the thesis in its appropriate position in LMS theory. This is possible because of the depiction of LMS theory that is used. The second section will begin to develop a model of intra-occupational labour market segmentation by utilizing some familiar segmentation techniques. Finally, the third section will propose the use of a supply-side, preference driven, neo-classical model of job forms. It is the point of this chapter to direct the reader down a progressive route towards a more appropriate evaluation of segmentation within an occupation and within a firm. It also allows for an accurate placement of this thesis in a labour market

segmentation "slot". It is the task of the next chapter to propose a more rigorous theory which is hypothesised from the general model that is implemented here.

THE DYNAMICS OF LMS THEORY

Labour market segmentation theory (LMS) was initially based on the belief that segmented labour markets are distinguished by a "primary" market and a "secondary" market. The primary market exhibits all of those "good" traits of employment like: job security, high pay, high mobility, interesting work, etc. and the secondary market exhibits all of those "bad" employment traits like: job precariousness, low pay, unvaried and tedious work, etc. So segmentation was defined by the working conditions of a particular job form. Ultimately segmentation theorist believe in a compartmentalised labour market as opposed to a fluid labour market.

As LMS theory developed, the definitions of the different segments varied according to size, importance, and with the author's opinions of the good or bad job characteristics. Although confusing, this is valuable because the theory is able to adapt to a variety of issues. Therefore, the significance of certain areas of working conditions may expand while others may contract. Because of this adaptability, it may periodically be necessary to reassert different aspects that may be segmenting the labour market while still using LMS theory. The evolution of the protean employee may therefore make it necessary to rethink past LMS theory.

LMS theory has been described, most notably by Caine (1976), as a direct attack on neoclassical labour market theories. Neoclassical theories assume that market forces will efficiently distribute the work force and, more importantly, that market forces will do so in a way such that if there were forms of segmentation they would be abolished, through competition. LMS theory believes that this has unsatisfactorily described the labour markets in North America and Europe.

Because it is an attack on neoclassical labour market theory, most LMS studies have attempted to determine if segmentation exists at all. From this broader question, however, other studies have tackled questions pertaining to labour market segmentation specifically. These studies try to resolve issues such as what to include in the primary segment and the secondary segment; whether there is a high or a low level of mobility between the two segments; whether the segments are characterized by sex or race or are they more likely to be characterized by industry or occupation?; the extent to which institutional arrangements like unions been active in promoting or breaking down the wall between segments; and whether social institutions like discrimination play a part in segmentation.

These are all valid questions that the LMS literature has brought forward producing various and sometimes conflicting answers. We believe that some of the incongruencies may result from the desire to prove that there is one all encompassing form of labour market segmentation, or that labour market segmentation is necessarily absolute. There may be some benefit in combining opposing segmentation theories and approaching them so that they can coexist and can also coexist with some neoclassical ideas attached. This

becomes important when discussing new labour market segments, like the temporary agency employee (a hypothesised form of the protean employee), that have been relegated to the vague classification of secondary level job form.

HISTORICAL DEPICTION OF LMS THEORY

Segmentation theory as it has developed might be broadly defined by the extent of the size of the labour market the segments cover. These levels of classification are described in Figure 3.1 below. The first level, Level 1, may represent some of the first theories of LMS like Piore's (1970) model. Here the segments are defined through the people that were relegated to them. This was partly because the theory was being developed to explain the persistence of urban ghettos and poverty in America. It was argued that it was the characteristics of the secondary labour market workers that explained the inability to move into the primary market. This then emphasised not just individual traits but traits that were developed by secondary employees because they were the most rational course to follow when living in secondary market circumstances. But this rational course maintained their status in the secondary market. Cain (1976) states that "this model has the aspect of the 'vicious circle' or the 'self-fulfilling' prophecy in it". This is the broadest of terms in segmentation theories in that it can encompass whole classes, nations, and genders of people.

Figure 3.1
The Progressive Levels
in which Labour Market Segmentation Discussions Take Place

	Primary	Secondary
Level 1	Divided by class, gender or nationality	
Level 2	Divided by industry	
Level 3	Divided by occupation	
Level 4	Divided by mobility chains	
Level 5	Firm internal division	

Figure 3.1 shows the five levels of Labour Market Segmentation theories. There is a general progression towards smaller units of analysis as one moves from Level 1 to Level 5. Much of LMS debate is trying to determine where the segmentation between primary and secondary segments occur.

From this broad segmentation theory we move down to the second level, Level 2 in Figure 3.1. At this level, discussion takes place on an industry scale where certain industries are seen as either being primary industries, which provide the "good" jobs and secondary industries which provide the "bad" jobs. This level of segmentation theory was used by Craig, Garnsey and Rubery (1984) in their study where "the excluded industrial sector corresponded to the primary sectors of the labour market segmentation models" (page 92). They conclude that "the role for a differentiated labour supply in structuring pay and employment has not been given sufficient attention". Oster (1979) found evidence from the US, using census coded industries, that "reflect" industry segmentation. Whereas Level 1 yields only two segments, this second level of definition can give rise to tests over many industries. The divisions can be numerous.

The third level is a division of the primary and secondary segments by occupation. There has been some recent evidence that this may be some of the best uses of LMS theory. Dickens and Lang (1985) by utilising their switching regression model have shown that "occupational based classification schemes do a better job of dividing workers between sectors than do industrial schemes" (Rosenberg, 1989, discussing Dickens and Lang). McNabb (1987) in his study using general household survey data and estimating earnings functions concludes that "the findings ... support a form of labour market segmentation based on occupation rather than one associated with industry specific characteristics" (p 271). As convincing as this evidence is, we believe that no segmentation theory necessarily precludes any other. In other words, there may be some industries that use higher percentages of occupations that exhibit secondary segmentation characteristics.

In the fourth level we move to the theory postulated by Doeringer and Piore (1971) in which they see the primary market as being distinguished by the type of "mobility chain" that an employee may be on. The different mobility chains will constitute the differences between the primary and secondary segments. The primary segment has mobility chains which are akin to career ladders, whereas the secondary market is described as having mobility chains that lead to no where. They are instable dead-end jobs. Stewart et al (1980) investigate this in the clerical labour market where "they point out the difference between a permanent clerical job and a clerical job that is a trainee slot for management" (Burchell and Rubery, 1990). The mobility chain theory can also be used to break the primary sector down into sub-segments by the employee's relative position on the mobility chain. Still, though, the two tiers on the primary sector mobility chain should be recognized as being in the primary sector.

The fifth level of segmentation theory is the Atkinson (1985) model of the "flexible firm". Here the division of core and periphery segments are divided within the firm according to their relative flexibility attributes (discussed in greater detail in the next section below).

Where then does this study fall in this stylized representation? Its intention is to be unabashedly placed in the primary segment at levels 1 through 3 of segmentation analysis. The technique used here relies upon the assumption that accountancy (the occupation from which data was collected) is a primary occupation thereby occupationally exhibiting consistent forces through all of the participants. It also includes the Doeringer-Piore mobility chain theory distinguishing between tiers within a primary segment

mobility chain. The analysis itself though is best described in terms of the core-periphery analysis of Atkinson because it will segment the accountnacy labour force into job forms. Overall our analysis should be considered a micro analysis of a primary segment occupation, when looking at levels 1 through 3 of the hierarchy of segmentation theory. Furthermore, application of the findings to levels beyond the specific occupation (accountancy) and the firm must be done so cautiously.

SEGMENTATION AND NEW JOB FORMS

Intra-occupational segmentation[1] in its simplest form can be described as people performing similar jobs within one occupation but in various job forms. For example, waiting on tables can be performed under the employment status of a *long standing* full-time permanent employee, a *new* full-time permanent employee, a *permanent part-time* employee, or as a *one-time temporary* employee. Each of these are considered here to be different "job forms". The emphasis of this study will be on comparing the long-standing full-time permanent worker, the entry permanent worker and the temporary agency worker. These job forms and the resulting differences in working conditions within an occupation, or intra-occupational segmentation, are the main concern of this thesis.

These different job forms are notoriously described by the virtues they bestow upon the firm or by the detrimental side effects they inflict upon the employee in the secondary

[1] The term "segmentation" is used here as opposed to "stratification" as segmentation appears to be the norm when discussing job form designation like "temporary workers". There has been some delineation between the two where stratification implies some sort of scale that is used to rank occupations in certain levels of social status (Stewart *et al*, 1980), and segmentation implies limited mobility between different labour market segments (Jacobs and Brieger, 1988).

segment. Although there is some acknowledgment in the literature about the benefits that might accrue to the temporary worker from working under a temporary employment situation (these are usually comments made in passing), it amounts to very little. Furthermore, there has been almost no empirical investigation as to the characteristics of these benefits as registered by the current attitudes of temporary agency employees. There has also been very little inquiry as to how the temporary employee's working conditions compare to working conditions of similar employees in the labour force, as described by the employee. We believe this omission is because most of the previous investigation has been driven from a demand-sided theory point of view. The approach outlined below suggests that demand (or firm) derived explanations of labour market segmentation filter out important information which is captured by the supply (or employee) derived explanations of labour markets.

Atkinson's theory of the flexible firm - the "core-periphery"[2] analysis is an economical synthesis of the various job forms in a simplified and readily accessible model of labour market segmentation. We suggest that, like Hakim (1990), although it is not a perfect description of a real life firm that exists, it is a very useful analytical tool to discuss job forms both internal to the firm and established from external institutions. It is useful, she contends and we agree, because it facilitates discussion between disciplines and across theories. Its effectiveness in this regard can be documented by the amount of literature both academic and practical that the description has generated.

[2] "Core" and "Periphery" were originally used by Averitt (1968) and Bluestone (1970) when referring to different sectors of the economy.

Atkinson's study and studies that have followed have as their main goal tried to

"explore the extent to which more flexible working practices had been introduced, to ascertain under what circumstances particular kinds of change might be found, to consider how permanent they might be and to look at their implications for employers, workers and job seekers" (Atkinson 1986 page 5).

Because Atkinson's model categorizes job forms within one particular firm, it takes a particular demand-sided point of view of job segmentation; it stresses organizational reasons for various job forms. This, it can be argued, is typical labour market segmentation theory in which firms (or outside influences) are the main forces which cause the segmentation in the labour market. It is the employees plight to go through life "trapped" in the periphery (or lower status job), because they have been segmented out of the core labour force via demand-sided influences.

It is asserted here that Atkinson's model, as well as other demand-sided labour market segmentation models, may be acceptable when discussing the structure of the firm, and how different job forms are utilized within a firm, but they are less acceptable when trying to discuss the specific characteristics of job forms and how they will or will not provide for a specific group of employee's preferences. This is because their approach looks at employment from an institutional point of view, thus filtering out varying employee preferences on job-form selection. A temporary job harvesting sugar cane on a Southern Florida plantation may exhibit the same characteristics as a temporary clerking job in a law firm in London when comparing attitudes of the *firms* (numerical flexibility). But the two jobs, although both temporary, will not necessarily exhibit the same characteristics when comparing attitudes of the *employees*. (In LMS theory the former is emphasised, in our approach it is the latter.)

An underlying assumption is being made: that differences in job form characteristics within occupations rather than across occupations will result in a more accurate description of a job form. This means that the hypothesis derived from this approach is concerned with intra-occupational labour market segmentation. It is not concerned with inter-occupational labour market segmentation. This is important in that an intra-occupational comparison will aid in extracting the influences of the job form of the atypical employment, here temporary agency work, rather than the influences of the occupation. This approach is an attempt to develop an accurate format to analyze atypical employment, and different job forms, while leaving some of the distorting effects of the flexibility debate behind.

So, this theses is not about the flexible firm *per se*, but about the employees' working conditions when employed in various job forms. It attempts to establish a system of intra-occupational job forms. This, it is hoped, will produce a more realistic description of the value of the different job forms and the different compensation packages confronted by different employees within an occupation. The structure of the Atkinson model is implemented in hopes that a familiar framework will facilitate a quick and clear way in expressing a *supply-side derived model of intra-occupational segmentation.*

SUPPLY-SIDE (OR EMPLOYEE PREFERENCE) DRIVEN INTRA-OCCUPATIONAL JOB FORM CHOICE

In short, the supply-side model is that intra-occupational segmentation will not occur solely due to the firm, but will also be influenced by the preferences about working conditions of the employees that are in the specific job forms. This is a semi-neoclassical

approach in that the preferences of the employees are considered to be attainable through the attributes of different job forms. Acknowledgment by the employer of these preferences then acts as compensation, via the employee's utility function, and therefore effects job form working conditions and/or job form choice (this is taken up in greater detail in Chapter 4). Because the theory makes no reference to the broader segmentation which may occur when choosing an occupation, it allows for institutionalized labour market segmentation at either that level or at a larger social level. One might say that it even defends this idea by assuming that it is so[3].

Still, job segments here are not characterized through their relative flexibility to the firm, but through job characteristics of the job form that may be valued by the employee. It is hypothesized here that each job form can be characterized by a set of working conditions as reported by the employee. This is important. It means that the job form's compensation package's relative value is determined by the attitude of the employee, not by subjective opinions of those who classify the job form. For example, if a job form lacks job security but, relative to other working conditions, obtaining this job characteristic is not important to the employee, its significance to the job form is diminished.

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[3] Burchell and Rubery (1990) have investigated supply-side segmentation in the labour market using the Social Change and Economic Life Initiative (SCELI) attitudes/work history data for Northampton. On the basis that "firms have been found to have distinct notions of the existence of segmentation in the labour supply, particular groups are favoured to occupy particular job slots..." (p 552-553). Although the basis of segmentation is through the supply-side characteristics, the actual segmentation of the labour force is through the demand-side. The firm divides the labour supply. They find five different clusters which are predominantly divided up by sex and mobility. Their study may be regarded as taking place in Level 1 of Figure 3.1. Whereas this study does not have such broad intentions with regards to labour market segmentation. Our thesis is developed at levels 4 and 5 (and 6 of Figure 3.3 which follows).

This means that job form segment classification may be partially linked to, or formed by, the employee's preference for a certain set of job form characteristics (for the protean employee of Chapter 2 - preference for control over working-time), not solely by the demand-sided influences of institutions. Furthermore, the job form characteristics may also be fused to the employee's chosen occupation. One occupation may have relatively poor job security across all types of job forms, whereas another may have good job security. In summary, some job form working conditions may be linked to the preferences of the employee and some working conditions may be universal across all job forms within an occupation.

Recall that this is not a theory of the firm or a theory of occupations, but a theory of job forms. It is not the objective of this thesis to propose any new theories of organizations but to emphasise the supply-side of job form working conditions. The LMS theory is "flipped" to emphasise the employee's point of view. Understanding this is fundamental to understanding the analysis.

Subjective job form descriptions do have their role in this thesis, but that role should not be considered identical to the one segmentation theorists apply. Here the subjective job form labels establish a starting point of analysis. After that the employee's opinion is given more attention to understanding the job form. This is because of the perspective that this model is attempting to achieve. It wants to formalize the notions of an employee, supply-side derived theory. This then entails a rethinking of terminology for proper analysis. Indeed, this is the point to be stressed throughout this thesis, that an overindulgence in discussions about the organization of the firm and other institutions

may overlook some of the elements of job forms important to employees. This may lead to incorrectly proclaiming pure institutionalised segmentation. In our case the relegation of temporary agency employees, with protean preferences, to a vaguely defined secondary labour market segment.

Thus, we believe that employees are compensated in a way that is partly determined by their position on the mobility chain and partly determined from the employee's current personal preferences. On top of this, the occupation itself may exhibit its own set of characteristics (inter-occupational segmentation) which effect all job forms.

In summary, the range of choices of occupations may be a result of labour market segmentation (associated with Level 3 in Figure 3.1), institutional mobility chains (career paths associated with Level 4 in Figure 3.1) may also lead to labour market segmentation. However, employee preferences can lead to job form choice which is reflected in different job forms with different sets of working conditions (which here are proposed to form a part of the compensation package), so that segmentation may play a part in ones occupation and preferences in ones job form. As Paul Ryan (1981) states

> "... segmentation is clearly a matter of degree. ... the economist is well advised to study the relative strengths of competitive and segmentationist forces as they vary across time and place" (page 18).

We add to this that strengths may vary when comparing occupational choice with job form choice. So that segmentation forces are predominant in occupational choice and employee preferences are predominant in job form choice.

THE RELEVANCE TO PROTEAN EMPLOYEES

This model then allows for a changing form of compensation to include those contemporary employee preferences that might better describe different labour market segments. This means that a protean employee (described in Chapter 2 above) may influence the compensation package toward greater control over their working conditions (control over working-time). If this is not available to them in one job form (either due to their lack of seniority or other reasons), other market-mediated institutions may arise that provide for the employee's preference for control over their working-time (the temporary agency) and thus form a distinctive labour market segment.

Some immediate results can be drawn from the model as it is described so far. Some characteristics of working conditions should be influenced by the occupation selected and should therefore be relatively stable across all job forms within an occupation. Other working conditions will be influenced by one's position is at on the firm's mobility chain. **More to the point for this study: some job form working conditions should correspond closely to the preferences of those workers employed in them.** In other words, the working conditions an employee faces (or the compensation package the employee receives) within a job form should be influenced by the employee's own preferences. Finally, of course, some working conditions should be influenced to some degree by a combination of those listed above.

If we describe this approach, in Ryan (1981) terms, we are allowing pre-market segmentation (segmentation of capabilities which restrict occupational choice). We, however, enter the debate regarding temporary agency employment in the in-market

segmentation analysis. For if, as Ryan states,

> "The dispute between the segmentationist and orthodox approaches hinges ... upon their divergent assessments of the importance of in-market segmentation" page 6

then it is important to assess to what degree differences in working conditions between temporary agency employees and permanent employees are formed by either in-market segmentation, causing differing working conditions and compensation packages, or a result of employee preferences which are reflected in different compensation packages.

We believe that an over emphasis of demand-sided studies, wrongly emphasise the in-market segmentation of temporary agency employees. Thus neglecting the important aspect of temporary work, namely its working-time pattern novelties.

This employee preference theory implies a linking of those characteristics of a job form that are valued by the employee and those characteristics that the job form actually provides. If these match, there will be some evidence that the employee has, at this time in the work history, selected the job form which most accurately suits their needs. It is, then, the employees' opinions' of their current working conditions under their present form of employment that is of the most paramount consideration for this model. Through this type of data it will become established whether supply-side forces influenced labour market segmentation.

CONCLUSION

Involving a discussion of personal preferences with LMS theory in some ways brings LMS theory back to its beginning. Recall that some of the first segmentation theories

were used to explore the persistence of US urban ghettos in the 1960s. It was then hypothesised that because people were being trapped in the secondary labour market they would take on traits that made them less desirable to primary segment employers. These traits were not considered inherent in their nationality, class or gender but due to their labour market segmented position. "Low wages and the virtual absence of benefits combine with undesirable work conditions to discourage stable job attachment by the labour force" (Harrison, 1974). Furthermore, these traits develop because they are the best attributes to hold while being in the secondary labour market. Thus the "viscous circle" hypothesis. The personal preference theory, however, does not link personal preference to the position in a secondary labour market segment. The theory is based on the preferences of individuals.

The difference lies in our definition of the terminology used. "Traits" in early segmentation theory mean precisely those characteristics of workers which are reactions to their secondary segment situation (see Harrison, 1974; and Cain, 1976). These work habits then make them undesirable for primary segment work. The "personal preferences" that we use here are those characteristics of jobs that are desired *by the employee*. They are not endogenous trait variables but preferences exogenous to the labour segment. If so-called secondary labour markets provide for the preferences of those working in them at the cost of other "good" characteristics, then instead of segmenting the market into primary and secondary segments the market may be providing alternative forms of work arrangements that are neither "primary" nor "secondary" but just atypical.

The question remains as to whether what we observe are actually preferences or traits. But the point remains that some segmentation may occur due to the employee's preferences. There will be no easy proof as to what are traits resulting from labour market segmentation and what are preferences that do not. It is, however, the duty, of the observer to pointedly express what in the study is being assumed to be a trait and what is being assumed to be a preference and, if possible, to identify these empirically. The confrontation between labour market segmentation theory and neoclassical preference segmentation may result from unclear communication because of the reluctance of scientists to either accept the possibilities of endogeneity in labour productivity (neo-classical theorists) or to accept the possibilities of labour preferences beyond hourly compensation and/or a "benefits package" (LMS theorists).

The strategy thus far has been to suggest the evolving importance of varying working-time preferences (Chapter 2 above), and then to clarify how LMS theory may be used as a tool to discuss supply-side (employee preference) influences in LMS. The next chapter combines these by formalizing the preferences of individuals for different working-time arrangements.

Chapter 4

Job Forms in a Time-Sensitive Model -- Modelling The Time-Sensitive Protean Worker

"It is because I want to make economics more human that I want to make it more time conscious..." - Sir JR Hicks (1976), *Some Questions of Time in Economics*

INTRODUCTION

This chapter will detail the employee preference or supply-side forces which are hypothesised to characterize groups in the intra-occupational labour market. This is based on the general idea in labour market segmentation theory that was put forth in the previous chapter. This emphasis does not mean that occupational forces or mobility chain forces are insignificant to this study. However, because the ideas of occupational and mobility chain influences are well known, they will be dealt with in a more succinct fashion during the analysis of the results. It is because the employee preference forces critical to this study have not previously been formalized that they are done so here.

In this study it is hypothesised that intra-occupational segmentation takes place at the firm level by mobility chain forces producing "tiers" which segment the internal labour force. Furthermore, that the compensation package between these tiers will consist of non-pecuniary elements that will be different according to the preferences of the different groups of individuals in the different tiers. It is also hypothesised that differences in compensation packages between what are called large firm job forms (core) and other job forms (periphery or outer ring) are also due to employee preferences. Again, the respective compensation packages will reflect this. The unique form of non-pecuniary compensation that divides working conditions within the internal market and working conditions between the internal market and the external labour market will be the concern of this chapter.

It is this supply-side desire for a more flexible working-time arrangement that divides the labour supplies between internal and external job forms by offering a different composition of the compensation package. This supply-side desire is also reflected in the different compositions of compensation packages in the internal job market. It is the working-time aspects of employment that divide part of the groups' working conditions.

The rationality for choosing a so-called secondary segment job-form over a primary segment job-form on the basis of what is often thought of as a minor fringe benefit (control over working-time) needs some defence. It is shown below that control over working-time can be a powerful form of compensation *for those workers who value control over working-time*. Defence of this statement requires a careful time-sensitive analysis. This type of discussion for this type of job form is altogether appropriate, if

not essential, in that the time elements of temporary work are truly what give it its distinctive properties (other properties, it is shown, might be assigned to occupational, industrial or other institutional reasons).

A brief sketch of what is to come may prove useful. First, the foundations of the analysis of time and labour markets is developed. This is followed by a description of a time-sensitive labour market model. This model is then applied to a time-sensitive supply of labour services. The time-sensitive analysis will be applied to the internal labour market, showing the appeal of including working-time freedom in the compensation package of those employees who value working-time freedom. The time-sensitive analysis will then be applied to the external labour market, showing how preferences for working-time freedom may create atypical market mediated institutions (the temporary agency). Our ultimate aim is to highlight a significant hitherto unformalized supply-side reason for the differences of working conditions between temporary job forms and permanent job forms and to show the importance working-time freedoms may play in an organization to both keep protean (expert) employees and/or increase their effort.

FOUNDATIONS FOR THE ANALYSIS OF TIME

As Winston (1982) in his very insightful analysis *The Timing of Economic Activities* asserts, because of the way economics treats the timing of events "temporal information is lost automatically, filtered out by the way economics treats time." In studying the

segmentation of employees between temporary agency employment and full time employment it is paramount that this temporal information is not lost. Employment in time virtually distinguishes temporary work. An accurate and thorough understanding of this market and its segmentation would be difficult if the analysis proceeded without a time-sensitive discussion. By introducing a time-sensitive model into the consideration of employment arrangements one will be able to more fully understand the time elements of labour markets. It focuses not only on the division of temporary employment and full time permanent institutionalized employment but also on the effects in the internal labour market.

Before proceeding with the time-sensitive model it will be quite useful to briefly describe the time elements and assumptions in earlier economic analyses critical to their formulation.[1] This step will give a foundation to the time-sensitive analysis which follows, as well as clarify the penetrating insights that a time-sensitive model uniquely affords the investigation of core-periphery segmentation and differing job form characteristics.

Time In Marshalian Analysis

Time has consistently caused problems for economists when they have attempted to accurately describe markets and market dynamics. They struggle hard to incorporate time into their analysis, recognizing that a change in time could have profound consequences on many of their conclusions. Indeed, as Alfred Marshall (1946) states in

[1] Currie and Steedman's book, *Wrestling with Time (1990)*, gives an extensive analysis of time and the struggle economists have undergone to understand its influences on markets and general equilibriums.

the preface to the first edition of his classic book *Principles of Economics*, "the element of time ... is the centre of the chief difficulty of almost every economic problem" (p vii). It is with *Principles of Economics* that our discussion of time elements in labour markets will begin.

Marshall's analysis in *Principles* is largely one in which he invokes the *coeteris paribus* device; "we fix our minds on some central point; we suppose it for the [unit of] time to be reduced to a stationary state; and then we study in relation to it the forces that affect the things by which it is surrounded, and any tendency there may be to equilibrium of these forces" (p 369). This technique, widely used in social sciences, renders time static.

Marshall's famous descriptions in Book V, Chapter 3, "Equilibrium of Normal Demand and Supply", invokes with great care this device of *coeteris paribus*. In this chapter he sets up a framework for analysis in which a specific "unit of time" (p 342) is chosen prior to analysis. The unit of time may be of any duration, a day, a week, a month, depending upon the market studied. During this unit of time, outside forces may not effect supply and demand. "The general circumstances of the market remain unchanged" (p 342).

In applying Marshall's analytic technique to labour markets, the wage and quantity of labour services is determined by the intersection of the supply and demand schedules in the traditional manner. The resulting wage and quantity supplied of labour services then is said to be the stable equilibrium conditions for that market for the *chosen unit time*, be it a day, a week, a month, a year or longer. One of the consequences then of this

analysis is that once the unit of time has been selected the effects of circumstances within this unit of time are no longer visible.[2] In other words, if the wage was determined for a week-long period, the changes of labour supply which occur within that week are held in check; for example, the consequences of religious ceremonies on Saturday or Sunday precluding work on those days. This has no effect on the equilibrium conditions. The fact that work is not performed on those particular days is hidden behind the veil of the unit time. The final equilibrium is merely in labour services per week.[3]

Marshall's analysis is, of course, static. It strips time of its continual influence over goods and prices. In it "the general circumstance of the market remain unchanged throughout this period [unit time]; ... there is, for instance, no change in fashion, in taste, no new substitute which might affect the demand, no new invention to disturb the supply" (Marshall p 342).

This "all things being equal" device so well exploited by Marshall is continually used in economics and other social sciences. For, indeed, it is quite useful in that it narrows the issue under examination and therefore allows the topic to be handled more exactly. But

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[2] Marshall makes explicit this neglecting of forces within his unit time in his discourse on the fishing industry. Where when looking at the supply of fish, the effects of daily weather changes may be held constant while he discusses influences of a more long term nature, like the scarcity of meat during the year or two following a cattle plague (p 369).

[3] Although this suggests that much of Marshall's work is time-insensitive, it cannot be argued that Marshall was ignorant or less than aware of the influences of time and the effects of holding things static. As Currie and Steedman (1990) observe "he seized [time's] importance in vivid fashion and kept it at the heart of his analysis." As early as page 15, Marshall points out that "the pleasures which two persons derive from smoking cannot be directly compared; nor can even those which the same person derives from it at different times." And in appendix H he even approaches a dynamic analysis when he observes that perhaps we should not look at just a quantity - price curve but "a surface of which the three dimensions represent, amount, price and time respectively" (pp. 809 -10).

this type of treatment could have a grave cost in that its description of real life becomes less and less accurate. Invocation of it, in terms of holding the unit time constant, in an analysis of labour markets being segmented between temporary work and permanent work could make the analysis so inaccurate as to leave it essentially ineffective. It deprives the analysis of the very element that may distinguish labour market segments - time-sensitivity.

Describing choice between two discrete modes of working time, temporary and permanent, using partial equilibrium analysis is problematic because that form of analysis will not easily allow discussions of the exact time patterns of preferences and the exact time patterns of work provided by those job forms. It is helpful to have this information accessible when discussing temporary employment.

Time in "Allocation of Labour Theory"

More recently, in an attempt to capture some of the consequences of time, economists, most famously Becker (1965), have approached time as a commodity (see also Chez and Becker, 1975). They treat it as something that could be divided up like a cherry pie or a train load of gravel. The analysis they undertake begins with this basic underlying assumption and then considers the agents decisions to allocate their time. This allocation is usually between work and leisure and in Becker's case between work and home production. Although they have approached time as an element to be confronted, the analysis still lacks a time specificity necessary to analyze the time-sensitivity of the protean work style (in our case the temporary agency employee).

The allocation analysis is usually described on an individual basis. One agent acts to maximize a hedonistic utility function. The agent is considered to make choices between work and leisure maximising a utility function:

U (Leisure or consumption (Income), Labour)

subject to the time constraint:

T total = T work + T leisure

and also faces the budget constraint:

I income = H hours worked * W wage rate

The agent then works the appropriate number of hours so that his preferences are maximised, taking into consideration that working-time produces income which allows consumption during non-working time, thus increasing utility. This theory has told us much about the responses of wage rises, national benefits programme and substitution and income effects. This thesis is not the place to dwell on these useful analyses. But here we are most concerned with the allocation theorists' treatment of time and what can be learned from it.

The labour/leisure and labour/home production models both assume that once the decision as to how much time one allocates to work has been made, then one merely puts this number of allocated hours into the day. Is this a time-sensitive model? Winston (1982) has suggested that these models do not allocate time at all, but merely allocate labour services measured in time units - labour services per hour. In other words, this gives us a useful description of labour services but hides the effects of time to the allocation of labour services. Furthermore, becker's model allows time to only be seen as labour.

Yet for a discussion of Protean employee preferences, labour and other non-labour activities must be seperable in time.

The importance of this is critical to our analysis. It is proposed here that the allocation of labour services *and consumption in time* is the decisive factor in segmenting labour supplies. It is the difference in the *patterns* of time that make some labour market segments unique. For example, it might be the difference in the *preference for control over working-time* that distinguishes the temporary agency worker. Thus, an analysis that eliminates the effects of working *in time* will not go very far in describing the possible supply-side processes which could generate the segmented labour market or differences in compensation packages between tiers.

The two systems of analyses used above to describe labour markets, are not clear or precise enough to discuss the temporary agency market but they do yield some useful ideas about time. Marshall's analysis clarifies precisely the unit time. The allocation model describes well the agent's decision mechanism. To some extent the time-sensitive model below will utilize these two concepts.

A TIME-SENSITIVE LABOUR MARKET MODEL

Winston (1982), takes a step away from these time-insensitive models[4]. He has developed a highly time-sensitive model that he has used to describe rhythmical

[4] Deserpa (1971) also develops a theory of time, distinguishing between activities that are a necessity and activities which can be chosen. He utilizes a non-linear programming model.

fluctuations within time and their effects on markets. Much of the time-sensitive theory briefly described below is based on his model. Its application to the theory of employee preference driven labour market segmentation and the hypotheses about control over working-time are new.

The basic premise of the model is that activities performed by an individual are dependent upon the time they are performed (Here it is important to note that time is used in the sense of calender time). A simple example of Winstonian time-sensitive consumption is that of sleep. Sleep is best performed when it is dark, ie when it is night time. So that the production (consumption) of sleep is dependent on the time of day that the consumer sleeps. Sleep during the day may not be as useful or pleasant as sleep during the night. This is introduced by making the utility function time-sensitive or a flow of utility. There is a constant flow over time of potential utility from sleeping. Sleep during the day will give less utility and sleep during the night will give higher utility. This flow of utility within time can be shown for every activity, so that the consumer will choose between activities over time. Thus, one lays out on the beach during the day (when doing so has a high utility flow) and sleeps during the night (when doing so has a high utility)[5]. More formally:

Accumulated household utility is:

[5] Bosworth and Dawkins (1980), looks at how the variations in utility over the day may effect wage premiums at unsocial hours. Hicks was also sensitive to the fact that commodities may be differentiated not only according to their attributes but also to their date (Currie and Steadman, 1990, page 109). In this thesis, though, the physical attributes are endogenous to the date.

$$U = \int_{t_0}^{t_1} u_1(z_1(x_1(t);t))\ \delta t + \int_{t_1}^{t_h} u_2(z_2(x_2(t);t))\ \delta t \qquad [1]$$

Where flows of utility from activity 1, u_1, is a function of the intensity of the activity z_1 (which is function of timing) and the amount of goods used x_1. The same holds for activity 2.

This utility is maximized subject to the constraint[6],

$$\int_{t_0}^{t_1} \overline{p_1} x_1(t)\ \delta t + \int_{t_1}^{t_h} \overline{p_2} x_2(t)\ \delta t = \int_{t_h}^{t_T} \overline{w}\ \delta t + Y_p \qquad [2]$$

Where the price, p, is exogenous and goods, x_i, are time-sensitive. They are constrained by the resources, w, flow of wages and Y_p wealth.

From maximization and the resulting first order equations, Winston produces the optimal switching moment, t^*, between two activities (in our example sleep and awake). In each activity time will have the same value[7],

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[6] This time constraint differs from Beckers in that it allows for the timing of activities to be generated from the model, not just the amounts of time devoted to different activities.

[7] This differs from Becker in that t* is a moment in time, not a level of time allocated.

$$\mu_1(t_1^*) = \mu_2(t_1^*) \qquad [3]$$

Of course, other choices made by consumers are more pertinent to our discussion. One can imagine a continuum of choices being made by agents over a large set of possibilities. One of these possible choices is the decision to go to work or not. In Winston's (1982) model it is assumed that the utility derived from work is zero. The only positive utility derived from work is from the income produced which can then be transformed into goods used while not at work (in leisure or home production)[8]. The agent's decision to go to work, then, is time dependent because he compares going to work with other non-work activities over time, see eg Groneau (1986). Since the perceived non-work utility derived from non-work activities is assumed to be time dependent, then the choice of when to go to work (t*) is time dependent. Ultimately, work will occur only at those moments, over the unit time of analysis, that other activities have low utility flows.

Figure 4.1 goes a long way in describing the Winston model. It is an abbreviation that we think clarifies the concepts in his model well. There are two flows of utility: utility from leisure, U_l (home(time,Income)), and utility from work, U_w (work(wage)). These utilities flow over the time unit T where the changing environment over T, day to night for example, "calls for an optimal temporal allocation of goods" (Winston p 167). Since

[8] This is akin to the Becker (1965) home production model.

the wage over time is constant, then the utility derived from work is the straight line U_w. Utility from leisure, being time specific, undulates and is represented by the curve U_l. If we assume T = one day, and leisure activities for this agent are better performed in the evening, as is shown, then this agent will work from hour t_1 to hour t_2 and perform non-work activities in the evening (t_1 and t_2 are the optimal switching times). Work is performed only when it derives (indirectly) a utility flow that is greater than that of the other non-work activities.

Figure 4.1
A Winstonian Time-Sensitive Model Diagram

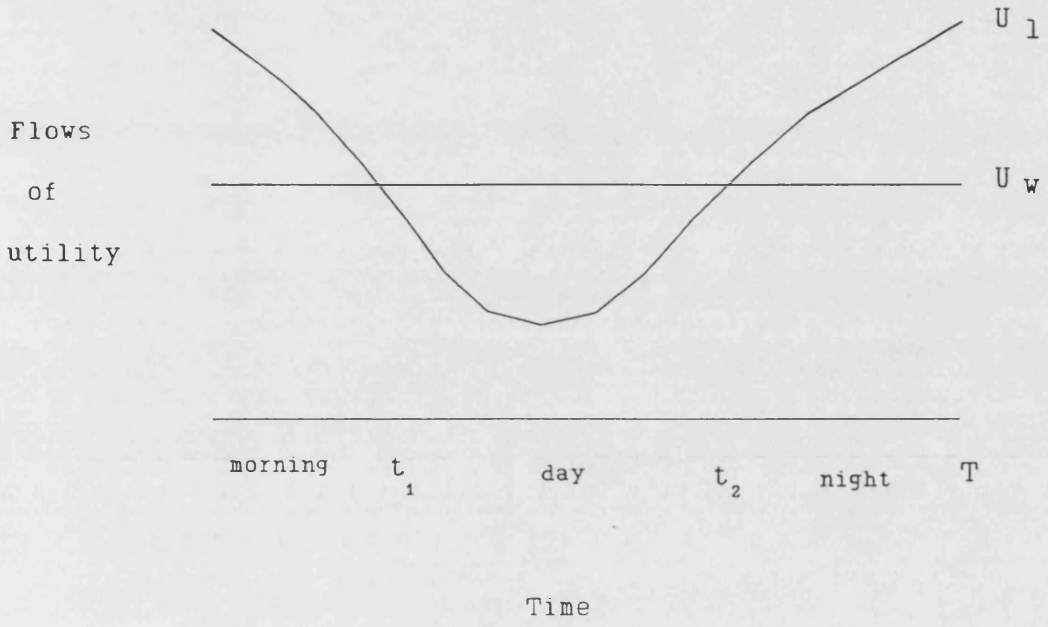

Figure 4.1 shows that during some hours of the 24 hour day there are times when the indirect utility derived from work (U_w) is greater than the utility derived from non-work activities (U_l). There are also times when the utility derived from non-work activities is greater than the indirect utility from work. This diagram reflects the preferences of a hypothesised individual who will work during the day and perform non-work activities during the morning or night.

The subtle difference of this model, more formally described in Appendix B, is its superior time-sensitivity. It treats time more appropriately for our discussion in that it does not treat it as a commodity but allows analysis over time. It also does not hold time completely static with equilibriums for one specific unit time only, but allows analysis within a unit of time. It enables us to study the consequences of the time-sensitivity of an individual on the allocation of labour services. This is essential in analyzing temporary employee preference driven segmentation. The model has the ability to expose the time-sensitivity of preferences *in time*, and therefore the time-sensitivity of different job forms in labour markets[9].

THE CONSEQUENCES OF A TIME-SENSITIVE LABOUR SUPPLY – EMPLOYEE PREFERENCE DRIVEN JOB FORM CHOICE

Within this framework one can compare the different employment solutions of two different groups of potential employees, those who do not value control over their working-time (time-insensitive) and those who do value control over their working-time (time-sensitive). When these two groups are faced with two different job forms their preferences will tend to form a segmented labour market.

The first group is distinguished by time-insensitive preferences. The second group is distinguished by time-sensitive preferences (protean employees). (The differences in preferences may occur for various reasons but it is not assumed or addressed here what

[9] Winston emphasises the cyclical nature of time in his book. We emphasise the heterogeneous nature of time. Hassard (1989a), believes that studies utilizing either approach are scarce (p 13).

those reasons might be.) These two different types of workers when maximizing their utility functions compare the utility derived from non-work activities with the indirect utility derived from income generated by work. This is done in the manner described in the section above. It is first assumed that this occurs in a market place where the job form has a rigid set of time constraints that must be adhered to. Later this will be relaxed.

In general, because the first group of workers have preferences which are not time-sensitive, *when* they work has little bearing on their final utility. If the job form implies rigid work schedules, the effect on their final utility will be minimal. However, for a group of workers whose preferences are time-sensitive, the constraint of rigid work schedules will effect their final utility drastically[10]. This difference between the two groups is shown in Figure 4.2 below.

[10] These are two hypothesised groups and one can imagine a semi-sensitive employee who might work within the time rules of an institution but demand overtime rates for social hours.

Figure 4.2
Time-Sensitive Employee in a Time Constraining Job Form

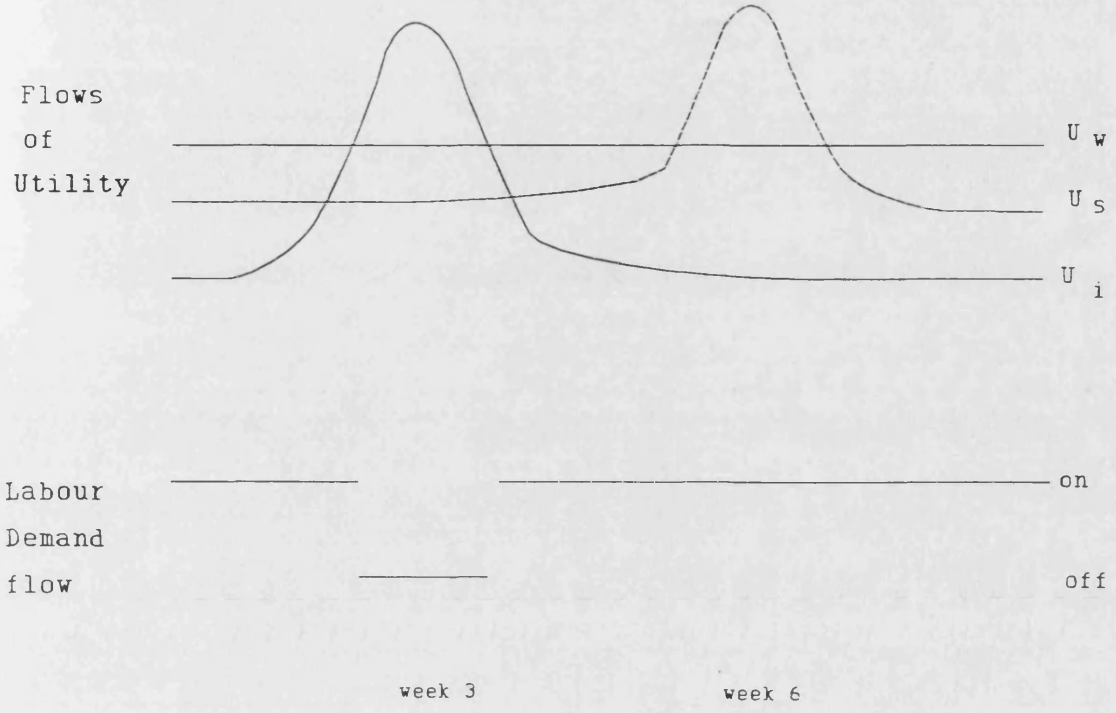

Figure 4.2 shows that under a time constraining job form the demand for labour is absolute and set by the firm. In this case the firm allows time off or does not need workers at week three. During week six, though, the time-sensitive employee (U_s) has a great demand for time off since the utility of non-work activities is shown to be much greater than the indirect utility from work. However, they must work. The time-insensitive worker (U_i) exhibits an increase in utility at week three since it does not matter when the non-work activity is done for this type of worker.

The unit time of analysis T is assumed here to be two months, shown as eight weeks along the X axis. A representative of the first group of workers with time-insensitive preferences is shown by the flow of non-work utility as described by curve U_i. A representative of the second group of workers with time-sensitive preferences is shown by the flow of non-work utility as described by curve U_t. The indirect utility from work is given by U_w and is assumed to be identical for both individuals. The demand for labour is given by the dichotomous function D_l where the demand for labour is either "on" or "off". This is used to simplify the analysis and the diagram.

The time-sensitive worker exhibits an increase in utility from non-work activities in week six, otherwise at any other time the worker prefers to work, since the indirect utility derived from the wages earned is above the utility from non-work activities during all weeks except week six. There is no possibility of substitution. The employee's preferences for non-work activities (therefore work as well) are time-sensitive.

Formally this preference for control over working-time is felt through the $z_i(x_i(t);t))$ term (speed of output) of Equation 1. This term denotes the efficiency of production, and Winston suggests that this is time-sensitive since the production environment (Winston uses E(t) to denote this) changes throughout the day (therefore the "speed of output" will change). (Winston relies heavily on cyclical variations like day to night altering the production environment to change the relative efficiency of production). So that we can rewrite z_i as:

$$z_i(t) = f_i(x_i(t), l_i)\ E_i(t) = z_i(x_i(t), l_i; t), \quad [4]$$

Where z_i is a function partially explained by the production environment E(t).

We, however, in our application are redefining the $z_i(x_i(t);t))$ term by redefining what effects the production environment, E(t). Again, Winston's production environment changes constantly via exogenous environmental rhythms, like the daily train schedule, or the yearly weather conditions etc (Winston p 159). We accept this influence over the efficiency of production but find it too conservative. Therefore, we include in our production environment E(t), personal preference aspects that individually determine the efficiency of production or the utility of work - elements like one's father visiting, or an offer to play tennis, or a preference to sleep late. To us, individuals who find the timing of their activities central to their utility (labelled time-sensitive) will have unique production environments, as represented in Figure 4.2 by the U_s curve. And a restrictive scheduling will decrease their production efficiency (speed of production in non-work activities) and therefore decrease total levels of utility.

However, the production environment, E(t), of the time-insensitive worker is not a function of their own preferences, since the timing of activities just does not matter to them. Their utility curve, U_i, shows a drastic increase in the utility derived from non-work activities during week three. This occurs just at the moment when the labour demand schedule D_l is such that they are not needed (or not allowed to work). This is not by chance. It is because the worker's utility from non-work activities is time-insensitive that the utility from non-work activities will rise at exactly this point within the unit time. It does not matter when the non-work activity is performed. It is merely

performed when there is no work, as determined by the job form. So this increase is not showing the pattern of preferences of the employee, as much as it is showing the timing of non-work activities. The utility derived from non-work activities is independent of when it occurs. The time-insensitive preferences of this worker allow utility maximization while employed under this time constraining job form.

Clearly, because the time-sensitive worker must work during the week in which the flow of utility from non-work activity is greater than the flow of indirect utility from work, week six, there is a loss of utility (The difference in utility derived from non-work activity and the indirect utility derived from work). Furthermore, because the time-sensitive worker will not be able to work during the time when the utility flow from non-work activity is low, there is another loss of utility. It is the combination of the employee's time-sensitive preferences and the restrictions of this job form (rigid work schedules) that cause the decrease in overall utility[11].

In another job form though, wherein the worker has control over working-time, the circumstance will change considerably for the time-sensitive worker. With control over working-time, the time-sensitive worker will be able to maximize the flow of utility from both work and non-work activity. This is shown in Figure 4.3.

[11] One might say that non-protean employees may too be "time-sensitive" since if they are accustomed to rigid schedules, they become attached to certain patterns for time off. We however define time-sensitive employees as those requiring working-time scheduling freedom.

Figure 4.3
A Time-Sensitive Employee in an Accommodating Job Form

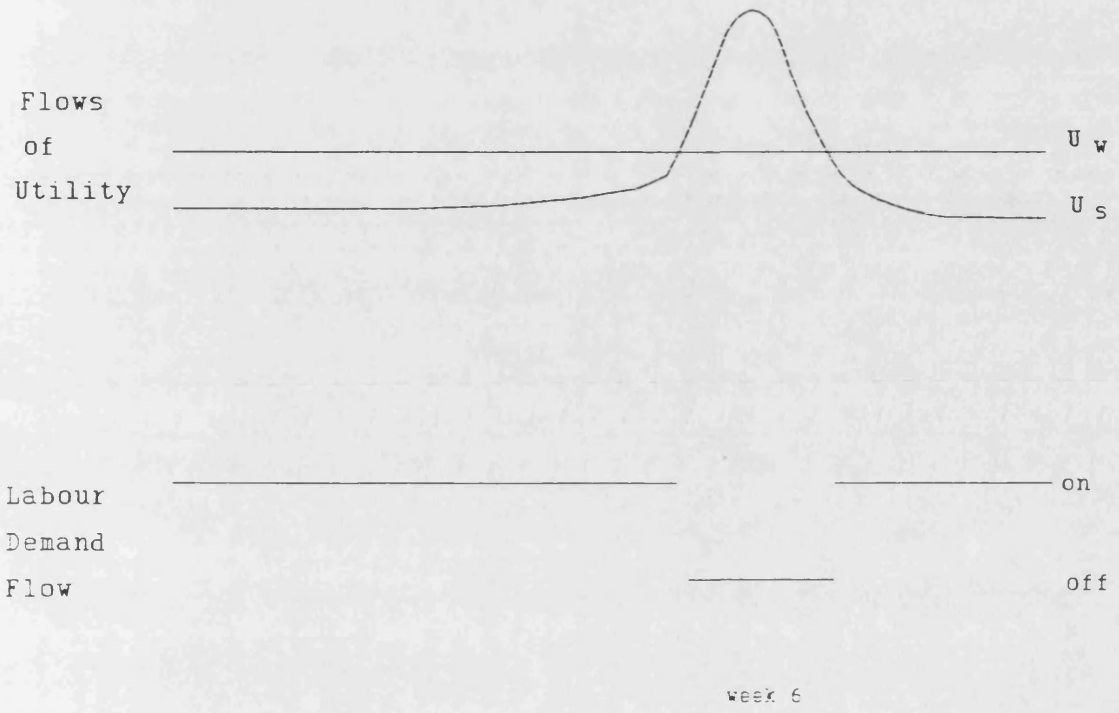

Figure 4.3 shows that under an accommodating job form the employee turns the demand for labour on and off. It is the employee who has control over working-time. If the employee is time-sensitive, as is shown here (U_s), then there will be a gain in utility from an accommodating job form.

In Figure 4.3 the job form allows the worker to work when they prefer. Here it is clear that the time-sensitive worker will choose not to work during week six, since it is during week six that the non-work utility flow is greater than the indirect utility flow from work[12]. The decision to work is unconstrained. The employee turns the labour demand schedule on or off. This of course maximizes utility[13]. At the precise moment in time (t^*) that the time-sensitive worker requires "time-off" this job form allows it. The utility that is lost in the time constraining job form shown in Figure 4.2 is recaptured by virtue of the control over working-time that is allowed in this job form. **Faced with the two different job forms, the time-sensitive worker, in maximizing utility, would tend toward the job form that allows control over working-time, since control produces a level of utility greater than the job form that is time constraining.** This is employee preference driven job from selection[14].

Adam Smith's (1976) "equalizing differences hypothesis", or theory of net advantages, states that the rewards of different jobs should tend towards equality. Rewards in the sense of all of the advantages of a job. In our discussion it appears that for some individuals, those that prefer control over working-time, the calculations of net

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[12] This is akin to Groneau's (1986) discussion of the "shadow price of time".

[13] Owen (1979) suggests that flexi-time will not increase leisure time. We suggest that it might change the quality of leisure time. Owen's analysis suffers because time is treated as a commodity; *the number* of leisure hours takes precedence. We believe *the timing* of leisure hours is most relevant.

[14] Allen's (1981) empirical investigation of work attendance suggests that the flexibility of the work schedule directly relates to attendance. See also Schappi (1988). He also states that "there was no empirical support that certain classes of individuals are absence prone regardless of scheduling flexibility provided by their employers or the opportunity costs of taking a day off". This gives some evidence that preferences over working-time are true exogenous preferences not traits (see Chapter 3). Hepple (1990) suggests that full-time permanent employees need to be paid more than others to decrease their incentive to be absent.

advantages of temporary work should include control over working time (at the expense of income), thus their selection of this job-form [15].

For the time-insensitive worker, though, the choice may appear easier. Either job form will maximize utility. However, since there is no gain from choosing the job form that allows control over working-time, other characteristics of the two job forms may be considered (These were implicitly held constant in the preceding analysis but are now relaxed here). These may include, promotional possibilities, job security, working peers and others. If the time constraining job form exhibits any more positive attributes it will be selected (Of course this may be the case as well for the time-sensitive worker, since only if the gain from control over working-time outweighs the benefits that the other job form has to offer will the time-sensitive worker choose the job form which offers control).

These arguments can also apply to the internal job market. In an evolutionary way, job tier compensation might ultimately reflect those preferences of tiers either for control over working-time or not. Rather than segmentation this results in different compensation packages that may appear as demand-side stratification but may have their roots in the time preferences of the employee. Again the increase in utility occurs only if the employee has time-sensitive preferences.

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[15] Although this would be nice to test, problems arise which are noted in our results Chapter 11 in footnote 2.

IN CONCLUSION - TWO HYPOTHESES

The Winstonian model, then, formalizes the influences of maximizing behaviour in a labour market *within time*. The consequences of this are shown to be a possible selection of one job form over another by one type of worker who exhibits time-preferences differently to another, or different compensation packages between different tiers within a firm. The basic hypothesis derived is that the time-sensitive preferences of some employees may drive them into the job form which allows greatest control over working-time. Different preferences will be the driving force behind different compensation packages in the external labour market and in the internal labour market. This creates an example of employee preference (or supply-side) driven intra-occupational job form choice. In this study we propose two hypotheses:

Hypothesis 1:

> In the internal labour market some job forms will include working-time flexibility in their compensation package and others will not - according to the sensitivity to time of the employee.

Hypothesis 2:

> In the external labour market temporary agency employment will exhibit working time flexibility which is partially driven by the supply-side preferences for control over working-time (supply-side driven intra-occupational job choice).

These hypotheses, generated from the time-sensitive model, are based on the supply-side job choice theory shown in Chapter 3 above, as well as the proposed evolutionary changes on work which may boost the time-sensitivity of employees shown in Chapter 2 above. We will look at these two hypotheses in greater detail in the next chapter.

Chapter 5

The Two Hypotheses In Closer Detail

The two hypotheses developed in the previous chapters are now examined further. It is suggested that preferences for control over working-time may effect the internal labour market in varying ways, namely in the composition of the different compensation packages, but also including the effort of employees. It is also suggested that preferences for control over working-time may effect the external labour market mainly through search costs. The search costs will increase because of the preferences for control by the employee (supply-side forces), as well as the timing inconsistencies of the firm's demand. Ultimately, this may lead to the market mediated institution - the temporary agency and its resulting labour market segment, the temporary agency employee.

CONTROL OVER WORKING-TIME AS PART OF THE COMPENSATION PACKAGE IN THE INTERNAL LABOUR MARKET (THE LARGE FIRM)

The preference for control over working-time may play a very important role in the various compensation packages (or set of working conditions) that prevail across various

job forms (tiers) within a firm. If it turns out that groups of individuals within a firm have preferences for control over working-time that differ, their resulting working conditions may be attributable to these different preferences. In other words, if control is relatively unimportant to a group of individuals, then the lack (or benefit) of control will have little consequence over their final utility and therefore be of little consequence in the compensation package. However, if control over working-time is highly valued, then including control over working-time in the compensation package will not only mean that pecuniary compensation will not have to be as great, but also that work effort may be greater. A simple example using the time-sensitive analysis will illustrate.

Again the labour supply is distinguished by two different groups of individuals. The first have time-insensitive preferences and the second have more inconsistent time-sensitive preferences for activities (the protean employee). It is assumed here that the firm has a set standard pattern of demand for labour services over time. What are the consequences of this? In the internal labour market the wage has been contracted in a prior arrangement for an extended period of time. This contracted wage then holds for the analysis over the entire length of the unit time. For those with time-insensitive preferences the consequences are nil, since their expected patterns in non-work activity utility will be consistent with the firm's demand schedule. However, for a group where non-work activities have time varying non-work utility flows, discrepancies may occur.

If at a given moment within the unit time the non-work activity yields utility greater than the indirect utility gained by working, the employee is obliged by the long term contract to work. This is because of the rigid long term contract and the standardized patterns of

work established by the firm. The consequences are that an employee is being paid, for the length of time that his non-work utility is greater than the indirect utility from work, below what is necessary for the employee to work. This may yield inconsistent performance. It may also yield a decrease in effort. Clark, (1992) has shown "that the perceived relative value of the reward will effect the level of effort"[1]. It is proposed here that the perceived relative value of the reward is time-sensitive. In other words, when non-work activities are valued, the relative perceived value of the wage decreases. Thus, shirking or a decrease in work effort may occur.

This example can be shown in a Winstonian diagram (Figure 5.1). Here the unit time T = six months. The wage is static for six months and is assumed to give the utility flow as described by U_w. To person 2 this wage is just sufficient to induce that person to work each week out of the six months. This is shown by the flat utility flow curve of non-work activities U_2. These are the time-insensitive preferences. For person 1 the wage is more than sufficient during some weeks and less than sufficient during other weeks. This is shown by the undulating utility flow curve of non-work activities U_1. Since person 1 had originally contracted for the six month period, there is nothing they can do to alter the work schedule. They are obliged to work the entire six months. Although, overall the person may average out to being paid sufficiently over the six month period, there may be moments of insufficient pay (t_1-t_2 and t_3-t_4).[2]

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[1] See also Staten (1982) for more on incentives to shirk.

[2] Of course the selection of the unit time in this analysis becomes very important. The selection here may be described as the ability to choose which weeks out of the year are worked. If one picked a smaller unit time, say one day, the flexibility of working hours during the day would then be analyzed. The discussion would take place considering questions like: if someone did not like to work on Wednesday mornings, or preferred longer lunch breaks. Still the consequences are the same. There may be a decrease in effort or a decrease in production. These time elements may be "both physically determined and socially

Figure 5.1
Time-Sensitive Worker in a Time Constraining Firm-Internal Job Form

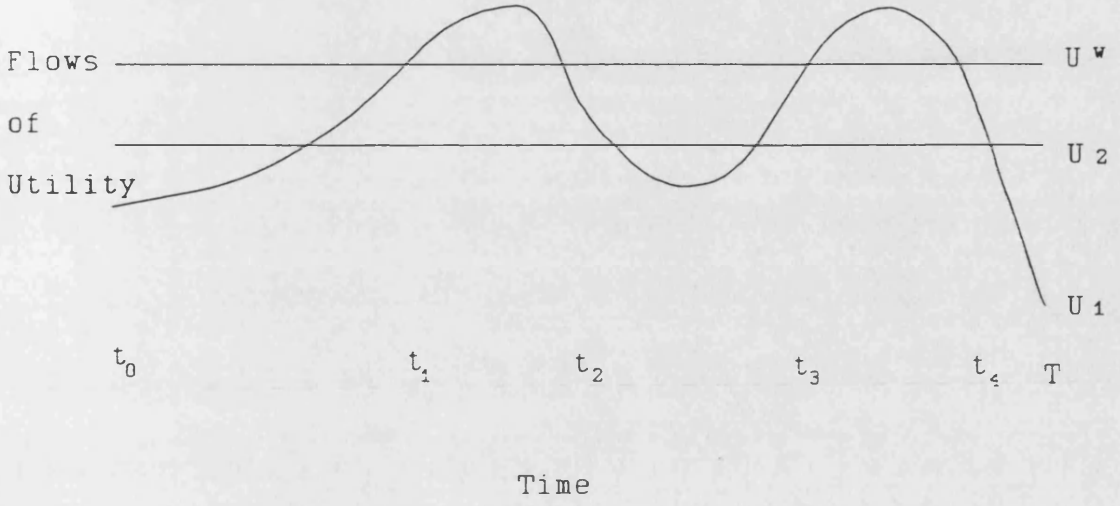

Figure 5.1 shows that a time-sensitive worker's non-work utility fluctuates over time (U_1). There are some moments, from t_1 - t_2 and t_3 - t_4, that the non-work utility is greater than the indirect utility derived from work (U_w). However, in the firm the worker must still go to work because of the time constrained work environment. This results in an overall loss of utility. The time-insensitive worker (U_2) does not suffer the same consequences, since as long as the employment structure wants them to work they are willing. It is only when the employment structure allows time off that the utility from non-work activities will rise for this time-insensitive worker. (This is not shown in the diagram).

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constructed" (Hassard, 1989, p 80).

If the firm included in the compensation package some control over working-time this would act like a real increase in compensation to the employee and the level of work effort may increase. But the internal market, it appears, has allowed little working-time flexibility. However, firms could be implementing compensation packages that give more subtle flexibility to employees -- to employees who value their working-time flexibility. Offering it to these employees not as a fringe benefit, but because it is the least costly method of improving performance[3].

This means that the driving force of creating flexible work patterns may not solely be competition for labour services. The competition argument suggests a battle for labour services being waged by offering different compensation packages -- those which include flexibility and those which do not (the implication is that those who offer flexibility will be more attractive). Hill (1984) suggests that with specialization and production process indivisibility, working hour flexibility is disallowed even if the pressures of competition for labour forces increases. Here we take a different stance and suggest that (a) working-time flexibility is only attractive to those who value it and (b) that working-time flexibility may not be detrimental to the production of knowledge based products, but that flexibility may actually enhance employee performance.

Most importantly, we depart by suggesting that working-time flexibility may occur in various time units, and that including flexibility of hours of the day, or days of the week, or weeks of the year may yield significantly different results. This is why we prefer the phrase working-time control. It allows for a greater range of time units than does the

[3] Orpen (1981) concludes that flexi-time has "no adverse effects on production" (page 115).

general term "flexibility". Again, a model constructed to explore work as an activity that takes place *within time* may be more suitable in exploring the consequences of working-time control at work, rather than a model that commodifies time. And a model that starts from the perspective of the employee as opposed to the firm may raise issues that have been previously neglected.

Some differences in compensation packages may be currently observable within a firm. If there is a group of individuals who prefer working-time control, then they are more likely to exhibit working-time control in their compensation package. The significance of this control to the individual's utility has been shown above. If, as has been proposed earlier, the protean employee emerges as being more and more prevalent it may be to both the firm's advantage and the employee's to work out increasingly diverse sets of compensation packages.

CONTROL OVER WORKING-TIME AS PART OF THE COMPENSATION PACKAGE IN THE EXTERNAL LABOUR MARKET (THE TEMPORARY AGENCY)

How the time structure of work effects the external labour market suggested here is a little more complicated. Whereas in the internal market an equilibrium over working-time control can directly result between employer and employee, in the external labour market the problem of information costs develops. It has often been said that this is why the temporary agency will appear, because of the search costs that both sides of the temporary employment contract must incur in order to locate the complimentary arrangement (see Mangum, Mayell and Nelson (1985) for example). However, it has not been shown how instrumental the demand by the firm for flexibility *and the supply-side*

issues of working-time control may together increase the search costs which facilitate a market mediated labour market -- the temporary agency. Again, this is an important point of this thesis -- to reassert the significant influences that supply-side preferences for working-time control may have in labour market arrangements, segments, organizations and in compensation packages. Here their effects are felt through search costs.

The Role of Search Costs

In general the analysis of external labour markets (the temporary agency) is stylized for clearer presentation. It will proceed in the following manner: assuming an instantaneous increase in the demand for labour services for a predetermined length, we will compare the difference in search costs incurred by the firm when searching in three different groups of labour service supply. The first group will generally be distinguished by an abundant labour supply with consistent, similar, time-insensitive preferences; the second group by a less abundant labour supply with consistent, similar, time-insensitive preferences; and the third group by a labour supply with inconsistent, dissimilar, time-sensitive preferences who desire greater control over their working-time (the consequent increases in utility being shown in Chapter 4).

Assume our profit maximising firm experiences a sudden need for labour (this could be due to an immediate increase in demand for their product, an ill employee, an employee on holiday, or a special project). Assume, for the time being, that the firm must employ a new employee for, we'll say a week. In a labour market where the labour supply is distinguished by a large group of employees who are willing to work for any length of time (assume too that they all have similar, time-insensitive preferences; in other words,

all of the available worker's preferences are identical functions of time), the wage necessary to induce any one of them to work is identical at all times and they all are available. The firm need only make one phone call. That will be its search cost, since it is assured of obtaining the same type of work for the same wage no matter who it contacts no matter when it needs them. The person comes to the job and fills in for the necessary week. This may be the case of a large group of unemployed workers who prefer work of any type at any time (Indeed they may be maximizing their income and disregarding entirely alternative non-work activities).

If, however, there is scarce labour supply with varying time-sensitive preferences associated with varying opportunity costs of non-work activities over time and thus varying availability at the offered wage, the search costs for the firm will rise considerably. One can imagine multiple phone calls to various employees before finding an available worker. It is obvious that the probability of finding an available employee is dependent upon the relative availability of employees. In other words, the scarcity of the labour services. It is concluded that the more scarce the supply of workers, the higher will be the search costs.

Again, assume the firm has an increase in demand for labour services. However, the labour supply available is one person willing to work at all times. In this case one phone call is all that is necessary in order to fill the position. Although the labour supply may be small, it is easily attainable. Therefore, the search costs are low. (Note the wage may not necessarily be low.)

Now, compare this situation with a time-sensitive labour supply (A labour supply that values control over working-time). The time-sensitive labour supply includes two workers. One is available for half of the unit time, and the other for the other half. The firm does not know at any particular time which worker is available or willing to work. The probability of locating the appropriate person is 1/2. In the previous example the probability was one. The supply of labour services in this case has not become any more scarce; there are the same amount of labour services available, but the search costs to the firm have increased.[4]

Search Costs in a Winstonian Diagram

These examples are more concretely developed in a Winstonian diagram as in the four cases in Figure 5.2: *a, b, c,* and *d.* In *d* the firms flow of demand for labour services is shown over the unit time T = 1 month. In *a* the utility flows for the abundant group of consistent time-insensitive workers are shown. In *b* the utility flow for the single person and in *c* the utility flows for the two time-sensitive workers. In *a* all workers derive less utility over time from activities other than work and are willing to work each week in the month. In *b* the single worker is willing to work each week within the month. In *c* two workers are shown with two different sets of time-sensitive preferences over time. Worker 1 is willing to work in weeks 1 and 2, and worker 2 is willing to work in weeks 3 and 4.

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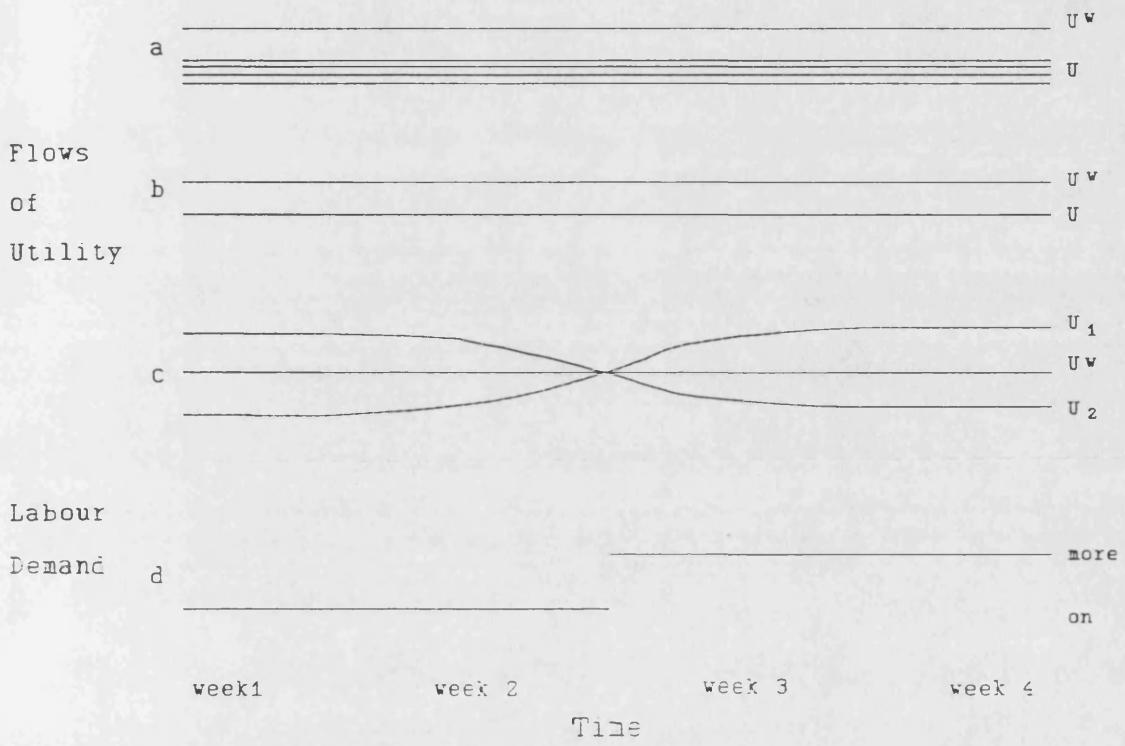
[4]It has been shown more formally by Lippman and McCall (1976) that search costs increase when the probability of receiving a job offer decreases. This can be applied to the descriptions above. The probability of finding an available worker for the firm decreases from case one - an abundant supply of labour; to case two - one worker willing to work at any time; to case three - two workers willing to work only at specific times. See also Mortensen (1986) for a general discussion on search costs.

Figure 5.2
Comparison of Different Time-Sensitive Workers



In Figure 5.2 above, *a* shows many time-insensitive workers. For all of them the indirect utility derived from work Uw is greater than the utility derived from non-work activities U. During weeks three and four the employer should have no problem finding workers. In *b* there is only one worker but since that worker is time-insensitive the employer need only ask that one to work during weeks three and four. In *c* there are two time-sensitive workers and during weeks three and four the search cost to the firm to find an appropriate worker will increase since both of these workers may have to be contacted in order to find one willing to work. *d* shows the increase in demand for labour services during weeks three and four.

It is clear that if our firm, which is shown to have an increase in demand for labour services in weeks 3 and 4, were to face the labour supply of numerous time-insensitive workers *a*, the search costs would be low compared to the two cases *b* or *c*. The more subtle difference in search costs is revealed when comparing *b* and *c*. In week four if the firm faced the labour supply exemplified in *b*, one phone call would be sufficient. (Although the wage may be higher than in case *a*.) But by facing the time-sensitive, not any more scarce, labour supply in *d* the search costs will increase. It first must find the one worker where utility flow for non-work activities are low for week four. The firm will then be able to fill the vacancy with person 2, whose utility flow is shown by U_2.

If the firm contacted person 1, whose utility flow is shown by U1, they would receive a negative response at the wage offered w, since the utility from non-work activities during that week of the month (U_1), is greater than the indirect utility derived from the income from work.[5]

This causes a further complication for the firm. It can either attempt more searching, hoping to find person 1, or it can increase the wage offered until it reached the "reservation wage" of person 2. This is the classic search cost theorist's stopping rule problem. (See eg Lippman and McCall, 1976; Mortensen, 1986; and Akerlof, 1984) One can generalize from this example over a large number of workers with various reasons for different time shaped utility curves. The search costs to the firm, compared

[5] The fluctuations in availability of temporary workers may also be due to their being at another job. It can be argued though that this type of search cost is not necessarily any greater for temporary labour hiring or permanent labour hiring. It just determines the relative amount of labour supply available in the market.

to other more stable labour supplies, could be higher.

When comparing the labour supply *b* and *c* with *a*, *the scarcity of labour* is low, the probability of locating a worker may be lower, and therefore the search costs are more likely to be high. When comparing *c* with *b*, the time-sensitivity of the labour supply, its need for *control over working-time*, is the basis for the differences in the probabilities of locating a worker. In *c* the probability is lower than in *b*, therefore the search costs are higher.

The above analysis suggests then that ***the search costs for the firm will increase with an increase in the scarcity of the labour supply and with an increase in the labour supply's time-sensitivity, their value of control over working-time.*** Because the analysis was time-sensitive an element of search costs previously hidden by traditional analytical approaches, namely the supply-side effects of a time-sensitive labour supply, was uncovered.

The Employee's Search Costs

Assume now that the firm has a reoccurring seasonal need for an increase in labour services. This is shown in Figure 5.3 as a seasonal increase in demand every March. If we assume our agents are rational and learn from the past then we would expect this pattern to become known. A worker who prefers to work in March will know exactly where to go and accordingly the search costs will be low. This is often seen in agricultural labour markets, where the same group of pickers will show up at a farm

Figure 5.3
Repetitive Increase in Demand for Labour Services

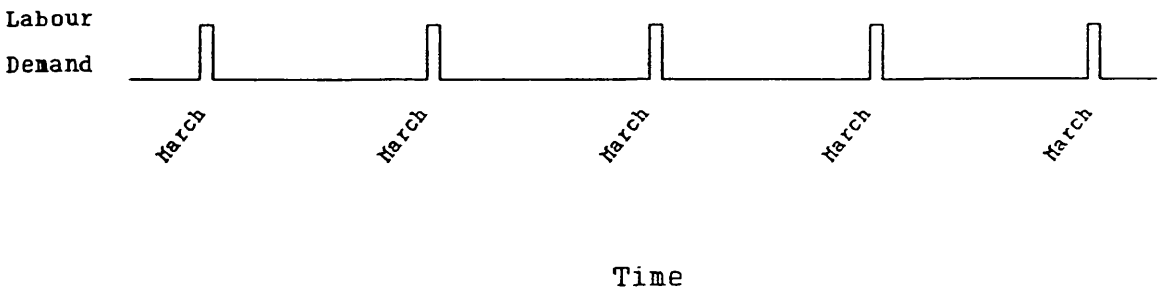


Figure 5.3 shows that March of each year is accompanied by an increase in demand for labour services. This repetitive pattern implies that workers will know where to go to find work. the search costs for them will be low.

when the fruit has become ripe. If we generalize this pattern of short term demand over many firms throughout the year we may have a systematic demand for temporary labour services. The demand could cover the entire year. Again, seasonal fruit pickers will often follow the harvests. For example moving from apple picking one time in the year to hop picking at another time in the year.[6]

If the firm has inconsistent increases in demand, the worker will not know when each firm demands temporary employees. The employee will then have trouble finding the appropriate place to work. On a given month, since there is no previous pattern, there will be no reason for the worker to search for a job at one location over another. It would become necessary for the worker to at all times search out all firms to find the firm which has need for labourers. The search costs for the worker will thereby have increased considerably.

If we add to this scenario two different types of groups of employees, the differences in search costs due to time-sensitivity will again become apparent. For a group of employees with very little time variation in their preferences, the job situation finally acquired can last a long time since the indirect utility derived from the wages earned will be sufficiently high for an extended period. The search costs therefore will be distributed over a longer period. A group of workers with a desire for more control over their working-time (time-sensitive workers) will, by changing jobs with more frequency, incur

[6] Informal discussions with apple farmers in Kent and Sussex have hinted that this is the case. They report that frequently the same apple pickers will show up at approximately the exact time that the apples are ripe. After picking apples they will then move on to pick hops from neighbouring farms, where at that exact time hops are ready to be picked.

a relatively larger search cost. It is partly because their time-sensitive preferences will cause the wages earned to be insufficiently high for a sustained period that their job duration will be less. Thus the search costs for the time-sensitive worker will be distributed over a much shorter period.

Of course the duration of employment may be more directly linked to simply the duration of work available. But the consequences to the worker are the same. With a decrease in job duration, the search costs will be spread over a shorter period. The search costs per job will rise.

The above analysis suggests then that *the search costs for the potential worker will increase with an increase in a time inconsistent demand for labour services and with an increase in the labour supply's preference or need for control over their working-time.* Again, because the analysis was based on a time-sensitive labour market, a significant time element of search costs in temporary work previously hidden by traditional analytical approaches was uncovered. It is implicit in temporary work that the time erratic behaviour of the market implies significant search cost problems.

The Temporary Agency Hypothesis as Two Propositions

The search costs described above play a critical role in the development of a market mediated temporary labour market. For it is the ability of the temporary agency to decrease the timing inconsistencies of supply and demand of temporary work that distinguishes it. It is its ability to provide a service that eliminates most, if not all, of the search costs described above that will make its service valuable.

The agency is able to eliminate these search costs by providing all the information about all the employees and all the firms in the time-sensitive labour market. It attracts the temporary employee by providing information about jobs from *all* firms (thereby the agency obtains information on the individual's particular availability and reservation wage). It attracts the firm by providing information about *all* potential workers (thereby the agency obtains information about available jobs and offered wages). Because single firms and individual workers have only limited information, they cannot alone provide the necessary information that the temporary agency is able to do.

The only information a single firm can provide about jobs to potential workers is its own. Since its demand for services is time erratic, this is insufficient. The worker must search at many different firms before they find an appropriate match. This increases the potential workers search costs. The only information an individual worker can provide about potential employees for the firm is their own. Since their supply of services is time erratic this is insufficient. The firm must search for many different workers before it finds a match. This increases the search cost for the firm. It is not possible for the single firm or the individual temporary employee to provide the information a temporary agency can provide. It is the timing inconsistency of labour supply and labour demand that makes this mediator necessary. It is the time-sensitivity of the temporary employee that is critical in forming this labour market segment. It is their preference for control over working-time that drives the labour market segment.

Because the temporary labour market is distinguished by time inconsistencies (or preferences for control over working-time) and scarce labour, the search costs for both

the firm and the individual will be higher than in other markets. This high search cost will induce alternative organizations to appear that can provide information at a lower cost. So that, whereas before, the search costs may have been prohibitively high for either the firm or the individual to trade, because of the temporary agency the trade will occur[7].

This theory of temporary agencies results in the following two necessary conditions stated as propositions, (which when combined are identical to Hypothesis 2 about external labour markets given above).

Proposition 1:

> Temporary agency employees when compared to permanent employees of a large firm will perceive their job form as **offering** greater control over their working-time. (Suggesting that the temporary agency market mediated market provides for the time-sensitive preferences)

Proposition 2:

> Temporary agency employees when compared to permanent employees of a large firm will show a greater **preference** for control over their working-time. (Suggestion of the time-sensitive preferences)

CONCLUSION

We have now developed a time structure from which we concluded that control over working-time will make a significant impact on the utility of only those employees that value that control. This means that, in the internal labour market, control may have its

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[7] In Appendix C we give a brief example of how temporary agency firms may capitalize on the differences between the search costs of the firm and of the temporary employee. Their profits may ultimately derive less from their own search costs than from the difference between these two search costs.

greatest effect on those employees within the firm who are most time-sensitive, and that control over working-time may actually improve performance. In other words, that we would expect to see a positive relation between those people who value control over working-time and the amount of control over working-time in their compensation package. And that this relation might be construed as labour market stratification. Stratification of compensation packages between those job forms that have control and those job forms that do not. However, a stratification that may be partially supply-side driven.

We also concluded that, because of the time-sensitivities of some individuals, an external labour market arrangement or organization which will provide for the time-sensitivity of employees, will develop. It will develop because of the search costs associated with various time inconsistencies in demand *and in supply*. Ultimately a group of workers will emerge that work via a temporary agency. This group, often relegated to the periphery or secondary labour market segment is in a job form that has attributes often considered to be secondary labour market segment attributes (like job insecurity and insignificant benefits package), but the job form has other attributes (more highly valued by this group) like control over working-time. This control is our catalyst to the derivation of a supply-side driven labour market segment. The next few chapters, comprising Part 3, will test the hypotheses and propositions developed in Parts 1 and 2.

PART 3 - Evidence

Chapter 6

Methodology -- Testing Our Hypotheses Using Several Forms of Evidence

THREE DIFFERENT DATA SETS

Evidence supporting our hypotheses is given by three different types of data. Initially, a secondary analysis of data compiled from previous investigators results is used to test the validity of the Atkinsonian demand-sided influences on job forms. These studies investigate whether organizations are developing a new structure of human resource utilization, a structure which produces an increased amount of flexibility. This tests the pertinence of using a supply-side approach rather then a demand-sided approach. We then analyze our own study of the London Temporary Accountancy market through a set of in-depth interviews with leading managers from temporary agencies. These include a structured interview of the opinions of the managers designed in the first instance to test some of our conjectures on job forms as well as an overall assessment of the accountancy market in general at the time of our study. Finally, we test our hypotheses through our extensive questionnaire data from a large London accountancy firm and a London temporary accountancy agency. This concentrates on the employee's opinions of their working conditions which are critical to our hypotheses.

Rather than relying on one type of data, our three tiered strategy provides the basis for cross-referencing and consistency checking. Further, it provides insights into professional organizations that may not be appropriately analyzed with techniques based on manufacuring industries. Our approach facilitates an examination of many of the supply-side issues which may surround the new protean employee that a single type of measurement may intrinsically exclude[1].

METHODOLOGIES

Secondary Analysis of Data

In making a secondary assessment of evidence it is incumbent of the researcher to be as inclusive as possible in order to preserve the validity of the conclusions. Because the study of the temporary job form is relatively recent, we were able to include almost all of the US and UK studies which directly investigate the phenomena of temporary work as reported in the UK and US academic literature. This should increase the reliability of our conclusions based on previous data.

Our analysis is based upon 27 articles from the years 1963 to 1992. These largely include data sets which are predominantly geared toward responses by managers about their firm's use of temporary employment. The scope of research ranges from government data sets like the UK Labour Force Survey and the US Bureau of Labor

[1] Essentially we investigate the validity of our hypothesis on three different levels. Levels which correspond to those levels given in Figure 3.2 in Chapter 3. The first set of evidence looks at temporary employment in general. The second looks at a specific occupation and the third at the employees of two firms.

Statistics to case studies of specific temporary employees. Their approach is marked by the constant attempt to lump together all temporary employees. We feel this may be an initial misspecification of the temporary agency job form.

In general, analysis of secondary data sources can be fruitful in three ways. Firstly, it allows for an historical perspective on the development of organizations. Secondly, it can give sound evidence of the general trends about the hypotheses we are investigating and can be used to test previous theories. Finally, it can, through comparison, highlight the differences in our own approach. Indeed, these studies formed the basis for our original interests, for, after inspecting their results, we felt these studies could be made increasingly clear if supplemented by a study that embraces responses about working conditions from both temporary employees and permanent employees within an occupation.

In-Depth Interviews

In-depth interviews, by virtue of their ability to allow for more open responses, can ferret out concepts and opinions about organizations that may be hidden by a study restricted to quantitative data. Aware that open interviews can prompt responses influenced by the investigators attitude and personal attributes, thus violating construct validity, the interviews were, in the first instance, performed by telephone using a pre-written questionnaire (see Appendix D). It was only after these questions were answered that a more open discussion was initiated which sometimes concluded by arranging a more open face to face interview.

Managers from 20 London temporary accountancy agencies were contacted; 17 of the 20 were willing to be interviewed. This translates into an 85 per cent response rate. The twenty firms were selected randomly from a list of temporary accountancy agencies compiled from the 1991 Central London *Yellow Pages Directory*. The exclusion of other less specialized temporary agencies is justified in that, after an initial pilot survey of a random selection of all temporary agencies, it became clear that temporary accountants were working primarily from specialized firms rather than a general office help firm. (The temporary agency industry appears to specialize in professions, for example: legal secretary firms, health employment, secretarial.) Thus, our interview portion of the study can be said to give a good overall indication of managers' opinions in central London.

The interview itself was introduced as a London School of Economics research project about different forms of work. The respondents were informed that their responses would remain untraceable and be used for academic purposes. This improves confidence in the truthfulness of the responses given. An attempt was made to speak with the owner/manager so that responses were as much as possible obtained from employees with relatively equivalent job descriptions.

Employee Opinion Questionnaire

Since the theory of temporary work and the hypotheses of job forms developed in Part 2, are based on the perception and relative value of working conditions by employees, a self-reporting questionnaire (a design which inherently measures perception and opinion) was considered the most appropriate tool. Although the accuracy of this type

of research tool in obtaining actual "real" levels may be questioned, for our study this becomes less troubling since it is precisely the opinions and perceptions of employees that are critical to our theories. This ensures its construct validity. To a large extent a confidential and self administered questionnaire is one of the more accurate tools in obtaining this information and, if appropriately designed, one of the most objective unbiased tools, thus establishing its reliability.

This portion of the evidence yields some of the more important and original results of our study because there has been little investigation comparing working conditions between individuals in the same industry, performing the same job, but with different job forms, ie temporary *versus* permanent. Bearing this in mind, it is this design which allows us to be more confident in our comparisons of working conditions than other designs of the past. Because the questionnaire was administered in the same time frame, within the same region and in the same occupation, many of the influences which can skew results about job forms were held constant. This is an important aspect of our design for we feel, when trying to describe and compare working conditions or when trying to produce normative statements about working conditions, it is paramount that the effects of the time frame, industry, occupation etc., are, as much as possible, held constant.

The final design of the questionnaire followed an initial pilot study of 10 temporary accountants. Their responses were considered and follow-up telephone interviews were performed, thus alterations and adjustments were made to the questionnaire. Several large firm employees were also administered the questionnaire, and the process repeated. Furthermore, several managers were sent a questionnaire to make detailed design

corrections in order to increase the readability and reduce confusion in its format. The resulting questionnaire is given in Appendix D.

The questionnaire was organized with care for its internal validity, taking into account possible spurious relationships (see eg, Yin, 1989). We included a range of questions about many different aspects of working conditions, and personal histories allowing us to test numerous relationships, not just control over working-time.

The two firms surveyed, a large London accountancy firm and a London temporary accountancy firm, were sent identical questionnaires in the Autumn of 1991. The large London accountancy firm was divided up into 6 divisions; 3 of these divisions were randomly chosen as perspective respondents. This amounted to 265 questionnaires distributed to the employees. The questionnaires were delivered by firm internal mail under our supervision with a cover letter with London School of Economics letter head stating that responses would be used for academic purposes and that all responses were confidential, that no individual would be traceable back to a particular questionnaire. The participants were also given a return envelope so that questionnaires were returned directly to us at the LSE. The firm itself never handled the completed questionnaires. From this we received 175 responses, a response rate for the large firm of 66 per cent.

A similar system was used for the temporary accountancy agency. All (75) of the accountants were sent a questionnaire through the post to their house. Also included was a cover letter which explained the project without referring to it specifically as a project

about temporary employment, rather about working conditions. Again, completed questionnaires were returned by post to the LSE. Confidentiality of the responses was expressed. Of the 75 mailed we received 50 responses. This is a 67 per cent response rate.

THE EXTERNAL VALIDITY OF OUR STUDY

Robert Yin (1989) contends that a study of this type produces external validity (producing results which can be used in other situations), not by statistical generalization but by analytical generalization.

> "In analytical generalization, the investigator is striving to generalize a particular set of results to some broader theory. For example, the theory of neighbourhood change that led to case study in the first place is the same theory that will help to identify the other cases to which the results are generalizable. If a study had focused on "gentrification" (see Auger, 1979), the procedure for selecting a neighbourhood for study also will have identified those types of neighbourhoods within which gentrification was occurring. In principle, theories about changes in all of these neighbourhoods would be the target to which the results could be later generalized. " (Yin, p 44)

This analytical generalization means that for this case study the focus may be one specific temporary accountancy agency and one specific large accountancy firm, however, the results may then be generalized to a much broader theory of different job forms within an occupation.

Still, we believe it is incumbent upon a case study to provide some proof of its statistical generalization or more importantly its use for a wider audience. This can be approached in various ways. A traditional method is to carefully select a case that is representative of an important larger group. This technique is akin to the statistical method of sampling

from a larger population.

We have described in Chapter 2 the emergence of the importance of the knowledge based employee. This is suggested by the growing numbers of business service and professional employees in both Great Britain and the United States. Accountancy as an occupation fulfils almost all of the requirements of being in this group of knowledge based service business industries. It requires much formal education, services all businesses, and is itself inherently a knowledge based product. This, we believe, goes a long way in satisfying the requirements of external validity.

Because we propose a general trend in employee preferences and a relatively new approach to labour market segmentation, no one set of evidence will be altogether convincing. We find it necessary to analyze the circumstances that surround organizations using three different sets of data. This will give more power to the conclusions that we draw about our hypotheses and about the hypotheses of demand-driven segmentation. In the following chapters this evidence is displayed and assessed.

Chapter 7

Testing Demand-Sided Models by Secondary Analysis of Evidence

INTRODUCTION

We have constructed a model of intra-occupational labour market segmentation, while promoting two assertions: (i) that segmentation proper may partially occur between two groups of people within an occupation, those who work as temporary workers and those who work permanently within a firm (core - periphery) and (ii) that segmentation (stratification) may partially occur internally within the structure of the firm as expressed by the different compensation packages between tiers. The former is hypothesised to partially occur from employee preference influences, specifically the desire for control over working-time. The latter occurs due to mobility chain forces as well as employee preferences. Both are results of the preferences of protean employees.

The purpose of presenting segmentation in this way is two fold: (i) to emphasise the importance of the time patterns and preferences that surround work, and (ii) to establish the relevance of the supply-side (employee side) influences on labour market segmentation and stratification. The significance of time and temporary work was treated

in previous chapters. This chapter investigates the appropriateness of the latter proposition by examining past temporary work literature.

While doing so, we will show how present studies have been predominantly testing a demand-sided segmentation argument. It is asserted here that they go far in disproving the total relevance of this argument. The general rejection of the demand-sided theory gives strong confirmation for the need of a study of supply-sided (employee preference) driven labour market segmentation theory.

The chapter begins with a brief review of the demand-side theory. Section 1 looks at UK literature that uses the firm as its starting point. Section 2 looks at UK literature that emphasises national data, and section 3 looks at US literature that emphasises national data on temporary agency workers. The analysis also gives some indication of the relative numbers of temporary workers in both the UK and the US. Several tables follow Section 2 summarizing the data on temporary work in the UK and one table follows section 3 which summarizes US data. We will also see to what extent the discussions have made use of the universal definition "temporary work" and where there might be room for more intimate studies of smaller segments of the larger group called "temporary workers".

THE DEMAND-SIDED ARGUMENT FOR LABOUR MARKET SEGMENTATION

In general, the demand-sided argument most often used to study temporary work is that, with more and more frequency, firms are becoming leaner. They establish this by

coveting a smaller number of core workers. The theory goes on to say that they can do this only because they are allowed to increase their numerical flexibility (see Atkinson discussion in Chapter 3 above) within the firm. This will result in an increased use of peripheral workers, in this case temporary workers, by the firm at the expense of permanent job forms. Thus a demand-sided (or firm) driven segmentation of the labour market will occur.

Much of the literature below is used to test the hypothesis that firms are changing universally towards this new organizational structure[1]. A change like this, it is hypothesised, should result in greater numbers of temporary workers as a proportion of the general work force. The theory also suggests that there might be greater numbers of temporary workers working in this job form involuntarily. These are labelled "involuntary" temporary workers versus "voluntary" temporary workers. Both of these are either overtly or intrinsically tested in the literature on temporary work.

If we can show that the demand-sided argument for segmenting employees into temporary employment is partially, if not wholly, refuted by previous work, then this supports our contention for an analysis based on supply-side forces. Again, this is the point of this analysis.

[1] Lane (1989) proposes that the practice extends through Britain, West Germany and France. She uses an historical and cross-national approach in her study.

TESTING DEMAND-SIDED ARGUMENTS
EVIDENCE FROM UK

Firm Based Data

One way of investigating the demand-sided model is to use the firms themselves as a data base. This is done by approaching the firm and asking if its policies towards temporary work and other peripheral forms of work have changed. This then is usually followed by an analysis of how this will effect the working conditions of the labour force, both permanent and temporary. This is a direct approach in that the evidence is directly obtained from the opinion of managers to their own organizational structure. The results of some of the more important studies are given below.

The Labour Research Department's (LRD) (1987) pamphlet summarises the findings of its own survey of this type. It was carried out between April and June 1987 and covered 370 firms from various regions in the UK. They report that 42.4 per cent of the firms were increasing the use of temporary workers in the previous two years. They give different types of evidence to the increasing flexible structure of the firm by reporting that 15 per cent of the firms surveyed report that they are using temporary workers to replace permanent workers. In general it gives some indication that the use of temporary workers has or will change.

One result particularly pertinent to this study shows that all of the respondents from the banking finance and insurance industry report that they are using some temporary workers to replace permanent staff (two firms). The document goes on to note that

agency temporary employees are treated differently in that they are regarded as the responsibility of the agency.

Meager (1986), using Institute of Manpower Studies (IMS) data of 175 employers (out of 296. "It covered a broad cross-section of sectors and size groups..."), from the opinions of employers, draws the conclusion that "among the IMS sample, the use of temporary workers has been growing since 1980." This is based on the fact that 39 per cent of the employers report increase use of temporaries relative to total employment, 44 per cent report no change and 17 per cent reduced their use.

Meager notes that some "differences were observable between occupations in the form of temporary work adopted (here he is distinguishing between direct employment and agency employees). In particular, moving down the occupational hierarchy both in the manual area (from skilled to semi and unskilled, catering and cleaning jobs) and in the non-manual area (from managerial and professional to clerical and secretarial jobs) the proportion of directly employed temporaries tends to increase."

He concludes that "three-quarters of employers in most industrial sectors make use of temporary workers" and that "newer rationales for the use of temporary workers (associated with "flexible manning" policies) are increasingly important, but traditional rationales (holiday, sickness and absence cover, seasonal workload fluctuations etc) are still dominant." He qualifies this statement by noting that "The new rationales had emerged particularly in the manufacturing sector". The basis for this conclusion appears to be the 30 per cent of the respondents who reported that they use temporary workers

"to avoid recruitment of permanent employees at a time of uncertainty about future employment levels"[2].

Each of these traditional rational reasons are intrinsically interlaced with the timing of work. It is either the need of the permanent employee to have time off, or the seasonality of the workload that alters the temporary work force. Still, however, he predicts a rise of temporary employment in the future and an increase in the use of new rationales as the reason for using temporary work. Again, in general, this supports the demand-sided flexible firm hypothesis.

Potter (1987) also uses the IMS data to defend his belief that temporary work is increasing. He is particularly concerned with the consequences this will have on both unions and those workers who will be employed as temporary employees. He infers similar conclusions as Meager[3].

Piotet (1988) reports that the EFILWC foundation's[4] data "indicate that there is a real interest in flexibility and a move away from salary-related issues as the sole object of collective bargaining, particularly in countries with relatively high income levels". But

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[2] Notice how this could actually be a traditional reason if one reads the question closely. They are not replacing permanent jobs, but utilizing temporary personnel when they believe that demand may be short lived. If demand becomes longer term there is no indication that they would not hire these people full time.

[3] The debatable issue of the IMS survey and the LRD survey is their reliance on the projections of the managers surveyed. There is some question as to whether this is a statistically accurate sample of all businesses. They do though take a step towards a more accurate study of temporary work in their attempt to emphasise the various industrial sectors studied and the differences between them. These articles are the strongest arguments for the demand-sided phenomena of labour market segmentation.

[4] European Foundation for the Improvement of Living and Working Conditions

the reliance placed on this statement can only be slim as the data were not given in the report.

Casey (1988) looks into the Workplace Industrial Relations Survey (WIRS) of 2000 establishments from both 1980 and 1984. He finds no indication that those firms that use temporary workers are more likely to use part-time help, home workers and freelance workers. In fact, in some instances there was even found some negative correlation, (temporary workers were substitutes for part-time workers in some instances). He concludes that the "global notion of the "flexible firm" is scarcely supported" (p 47). Casey also found no hard data that there was an increase between 1980 and 1984 of the use of fixed-term contract users. This is an indication of a stable amount of this form of peripheral employment. This suggests there is no growth in the numbers of firms switching their employment practices.

Hakim (1990) in using the Employers' Labour Use Strategy Survey suggests that very few firms are actually pursuing the flexible firm set-up in order to increase flexibility. This survey is unique in that it asks the employer directly what type of manpower strategy or plan is being carried out. There is even a direct question on their use of a core periphery strategy. The set up of the study is very good in that all questions were asked cautiously and in as unleading a manner as possible. She breaks up the study group into those employers that are "opportunists" and those that are "core/periphery strategists". Of the respondents, only 11 per cent were "core/periphery strategists". Because of this she believes that most firms are using peripheral strategies for traditional reasons.

Hakim (1990) believes that most of the rapid increase in peripheral employment is "brought about by the continuation and intensification of traditional and opportunistic approaches, as an extension of, or substitution for, the core work force". She warns that "Institutionalised temporary worker use that was instituted because of the recession could turn into a more patterned thing in the long run". But, unlike Hakim, we assert that (i) the traditional firms' use of permanent workers developed because of the competitive advantages that this brought to the firm and (ii) that the use of a peripheral workforce by traditional firms in recessionary times can coexist with a reestablishment of permanent work after recovery. The interesting point is that there is no evidence for a core-periphery strategy by firms. This then reasserts the importance of a supply-side (or employee preference) driven model of labour market segmentation between periphery and core workers. There may be more to be learned about periphery workers if periphery work is approached from the supply side. McGregor (1992) also using the ELUS concludes similarly that "the main reason cited by employers for recruiting part-timers and temporary workers was traditional ones" (p 225).

Rubery (1988) while giving a general review of data and key articles on precarious forms of work in the UK concludes with some enlightening propositions about precarious work and institutions. She states that

> "the diversity of factors which influence the level and pattern of non-standard and precarious employment forms must cast doubt on simplistic notions concerning the presence of universal trends towards flexible employment see eg Atkinson (1985) Hakim (1987b). There are major differences even between advanced EEC countries, in their industrial systems, in their systems of labour market regulation, and in their systems of social reproduction and income maintenance. These differences influence the incidence and significance of non-standard and precarious work Rubery (1988a). Thus, evidence of similarities in levels and trends between countries may be the outcome of different combinations of

> circumstances which have by chance resulted in similar net overall changes. Moreover, current demand for precarious work may not reflect long term trends in the organization of markets and technology, but short term responses to uncertainty or variability in product markets or over-supply in labour markets"(p 70 -71).

She goes on to comment that

> "the problems with universal explanations of the development of precarious or flexible work become even more apparent when particular countries or particular employment forms are studied. In the UK there is unambiguous evidence of growth only for self-employment and part-time work ... the evidence for a general growth of other precarious work forms such as temporary, contract or homework is much less strong" (p 70 -71).

This supports our contention of the importance of clearly placing and stating which labour market one is studying for explanations may vary between occupations. Overall, the difference in opinion between Rubery and Meager and Potter, may be brought on by the fact that Meager and Potter use statistics which ask for future tendencies of firms, whereas Rubery is using current data and past growth rates.

Most potently Rubery concludes that

> "the focus of research into the restructuring of the labour market should therefore not be exclusively or mainly on different contractual arrangements but also include the potentially much more significant transformations in employment conditions for those within the regular, but increasingly unprotected labour force" (p 71).

Rubery's argument is of course to the point of our thesis -- that not just the change of the job form should be looked at when discussing the precariousness of work but the entire situation surrounding that job form. This suggests the need to include influences which

effect an occupational market place across all job forms. In other words, not just a study exclusively about temporary workers but one in which permanent workers within the same industry are included as well. This then will give a good idea of how compensation occurs via working conditions across job forms. Most importantly, it should approach labour restructuring not as the exclusive domain of demand-sided effects but also supply-side (employee preference) forces as well.

General Data

The general notion of the flexible firm, beyond generating expected outcomes when surveying the attitudes of firms, also fosters some expectations about the total numbers of temporary workers in the UK and the number of "involuntary" temporary workers. If the flexible firm is a growing phenomena one would expect both numbers to increase. The following literature explores both of these numbers using national data. Again, what we stress here is that the demand-sided theory emphasis is once again prevalent, and to a large extent discredited. This opens up large avenues for further studies into employee preference driven labour market segmentation.

Casey (1988) has produced the most extensive study of Labour Force Survey (LFS) data as well as Workplace Industrial Relations Survey (WIRS) data on temporary workers in his *Temporary Employment - Practice and Policy in Britain.* His first contribution is the extensive listing of categories of temporary employment. He uses eleven altogether and

notes that "many of these categories in fact overlap each other[5]" (p 4). These categories, though non-industry specific, do break temporary work industry into the various forms the contractual arrangements take. It may turn out that these are good indicators of industry specific characteristics, if certain industries use certain types of contracts.

Utilizing the categories that he first establishes, the book follows with descriptions of some of these categories. Most notably for this study, he states that "people who work through and are paid by agencies numbered only some 50,000 in 1984 and made up only just over three per cent of the temporary labour force. ... and that nearly half are working in the banking, finance and business service sectors" (p 16). Interestingly though, Casey later notes that "The FRES (Federation of Recruitment and Employment Services) estimates that their members might have about 60,000 temporaries on the payroll at any one time in 1985 (a figure broadly consistent with LFS data), but that some half a million persons might have worked for an agency for some period in the course of that year" (p 82). This problem of counting temporary workers is inherent in any data set on temporary workers. Because the temporary workers and temporary work are time-sensitive, the actual numbers of temporary workers for any one year will always be hard to estimate.

Most noteworthy is Casey's claim that others who do claim that temporary working in recent years has grown are given "no support whatsoever" by his own findings from the

[5] The eleven categories are: (i) Consultants or freelancers, (ii) Labour only sub-contractors, (iii) casual workers (different than King's (1988) definition), (iv) seasonal workers, (v) fixed term contract workers, (vi) workers with a contract dischargeable by performance, (vii) workers on a training contract, (viii) temporary workers on indefinite contracts, (ix) agency workers, (x) employees of work contractors, (xi) participants in special programs for the unemployed.

LFS survey. From 1983 to 1986 temporary workers excluding those in government programmes grew but just 5 per cent. Citing the fact that this was a period of economic growth, it makes this all the more "noteworthy". In fact he goes on to explain that when this is expressed as a proportion to the total labour force, there has been no growth at all.

In an article (1988) published prior to his book, Casey brings up the issue of "involuntary" temporary work versus "voluntary" temporary work. The results cited are determined by the response to a question in which the participants select whether they took a temporary job because they could not find a permanent job or other reasons[6]. He finds that 36 per cent of those employed as temporary workers were doing so because they could not find a permanent job. This gives us the 36 percent of involuntary workers[7].

Casey also examines the numbers regionally and suggests that involuntary temporary work is positively related to the numbers of unemployed. Those regions with high unemployment appear to have more "involuntary" temporary workers. Combining this with the conclusion that the numbers of temporary workers are stable, there appears to be a stable number of temporary jobs relative to permanent jobs. The consequence of unemployment means more permanent workers are competing with temporary workers for temporary jobs. As the number of permanent workers who obtain temporary jobs

[6] The choices are: could not find a permanent job, did not want a permanent job, because the job has training and other reasons.

[7] These are the numbers that we report in Table 7.2, though we believe they are a bit inflated in that temporary work has long been recognized as an avenue to secure some money while looking for a job or *job shopping*. Furthermore, temporary work is often noted as an avenue to a permanent job. Arguably this will not account for all of the "involuntary" temporary workers but it could explain some of them.

increases, then the number of "involuntary" temporary workers increases. This does not mean that more temporary jobs are being created which are dissatisfying to the work force, but that preferences of individuals and the job form are not being matched up appropriately.

But, other than this, what does this tell us about temporary work? It tells more about the state of the economy as related to unemployment than it does about the working conditions of temporary work, or the reasons that temporary work exists. It is from the demand-sided theory and the broad definition of temporary work that this debate grows.

King (1988), using findings from the 1986 Labour Force Survey, reports that in 1986, 28.3 per cent of the temporary worker respondents reported that the reason was because they could not find a permanent job, 35.3 per cent did not want a permanent job, and 32.9 per cent had other reasons (1 per cent mentioned contract with training). King states that "Both among men and women, the proportion taking temporary work as a substitute for permanent job has tended to fall very gradually between 1984 and 1987." This study, rather than emphasising the number of dissatisfied permanent workers, who are stuck in temporary jobs, is developed to propose a reason for the other 68 per cent who either did not want a permanent job or had other reasons. This gives some indication of the relative importance of the "employee preference" segmentation of the labour force into the temporary work job form.

Marshall (1989), using a different set of data, produces conflicting results on the numbers of "involuntary" temporary workers. These numbers differ greatly from the LFS

numbers. Still, they are useful in that they show how difficult it may be to determine an "involuntary" temporary worker. She reports that in 1983, 52.6 per cent of temporary workers in the UK were involuntary, in 1984 - 60.2 per cent, in 1985 - 56 per cent and in 1986 - 57.2 per cent. Her sources were supplied from "unpublished Eurostat tables."

Burchell (1989), in a more specific study, looks into the "effects of precarious work on the psychological health of the individual" (p 225). However, before doing this he selects for his study those jobs that are particularly precarious and labels that group "temporary work." But, he clearly states that he excludes "many jobs which, although short term in nature, would be considered as good jobs in terms of other criteria such as pay, conditions, status and availability of work; for instance much specialized consultancy work is, by its very nature, almost always taken on a temporary basis may not be precarious" (p 226).

This is an interesting point in that it is because of the prevalent emphasis on the demand-sided segmentation that studies like this will emphasise or be skewed towards the proposed effects of institutionally influenced labour market segmentation. To Burchell's credit, though, he is trying to redefine what "temporary" is. To him, it appears that it need be employment that is necessarily precarious. However, the point to be gained from this is not whose definitions or typologies are the most accurate, but that there is a general emphasis on testing either the consequences of the flexible firm or the side effects of the flexible firm.

From his study Burchell concludes that the "primary psychological problem with

temporary work is probably the insecurity that it brings ... insecurity and the failure to plan for the future are among the principle causes of the worsening in psychological health that accompanies ... temporary work" (p 245). But remember that these results depend upon his selection of temporary work to be studied - the previously described "precarious temporary work". This is possibly a form of selection bias.

Furthermore, the reactions of permanent employees in similar occupations were not shown. This suggests the possibility of occupational influences being registered as job form influences. But, in this study he is making a step to a more accurate (accurate to her) description of temporary work, in that he determines that the insecurity that she talks about can be more precisely placed onto those types of workers that are included in his study. He is giving some indication of the importance of a specialized study.

He also gives data on "involuntary" temporary work using a different data base. From four surveys (the Prices and Income Board, 1968, The Federation of Personnel Services, 1975, and the Alfred Marks Bureau, 1982, all cited in Syrett [1983]; and the Labour Force Survey, 1984), he reports a "consistent pattern over time". He claims that the proportion of involuntary temporary workers was increasing from 13 per cent (1968), through 25 per cent (1975), 33 per cent (1982) to 36 per cent (1984). He does go on to say that

> "while these figures are not directly comparable because of differently drawn samples, different phrasing of the question and different response options, the conclusion that might be reached is that temporary work used to be taken on "voluntarily" in times of almost full employment, in times of high unemployment employees have increasingly been forced to take on temporary jobs due to lack of alternative" (p 238).

Again, the effect may stem not from full time jobs being transformed into temporary jobs but from permanent workers muscling in on easy entry temporary work.

Dale and Bamford (1988) in summarizing some more specialized articles show how the use of temporary contracts may enable an employer to increase control over the workforce as well as to achieve numerical flexibility. They state that "evidence from qualitative research highlights the lack of labour market power which makes some groups particularly vulnerable to casualisation. For example, Fevre (1986) demonstrates the way in which redundancy and unemployment lead to an acceptance of casual work among ex-steel workers in South Wales that would not have occurred in more prosperous times".

Coyle (1986, p 223), in a study of privatisation in the NHS, argues that "the most vulnerable sections of the workforce are at the foremost of a general dismantling of the regulation and control of employment". This is interesting in that it is a new argument about temporary work. It introduces the idea that temporary work is a controlling tool. Still, much more needs to be done to prove or disprove this.

Collinson (1987, p 385), in a study of women warehouse packers in the mail order industry as giving some good evidence to this influence of temporary work. The change in recruitment practices was seen to result directly from a recession. These of course defend Hakim's position - the stickiness of established job forms. However these ideas are thwarted by the relative consistency in the proportion of temporary employees employed. Dale and Bamford (1988) conclude appropriately that

> "while surveys such as the LFS are invaluable in giving a national dimension to employment practices which are evident from qualitative research, it is essential that definitions are clarified, and the limitations of sampling frame and method understood if results are to be meaningful. This is of particular importance when using a concept such as "temporary work" which has no formal definition and where variations in definition may make quite marked differences to the results of the analysis".

In summing up the UK data it should be pointed out, however, that some of the first academic works on temporary work seem to have been more precisely about temporary work rather than the flexible firm. Towers (1978), in writing on temporary work, gives us one of the first glimpses into temporary work in the UK. In the article he notes "that temporary work is strongly associated with industries and services of a cyclical or seasonal nature such as agriculture, hotels and catering, manufacturing and distribution, as well as those in which labour shortages seem to be a durable feature such as office work in central London and nursing generally". Immediately the emphasis is on the time-sensitivity of temporary work[8].

At this point studying temporary work in an academic setting was quite rare. Still, Tower's description of the 1975 Employment Service Agency survey of 7853 participants gives a fair indication of the number of temporary workers in the UK at that time. Tower's survey followed a pilot study that was reported by Newton and Parker (1975), which gives us some indication of the numbers of temporary workers in 1974. Because of the novelty of these studies at the time, little was done except to describe the numbers of the temporary workers. He goes on to hypothesise that "in the case of temporary

[8] Each of the industries listed are distinctive, save the unifying theme of the seasonality of their demand. The labour shortage industries, though, give no clue as to why they would use temporary work. One answer might be the desire for control over working-time by the employees themselves.

workers, it is likely that the composition of the [compensation] package is different in that the worker may seek and be offered ... benefits which are more likely to influence other members of the working population" (p 101).

Where does this leave us? The point to be gained is that the emphases of many studies on temporary work are based upon the idea of a changing structure in the organisation of work imposed by the demand-sided influences of the firm. Much of the evidence given by past literature appears to refute this idea. This makes room for our thesis which attempts to reassert the importance of the supply side (employee preference for control over working-time) in temporary work and the segmentation that it represents in the labour market, as well as the impact it may have on organizations[9].

[9] Bosworth (1987) tends to agree. He states that "flexible employment strategies seems to be an over simplification and many of the changes we observe can actually well be regarded as reflecting the strategy of individuals wanting to achieve their own flexibility" (p 36). See also Pollart (1988) for a general argument against the core-periphery analysis.

TABLE 7.1 - The Total Number of Temporary Workers as Proportion of Total Employment - UK

SOURCE	YEAR						
	1974	1975	1981	1983	1984	1985	1986
Casey (1990) 1983-86 LFS				5.5	5.6	5.6	5.6
Meulders et al (1987) 1986 LFS							6.2**
Marshall (1989) OECD Figures			3*	5.5		5.7	
Towers (1978) Employment Service Agency Survey		6.7					
Newton (1975) Pilot Study Employment Service Agency Survey	8						
Parker (1976) Social Survey div.		7.3					

* This figure is calculated by Marshall from Hakim (1987).
** This figure includes those people employed temporary on government schemes.

TABLE 7.2 - Involuntary Temporary Workers as a Proportion of All Temporary Workers - UK

SOURCE	YEAR							
	1968	1974	1975	1982	1983	1984	1985	1986
Casey (1990) 1984 LFS						36		
Burchell (1989) Various*	13		25	33		36		
Marshall (1989) LFS Eurostat Unpublished Tables					53	60	56	57
King (1988) 1986 LFS								28
Towers (1978) Employment Service Agency Survey			8-30**					
Newton (1975) Pilot Study of Employment Service Agency Survey		12-30**						

* Data from Price and Income Board 1968, Federation of Personnel Services 1975, Alfred Marks Bureau 1982, LFS 1984.

** These numbers are derived from a list of optional responses and vary depending on what is included as indicating "involuntary" temporary employment.

LOOKING AT DEMAND VERSUS SUPPLY-SIDE ISSUES EVIDENCE FROM THE UNITED STATES

Rather than looking at temporary work as a general phenomenon like in the UK, the US has, in some sense, defined temporary work as only those people who are working for temporary help agencies. And, therefore, most of the literature about temporary work is developed along these lines. This of course narrows the scope of the US studies, but makes more exact what they are talking about. Much of the debate that grows in the UK literature from the broad definition of temporary work that is assumed there does not come up in the US literature. Still, the driving concern of these articles tends to be the relative numerical significance or insignificance of temporary agency work.

Moore (1965,) was the first to raise the issue of temporary work to the academic audience in the US. In his study of the temporary help industry he gives a clear over view of how the industry started, from post-World War II to about 1963. In it he produces a most relevant anecdote of the beginning of the temporary help service industry:

> "Robert B. Miller, president of Employers Overload, began in 1947 by running a blind ad in a New York newspaper. The ad asked people who wanted to work at their own convenience to phone Miller. The phone went wild. 'Calls were backed up all the way to New Jersey,' Miller then recalled."

Here even at the birth of the temporary help industry we see a bold faced indication of the extreme importance that freedom over working-time has in the temporary work labour force; it wass engrained in temporary help from the beginning.

Abraham (1990) discusses the growth of temporary help in the US. She notes that within the business sector, the growth of temporary help services was the highest of all business services between '82 to '86 with an annual growth of 19.9%. In 1986 she says the BLS estimated that 787,000 individuals were working as agency temps. This is in numbers employed. She puts these figures in interesting perspective by noting that in 1986 "there were 283,200 employees in the steel industry (SIC 331), 684,400 employees engaged in manufacturing computers and semi-conductors (SIC 3578 plus SIC 5674), and 833,000 employees in the automobile industry (SIC 371)[10].

The figures above highlight the importance of temporary agency employment. However, it would be even more instructive to know what profession the temporary agency employee was working in. These numbers reflect specialized professions (agencies

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[10] Belous (1989) in writing about the US "contingent" workforce (contingent meaning temporary, part-time, business services and self-employed) notes that the temporary workforce in the US grew from just .4 million workers to 1.1 million workers from 1980 to 1988. This is a 175 per cent change, which is very dramatic compared to the total US labour force growth rate of just 14 per cent. He contends that "in recent years, US labour markets have shifted away from the rigid labour market world and toward a more flexible labour market environment. He claims that in 1980 90 per cent of the US work force were core workers and that 10 percent were contingent workers. This changed drastically in 7 years, wherein by 1987 75 per cent of the work force was made up of core workers and 25 per cent were contingent. This of course is strong evidence as to a switch in the US toward a more flexible employment dynamics. However, it is impossible to infer from this data whether the change is because of employer's different approaches or a change in preferences by the work force (specifically expert, professional, protean workers) to a different employment arrangement.

Carey and Hazelbaker (1986) note that between November 1982 and November 1984 the temporary help industry added about 280,000 workers to its payroll, and that "it was the fastest growing industry among those with employment greater than 50,000". Simonetti, Nykodym and Sell (1988) note that this is a growth rate of about 24.4%. They also note that in 1988 2.5 million people were employed in the temporary help industry. These discrepancies, as noted in some of the UK literature, are due to the adjustments made in that people may be employed at a temporary help firm for only one or two weeks or even one day. This implies that a large number of those people working for a temporary help firm in any one year would not be counted using survey data. Only those people who are consistent workers in temporary help agencies. But this is the *raison d'etre* for the industry. This means that some of the more freely drawn estimates of the numbers of temporary help industry employees may be more accurate than the actual numbers procured by survey techniques. In the future it will be necessary to capture these missing temporary employees when estimating the temporary help industry's labour force.

usually specialize) in the business or knowledge dense professions. In that case, we argue that this does not necessarily mean that firms are converting to temporary help, rather it could mean that these industries and professions provide control over working-time which is suitable for time-sensitive employees[11]. Perhaps it is the supply-side preference of individuals who demand the flexibility of working-time that temporary work offers.

Some evidence for a supply-side force can be inferred from Abraham's (1990) report on Bureau of National Affairs Survey. In describing the cost of using a temporary agency worker, it was generally reported as being more expensive by 42 per cent of the Bureau of National Affairs survey. They responded to the question "Is your hourly cost for agency temporaries generally higher or lower than the hourly pay and benefits costs for regular employees in comparable positions?" This supports Burchell (1988) from the UK who, in noting Syrett (1985), suggests that it is even more expensive for firms to hire temporary workers per hour than it is to use a full time staff. Perhaps the time-sensitive temporary worker is the only available knowledge based expert employee.

Magnum, Mayall and Nelson (1985), using national data from their own mail survey and

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[11] Belous (1989b) by using Manpower Inc data, the largest temporary help company in the US, establishes that a dramatic change in the composition of temporary help occurred between 1978 and 1988. In 1978 three-fourths of the placements by Manpower Inc. were in blue-collar jobs and in 1988 70 percent of the placements were in white collar office jobs (secretarial, clerical). This information coupled with the higher than average increases in temporary agency employment points to white collar work being inherently temporary. Rather than converting to temporary, knowledge based industries may develop initially as temporary employment situations.

One thinks of the legal profession and medical profession as having always worked temporary for various clients. Perhaps because a larger proportion of the labour force now work in professions similar to these older professions they too will (or do) work under a contracted employment situation suitable to their preferences.

interviews, show that the use of temporary employees was negatively associated with the stability of product demand as measured by employment (n = 882 firms). This implies that it is the product rather than the organization of a firm that determines the use of temporary employees. If knowledge dense industries are inherently demand sporadic, then temporary employees will be hired. This argument is not Atkinsonian in nature but is still demand-side driven. And, although supporters of an Atkinsonian type model, Magnum *et al* propose that the temporary help service agency is an active external labour market devise which allows employees to be attached to some sort of coherent work, rather than be totally peripheralized from the firm. This gives a "modicum of security and upward mobility to workers in the secondary labour market" (p 611). This is particularly interesting to our discussion, for the temporary agency, rather than producing insecurity (as Atkinson asserts), provides increasing amounts of security. The idea is that no single firm can provide a stable demand for labour, however an industry or occupation in general can. This supports our contention that job security may be occupationally based or industry based, *not* job form based.

One of the more interesting studies to come out of the US is Gannon's (1984) research into the preferences of temporary workers. He looks at time, variety, and flexibility in the nursing industry. Of the entire sample of about 1,000 nurses employed as temporary nurses, over 60 per cent chose "freedom to schedule my work in a flexible manner" as the most important reason for working as a temporary nurse. This gives some evidence to the driving force of employee preference for control over working-time to segment the

labour force discussed above[12].

He concludes by noting that "the research indicates that flexibility in scheduling is the most important source of motivation ... and that the higher the skill level, the greater the probability of citing flexibility in scheduling as the most important reason for becoming a temporary employee." This supports our contention that studies of temporary work which neglect supply-side influences about control over working-time may be missing a significant element which describes this job form, an element that is based on intra-occupational employee preference job form choice, driven by time-sensitivity.

Williams (1989) reports on a unique survey of what temporary employees earn. This is based on a survey by the Bureau of Labour Statistics conducted in 1987 which covered more than 600,000 workers (it did exclude those establishments employing fewer than 50 workers) and revealed wide variations. The data itself shows that pay was partly determined by the location of the job and by the occupation. This is more evidence as to the importance of distinguishing which occupation is being selected to study as well as location, a methodological consideration that the interview and questionnaire portion of our study (Chapters 9 - 11) employs.

The data given on the numbers of temporary agency employees in the articles discussed above is given in Table 7.3 below.

[12] Note that he did not compare these responses with nurses that do not work temporary. Permanent nurses may have the same working-time flexibility. Our study is sensitive to the need to study various groups of workers at different points in their career and in different job forms.

TABLE 7.3 - The Total Number of Temporary Workers Working in Temporary Agency - US

(Numbers are in thousands)

SOURCE	YEAR													
	1956	1972	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Abraham (1990) US Dept. of Labor data												807		
US Dept. of Commerce data		180	320											
Carey (1986) [US Bureau of Labour Statistics]				340	400	420	450	390	500	650	695			
Gannon (1987) National Commission for Manpower Policy										2 - 3 mil.*				
Mack Moore Survey 1956	20													
Simmonetti (1988) US BLS est.														2 . 5 mil.*
Statistical Abstract US BLS (1990)														736
US Dept of Labour (1988)													1 mil.*	

CONCLUSION

The UK data tests more directly than the US data the hypothesis put forth by Atkinson and other demand-sided arguments. In the UK literature, we observe evidence against the theory of a restructuring by organizations to use temporary workers. This supports the importance of a discussion for supply-side forces. The US data shows an increase in temporary agency employment, and yet little evidence for a demand-sided or organizational driven change (the increase could be purely supply-side). Whether the change is due to organizational changes, occupational emphasis changes or employee preference changes is unclear.

Although many issues may surround temporary employment and all may have influences, we feel that past data yields a compelling intuitive basis to look at the supply-side employee preference aspect of temporary employment. Because there has been little work comparing working conditions between temporary employment and permanent employment conditions within an occupation we feel such an investigation will contribute much to understanding temporary employment.

Chapter 8

Evidence by Interviews

> "It was a sight to behold Tim Linkenwater slowly bring out a massive ledger and day-book, and, after turning them over and over and affectionately dusting their backs and sides, open the leaves here and there, and cast his eye half mournfully, half proudly, upon the fair and unblotted entries". (Charles Dickens - *Nicholas Nickleby*)

THE LONDON ACCOUNTANCY MARKET

By investigating the London accountancy market through manager's opinions we can test some of the hypotheses that were put forth in the theoretical sections of this thesis. Firstly, by coupling our interviews with professional accountancy journal articles we can test the validity of the Atkinsonian idea that job security is linked to job forms rather than occupations or industries. We investigate the rational for studying a specific form of specialized temporary work rather than temporary work in general. We also investigate the amount of control over working-time employees possess as expressed by managers.

This provides a test for our temporary agency employee preference hypothesis (Proposition 1) and our control over working-time hypothesis (Proposition 2).

The sample included 17 managers from 20 companies approached. The name of the companies which responded to our interview are given in Table 8.1 below. They range from the smallest to the larger temporary firms that have several branches.

Table 8.1
London Temporary Accountancy Agencies Interviewed

Love & Tate	Reed
Kelley	The Accounting Staff Centre
Allan Marks David Statton	Accounting Plus
Accountancy Connections	Accounting Recruiting Inc.
Abacus	Accountancy Aims
Accountancy Personnel (1)	Accountancy on Call
Accountancy Personnel (2)	Bond Accountancy
Accountancy Personnel (3)	Accountancy Task Force
Selected Accounts Personnel	

INTERVIEW RESULTS ON JOB SECURITY

The accountancy profession in the last ten years has grown almost 33 per cent. The number of students in the profession has grown more than that (Harvey, 1991). However, the summer of 1991, the time frame in which data was collected for this study, was by all accounts, a period of recession for most industries in London and the accountancy market was no exception. As reported in several trade journals, as well as newspapers, the London accountancy market was, for the first time in over a decade, contracting. Staff across the board were being made redundant:

"... 225 redundancies at KPMG, Peat Marwick McLintock, UKs second largest firm. ... 120 staff cut from London office, 60 from the London region and the remainder from the Northeast. ... Redundancy terms at 3 - 4 months salary" (*The Accountant*, May 1991).

"Price Waterhouse announced in early November that 150 consultants "at most grades" would be let go" (*The Accountant*, Nov 1991)

Accountancy "... as leading figures point out - is no longer a job for life. Nor is it the preserve for the dull and grey; while such people have a role they are unlikely to make it to the top" (*The Independent*, 28 July 1992)

The more qualitative accounts about the large accountancy firms given above are reflected in the numbers given in Table 8.2 below.

Table 8.2
Numbers of Accountants Made Redundant Summer 1991

Company	Numbers Made Redundant
KPMG Peat Marwick	225 Professional
Coopers & Lybrand Deloitte	220 Professional and Support
Price Waterhouse	180 Professional
Ernst & Young	150
Touch Ross	150
BDO Thornton	35 Professional / 35 Support

Source: *The Accountant*, July 1991

Clearly, the London accountancy market was contracting. These redundancies came after a large build up of staff throughout the 1980s. There were 29,911 United Kingdom accountants who were formally attached to an accountancy association in 1950; 88,636

in 1970; 133,712 in 1980; and 177,911 in 1990. These numbers imply a 33 per cent increase in the 1980s.

It appears that the pattern of growth for the temporary agency accountancy market is similar. Using responses from our more open interview, almost all of the 17 managers of temporary agencies surveyed believe that there was a rapid growth in the number of temporary accountancy agencies in the 1980s. One of the temporary agency managers stated,

> "It was so easy to start up a company [in mid 1980s]. You simply find a store front, advertise in the paper for some accountants and you were on your way."[1]

Indeed, most of these agencies sprang up in the accountancy boom period of the 1980s. It may have signalled the ability of knowledge based products (perhaps driven by technology) to be commodified.

However, during the period of this study, things had changed drastically for the accountancy market and for the temporary accountancy market as well.

> "Less demand for temporary professional staff and static salary levels among accountants in the UK are just some signs of the recession on the profession according to a report by Robert Walter Association. The London recruitment consultant. ... The report which covered the London and Birmingham regions showed that the demand for temporary professional staff is likely to dip sharply this year, along with requests for qualified temporary staff." (The Accountant, May 1991)

[1] Quotes from temporary managers are from different mangers in each case.

This is also reflected by the responses to our structured interviews. Of the respondents, 75 per cent reported that "there had been fewer jobs available for their staff over the past 18 months". Several even noted that the drop had been severe. Two of the respondents felt that there had been not "too much drop", and one other reported that there was actually a slight increase. They explained this by the use of temporary accountants when companies are going out of business "to clear up and clean up their accounts".

Table 8.3 justifies this response to some degree. It shows that insolvency work for some of the larger accountancy firms had increased as well.

Table 8.3
Percentage Increases in Insolvency Work By the Big Six Firms 1990 - 1991

Company	Percent Increase
C & L Deloitte	56
KPMG Peat Marwick	100
Price Waterhouse	100
Ernst & Young	30
Touche Ross	54
AA	64

Source: *The Accountant*, June 1991

None of those temporary agency managers contacted felt that business had shrunk to zero, but had perhaps dropped by 25 per cent. Still, it was noted that some of the branches of the large temporary accountancy Reed Personnel had been shut down.

Another large firm, Accountancy Personnel, appeared to be performing comparatively better.

It appears that the journal and newspaper reports, when connected to the interviews of temporary agency managers, imply redundancy for the accountancy labour market *in general.* Whereas the Atkinsonian demand driven model of a firm would expect a shedding of accountants from the outer rings of the firm (the peripheral job forms), a more accurate description might be that the recessionary influences take a slice out of the Atkinsonian accountancy labour market pie. A group of peripheral as well as core employees will be made redundant. This, of course, also includes the temporary employees.

However, organizational differences could result in different effects of a general decline in demand for an occupation. Large firm employees, or perspective large firm employees, may register with the temporary agency as they are made redundant. This could cause an increase in the supply of temporary accountants alongside a decrease in demand (as shown by our survey), which in turn may cause more intensified competition for long term temporary firm employees to find jobs. As one of the temporary agency managers interviewed reports,

> "We are now getting more applicants who were previously employed by large firms."

A SPECIALIZED FIELD

The interviews also suggest that the temporary accountancy market, as opposed to the temporary labour market in general, is a very specialized field. Most temporary agencies

supplying temporary accountants as their main function (rather than secretaries and the host of other temporary office jobs); 88 per cent of those interviewed felt that the market in general is supplied by agencies that specialize in accountancy.

This supports our original assumption that we would be studying a form of temporary employment that is not, and should not be, linked to other forms of temporary work. It is a specialized field that may (and this is one of our main contentions) be exerting occupational forces that are different from other temporary jobs. This emphasises the necessity of studying temporary jobs not just as a general phenomena (as many demand-sided theorists do) but as an occupational phenomena; not all temporary employment can be lumped together. This, then, supports investigation of supply-side issues which may be of importance in describing and analyzing job forms.

It also links temporary accountancy employees to the knowledge based industry in a specialized information technology field. This is the assumed area where protean preferences, or preferences for control over working-time, would surface.

There was also evidence that some of the professional accountancy placement agencies (agencies which are placing highly sought after individuals in permanent positions) will, on occasion, place an accountant in a temporary position if that accountant wanted to work for only a short period (a form of preference for control over working-time). Still, they do this as a sideline only, as stated by a placement firm manager,

"It's not really what we do on a day to day basis. Maybe once a month."

INTERVIEW RESULTS ON CONTROL OVER WORKING-TIME

From our interviews, we have evidence that temporary agencies provide control over working-time. They do this, according to one manager, by allowing employees to "either accept a job or not". Although not a structured question in the telephone survey, 100 per cent of the managers felt that their firm provides control over working-time. They link this to the fact that temporary employment is continually being decided upon by the employee, therefore they control when that occurs. To many of the managers it was an aspect of their profession which defined it. This means we cannot reject our Hypothesis 2 (that temporary work will provide greater control over working-time than other job forms).

In asking the managers directly why they think people sign up with their agencies, several respondents mentioned that quite a few were from Commonwealth countries and planned to stay in England for perhaps several years only, and prefer the flexibility temporary work offers. More generally, a temporary agency manager summed up our findings:

> "They walk in and want to work temporary due to the fact that they know they will be available for only a short time."

Of course this is crucial to our hypothesis about temporary agency employees valuing control over working-time. And our interviews did support this (this will be treated in greater detail in the next chapters). Of the respondents, 50 per cent mentioned, without being specifically asked, that some type of control over working-time as a factor for their employees in being temporary employees. None of the respondents gave a negative response about control over working-time when pursued specifically about this topic.

Still, 25 percent mentioned that temporary work might be an avenue to permanent employment for the temporary employee. These results do not allow us to reject our Propositions 1 and 2 (that temporary employment will offer control over working-time and that temporary employees will value control over working-time greater than other employees), but does not directly confirm them, since temporary agency managers are the respondents.

OTHER RESULTS

Our survey also captured the current circumstances of the accountants who came in to register for placement. About half of the respondents stated that the number of people "walking in the door" to register has increased. Some cautioned, however, that this could be due to accountants registering at more than one temporary agency service.

The interviews revealed a place where the permanent accountant and the temporary accountant appear to cross, namely the use of temporary agencies by the larger accountancy firms. It was volunteered that the larger firms will contract for short periods when projects or increases in demand appear. This was mentioned by four of the temporary agency respondents. They said that "not infrequently" some of their staff was used by the larger firms. One manager mentioned that "they are frequently used" in this way. This implies an occupational cohesiveness between temporary employees and permanent employees.

CONCLUSION

In general, these results provide a background for our other source of data - the Employee Opinion Questionnaire. When reading the results of the questionnaire, one must keep in mind the state of the accountancy market at the time the responses were given. Positive responses about job security must be viewed as extremely positive considering the market place at the time. Positive opinions about control over working-time, in a period of recession, give strong support for the importance of such non-pecuniary elements of the compensation package, which may provide support for the idea that the Atkinsonian idea of a core group of workers, may actually be non-existent. In other words, that most of the job forms are to some degree peripheral (in a job security sense); job security may be an occupational distinguishing phenomena not necessarily a job form phenomena. Perhaps only a very few are "core" employees. And perhaps attributes that distinguish "core" employees are of a highly personal nature, not of a job form nature. The interviews and reports given above do suggest some support for this. Job security appears to be an occupational hazard as much as a job form problem.

Furthermore, there is evidence that temporary accountancy can be linked to large firm accountancy and therefore be studied as an intra-occupational phenomena. And finally we have evidence which supports our contention that control over working-time is an important aspect of temporary work.

Chapter 9

The Empirical Constructs Derived from Our Questionnaire

DEFINING EMPIRICAL CONSTRUCTS

Before we analyze the results of our survey, we must describe the empirical constructs for the conceptual variables (control over working-time, job security, etc.). We do this as we build a set of indices which use several questions designed to extract the concepts desired. It is preferable to use a construct rather than a single question as an empirical tool, since combining a variety of questions concerned with the same concept increases the range of scores reported. This increases the reliability of low, medium and high scores. Along this same vein, one question alone may not capture all of the respondent's opinion of a concept. Thus, by using an empirical construct, a more inclusive proxy, one which has the virtue of averaging out extraneous influences, is established.

It is traditionally necessary to meet two criteria when using an empirical construct: those of internal consistency and external consistency. To measure internal consistency (when

appropriate) we rely upon Pearson's correlation coefficients and their significance. External consistency, defined as whether the name given to a construct is justifiable, can be satisfied if the individual items in the construct can be shown to relate to the theoretical definition. This is argued for in the process of developing the empirical indices and can be tested by direct observation.

CONTROL OVER WORKING-TIME INDEX

In Chapter 4 we proposed that the level of control over working-time may be critical in describing job forms of the Atkinsonian type (for example, core versus temporary). In other words, as control over working-time increases, the ability to accurately predict participation in a specific job form should increase as well. Since we argued that no one single time unit is important in defining working-time (for example, time units like hours of the day, or days of the week), it follows that a construct of several time units would be superior. (Whether reported levels of control over working-time are actual or not is not pertinent to our discussion, since perceived levels of control are the critical concept in a preference or opinion driven labour market segmentation).

Since there has been very little empirical work concerned with control over working-time as an important aspect of working conditions, precedent for constructing a proxy for control over working-time is limited. Our attempt was to be as inclusive as possible in the range of time units described. Although it may not be the case that a job form will

provide control across all time units, we felt it safest to construct our proxy, in the first instance, in this manner[1].

Four questions in the questionnaire were designed to reflect employee perceptions of control over working-time. These are listed in Table 9.1. responses were reported on a five point Likert scale where: 1 = "strongly agree", 2 = "agree", 3 = "neither agree nor disagree", 4 = "disagree", and 5 = "strongly disagree". For our statistical analysis, the numbers were reversed so as to associate high numbers with higher levels of agreement. For example, after recoding, "strongly agree" = 5. This helps to clarify some of the analysis that follows.

Table 9.1
Control Over Working-Time Items

Label	Question
$Timecont_1$	I have control over the times of the day that I work.
$Timecont_2$	I have control over the total number of hours I work during an average week.
$Timecont_3$	I have control over which days of the week that I work.
$Timecont_4$	I have control over which weeks out of the year I work.

[1] In so far as control over working-time may be considered to be a desirable attribute of work, respondents may tend to exaggerate upwards their responses. However, because the questionnaire was entirely confidential and since the responses would not possibly effect their working conditions, we believe the responses will tend to be truthful.

The correlation matrix of these five items shows that each item is correlated with the other items. Person's coefficient of correlation for each pair is significant at above the 99 per cent level. This matrix is reproduced as Table 9.2.

Table 9.2
Control Over Working-Time Items: Correlation Matrix

Item	1	2	3	4
$Timecont_1$	1.00**			
$Timecont_2$	.6747**	1.00**		
$Timecont_3$	.5271**	.5185**	1.00**	
$Timecont_4$	.3272**	.4482**	.4118**	1.00**

** significant at > 99 per cent.

A principal components analysis of the five items demonstrated that a single common factor ($Timecont_1$) explained 61.7 per cent of the variation between the items. Table 9.3 reports the loading coefficients onto this factor.

Table 9.3
Control Over Working-Time Items: Factor Loadings

Items	Loading Coefficients
$Timecont_1$	0.82305
$Timecont_2$	0.85742
$Timecont_3$	0.78414
$Timecont_4$	0.66466

Regression method factor scores were obtained, and used to construct a scale using all four items. The scale, TIME CONTROL, varies with a standard deviation of one about

a mean of zero. Excluding cases which contained a missing value of one or more of the component items, 225 cases had a TIME CONTROL value computed.

OTHER CONTROL INDEX

A study on control over working-time which excludes other working conditions will not be as useful in determining the relative importance of working-time control to a job form. Therefore, we have included other variables used to indicate control over other aspects of work. These other aspects of control at work may also play an important role in distinguishing between job forms, but it is the point of this thesis to test the hypothesised relative importance of control over working-time for different job forms, more specifically the temporary employee from a large firm employee. We hypothesised that it is this control over working-time that distinguishes the temporary work job form. Still, creating an index about control over other aspects of work needs to follow the same steps that were used to create the TIME CONTROL index. Table 9.4 reports the items used.

Table 9.4
Other Control Items

Label	Question
$Othcont_1$	I have control over the location that I work from.
$Othcont_2$	I have control over the types of tasks that I perform.
$Othcont_3$	I have control over the amount of work I must complete.
$Othcont_4$	I have control over the setting of deadlines.
$Othcont_5$	I can choose who I work with.

Again, a correlation matrix was calculated between the items and is reported below with Pearson correlation coefficients in Table 9.5.

Table 9.5
Other Control Items: Correlation Matrix

Item	1	2	3	4	5
$Othcont_1$	1.00**				
$Othcont_2$	.4325**	1.00**			
$Othcont_3$	.2670**	.5170**	1.00**		
$Othcont_4$	.1555*	.3770**	.5095**	1.00**	
$Othcont_5$	.3724**	.5511**	.3183**	.3262**	1.00**

** significant at > 99 per cent.
* significant at > 95 per cent.

A principal components analysis of the five items demonstrated that a single common factor explained 51 per cent of the variation between the items. Table 9.6 reports the loading coefficients onto this factor.

Table 9.6
Other Control Items: Factor Loadings

Items	Loading Coefficients
$Othcont_1$	0.59867
$Othcont_2$	0.82984
$Othcont_3$	0.73876
$Othcont_4$	0.65459
$Othcont_5$	0.72597

As in the TIME CONTROL index, factor scores were obtained, and used to construct a scale using all of the items. This scale is labelled OTHER CONTROL and varies with a standard deviation of one about a mean of zero. Excluding cases which contained a missing value of one or more of the items, 224 cases had an OTHER CONTROL value computed.

Since both of these newly constructed scales use control as a description of working conditions, it is instructive to look at the correlation between the two indices to determine the accuracy of making the *a priori* division between the two. The items within these two indices were closely correlated, with a mean correlation coefficient of the OTHER CONTROL index of 0.394 and for the TIME CONTROL index a mean of 0.484. This compares to a mean correlation coefficient between items in both groups of 0.295. This supports the theoretical idea of constructing the two separate indices.

JOB SECURITY INDEX

Because the levels of job security are important job form determinants for the Atkinsonian demand driven theory, wherein the job form rather than the specific industry is hypothesised to influence levels of job security, we must assess the ability of that portion of their model in predicting job form participation. This will be useful in determining the validity of our own model. Therefore, an index using the items listed in Table 9.7 was used in our analysis.

Table 9.7
Job Security Items

Label	Question
$Security_1$	My amount of job security is an important advantage of my job.
$Security_2$	In the next two years I will expect to be made redundant.
$Security_3$	An increase in my job security would improve my situation.

In contrast to the two previous indices, a Pearson's correlation coefficient is less useful in determining the validity of this index. This is the case because we do not assume that the level of job security, as reported by $Security_1$ and $Security_2$ will necessarily be correlated with the opinion as to whether an increase in job security above this level is valued, as reported by $Security_3$.

This index exemplifies how we part from the traditional demand-sided theories which neglect employee preferences, since in this index, as well as levels of job security, we have included an item which addresses the opinion of the respondent to that level of job security. So that if job security is low (as registered by $Security_1$ and $Security_2$), but satisfactory (as reported by $Security_3$) this increases the level of job security in the index.[2]

[2] Items were recoded appropriately so that high numbers for each item equate to high levels or positive opinions about levels of job security.

We calculate the index by giving equal weight to all three items. This gives twice as much weight to the level of job security, as compared to the importance of job security, since twice as many items are used. This is done so as to create an index which emphasises the traditional measurement of levels of job security while allowing for some reported opinions about the level of job security. The final index, JOB SECURITY, varies with a standard deviation of one about a mean of zero.

INCOME INDEX

Just as in the index JOB SECURITY, our index for income relies not merely upon levels of reported income but on opinions about those levels of income. Therefore, income is approached from the supply-side employee preferences rather than the demand-side of the firm. This is achieved by using items related to income which were designed to extract opinion about the income the respondent receives. These items are given in Table 9.8 below.

Table 9.8
Income Items

Label	Question
$Income_1$	The amount of income I receive for my work is an important advantage of my job.
$Income_2$	My income including all assets gives me more than enough money to feed and house my family comfortably.

These two items had a Pearson Correlation Coefficient of .28 which was significant at greater than 99 per cent. Regression method factor scores were obtained, and used to

construct a scale using both items. This scale, INCOME, varies about a mean of zero with a standard deviation of one.

MOBILITY INDEX

We use mobility here in the sense that an employee is able to move along a type of promotional ladder or between tiers in an occupation. This is the sense that Doeringer and Piore (1971) use in their analysis of primary and secondary labour markets. Our index for measuring the availability of mobility is not complex. Others have gone into great detail how one can measure mobility. We use a more blunt instrument consisting of the two items in Table 9.9 below.

Table 9.9
Mobility Items

Label	Question
$Mobility_1$	My chances for promotion are an important advantage of my job.
$Mobility_2$	An increase in my responsibilities would improve my situation.

$Mobility_1$ is used as a direct measure of the level of mobility between tiers. Again, it is relying on the opinions of the employees, because these are what is necessary for an accurate assessment of supply driven forces. $Mobility_2$ is used as an assessment of the preferences of an individual to the level of mobility available. The index is a combination of these two items similar to those used in the JOB SECURITY index. It takes into account both levels and preferences. In our construct we again weighted the level more than the preference to emphasise the traditional model. Regression method

factor scores were obtained, and used to construct a scale using both items. This scale, MOBILITY, varies about a mean of zero with a standard deviation of one.

CONCLUSION

We have established a set of empirical constructs we label indices. These are conceptual variables that are inherent in the Hypotheses 1 and 2 as well as Propositions 1 and 2. Internal consistency, when appropriate, was checked through the Pearson's Correlation Coefficient. External consistency was predominantly assured in the initial design of the questionnaire, where the questions used were formulated to measure the concepts of our theory. Another means of internal consistency is to demonstrate the predictive power of the indices. If they are useful tools in testing hypotheses and empirical results validate their importance, then we should not reject their use.

Chapter 10

Results -- Testing The Relationship Between Temporary Work and Control Over Working-Time

In Chapters 4 and 5 we argued that job forms (temporary versus permanent or core versus periphery) could be described by employee preferences and a more inclusive list of working conditions. We argued that control over working-time may be a very important element of working conditions since it has the potential to describe different job forms which provide different levels of control over working-time within specific labour markets. We also argued that the over-emphasis of demand-sided influences on job forms in theory and empirical research, necessarily neglects other important elements of job forms as preferred by the employee, namely control over working-time. This implies that conventional analysis of labour market segmentation may bring about erroneous conclusions about contemporary job forms (temporary agency employment), since they intrinsically neglect employee preferences and therefore the impact of control over working-time.

Conventional descriptions of job forms use pay, mobility among job tiers, and job security as the primary criteria in distinguishing between job forms. We have proposed an alternative hypothesis wherein we relegate these factors to an industry level which

over-shadows all job forms. For us, differences in intra-occupational job form divisions may be explained by other working condition variables and by employee preferences. As stated in Propositions 1 and 2 of Chapter 5:

Proposition 1:

Temporary agency employees when compared to permanent employees of a large firm will perceive their job form as offering greater control over their working-time.

Proposition 2:

Temporary agency employees when compared to permanent employees of a large firm will show a greater preference for control over their working-time.

Our hypotheses can be formulated as below:

Temporary agency participation =
f(control over working-time, preferences for control over working-time)

RESULTS OF TESTING THE PROPOSITIONS

We test this hypothesis as well as the more conventional demand-sided hypothesis using logistic regression, wherein we can test the predicting capacity of independent variables for participation in a group. Our independent variables are those indices set out in Chapter 9 as well as other binary preference variables to be described below. Our binary dependent variable is defined as participation in the temporary agency (1) and non-participation (or participation in the large accountancy firm), (0).

The binary dependent variable TEMPORARY EMPLOYMENT PARTICIPATION and the independent variables were tested for significant predicting power in a forced single

entry logistic regression. Table 10.1 summarises the results of these regressions.

Table 10.1
Constructing a Model: Testing the Predictive Power of Indices

Dependent Variable: TEMPORARY EMPLOYMENT PARTICIPATION

FORCED SINGLE ENTRY

Statistically Significant Variables	Coefficient B	Wald Statistic	sig	R	exp(B)
TIME CONTROL	0.8004	21.4017	0.0000	0.2856	2.2265
MOBILITY	-1.6255	43.2944	0.0000	-0.4162	0.1968
Other Variables					
OTHER CONTROL	0.2384	2.2653	0.1323	0.0334	1.2692
JOB SECURITY	-0.0274	0.0288	0.8652	0.0000	0.9729
INCOME	0.0137	0.0070	0.9332	0.0000	1.0138

n = 222

Table 10.1 shows that we can reject the null hypothesis that TIME CONTROL and TEMPORARY EMPLOYMENT PARTICIPATION are not dependent. More specifically, the odds of predicting participation increase as control over working-time increases (exp (B) > 1 and B>0). This result supports our Proposition 1 above, that the temporary job form will be perceived as exhibiting greater degrees of control over working-time. This is a necessary condition for a theory that preferences for control over

working-time can influence job form choice, since the job form must accommodate for that preference. It appears here that temporary employment offers to the employee greater control over working-time.

There is also evidence that temporary work will exhibit less opportunity for advancement. As MOBILITY increases, the odds of predicting participation decrease ($\exp(B) < 1$ and $B < 0$). This result supports more conventional analysis of temporary work, wherein they suggest that one of the unappealing aspects of temporary work, an aspect which places it in a traditional secondary labour market segment (See Doeringer and Piore, 1971), is the inability to be promoted or to increase one's responsibilities.

However, Table 10.1 also gives evidence against the conventional demand-sided theories of temporary work. It suggests that JOB SECURITY is not a significant predictor for participation in temporary employment (significance of the Wald statistic is = 0.8652). We cannot reject the hypothesis that JOB SECURITY and TEMPORARY EMPLOYMENT PARTICIPATION are independent. This is important as job security is one of the key elements in distinguishing a segmented secondary level job form.[1] Recall, the Atkinsonian model defines temporary employment by the demand-sided issues of the firm with regard to the firm's demand for numerical flexibility. This does give support for our hypothesis that job security may be an industry level phenomena.

Our index INCOME represents opinions about levels of income, and Table 10.1 suggests

[1] This result does not occur because our index takes into account the value of job security. After running a logistic regression on an index constructed from Security_1 and Security_2 this new JOB SECURITY index also was insignificant in predicting temporary employment participation.

that opinions about income are not good predictors of TEMPORARY EMPLOYMENT PARTICIPATION. In other words, we cannot reject the hypothesis that INCOME and TEMPORARY EMPLOYMENT PARTICIPATION are independent. This is evidence against the conventional theories which link organizations like temporary firms to secondary labour markets because of their income. It appears that opinions about income in both the temporary firm and the large firm are not different.

A more direct analysis was made on incomes between the two job forms. Direct self-reported levels of income were analyzed between the two groups using crosstabulation and the Chi-Square statistic. Table 10.2 reports our findings.

Table 10.2
Job Form by Levels of Income

CROSSTABS

	£ per annum (thousands)					
	<9	9-18	18-36	36-60	Total	
Temporary Firm	14 (7)	38 (19)	46 (23)	2 (1)	100 (50)	Per cent (number)
Large Firm	11 (19)	45 (78)	35 (60)	10 (17)	100 (174)	

χ^2 = 5.04413 significant at 0.1686 with 3 degrees of freedom
n = 224

It is apparent from Table 10.2 that reported levels of pay are not significantly different between job forms. This result, coupled with our previous results, gives strong evidence that, as far as pay is concerned (another major distinguishing factor between a primary labour market segment and a secondary labour market segment for demand driven

models), temporary agency employment in the accountancy occupation can not be relegated to the periphery. This suggests that pay, like job security, may be an occupationally determined working condition, rather than a job form determined working condition.

The results of these first tests show that there is support that divisions in working conditions between temporary agency employment and large firm employment can be described by MOBILITY and TIME CONTROL. This supports our Hypothesis 2. Because JOB SECURITY and INCOME are not good predictors of TEMPORARY EMPLOYMENT PARTICIPATION this is evidence against segmentation in the demand-sided sense[2].

PREFERENCES

We now directly measure the respondents preferences over their working conditions. We asked the respondents to tell us which two aspects of work they value (or would value) the most. These were selected from nine items regarding work. The two items selected as the most valued were not ranked, therefore carry the same weight. The responses were used as binary independent variables (Yes or No), in a logistic regression to test whether differences in reported preferences were significant predictors of TEMPORARY EMPLOYMENT PARTICIPATION. The items and the results are listed in Table 10.3.

[2] Although testing for net advantages using reported wages is tempting, several problems hinder doing this. The first problem lies in that differences in wages are not statistically different (see table 10.2). The second problem is that differences in compensation packages are not solely of working-time control. Temporary agency employment also is reported as offering less chance for mobility. Therefore, less mobility is a disadvantage. This means that the trade off, producing equal advantages, might be greater control over working-time for less mobility.

Table 10.3
Constructing a Model: Testing the Predictive Power of Preferences

Dependent Variable: TEMPORARY EMPLOYMENT PARTICIPATION

FORCED SINGLE ENTRY

Statistically Significant Variables	Coefficient B	Wald Statistic	sig	R	exp(B)
I VALUE CONTROL OVER ...					
WHICH WEEKS OF THE YEAR I WORK	1.0559	9.8736	0.0017	0.1817	2.8745
CHOOSING WHO I WORK WITH	-1.0076	5.8295	0.0158	-0.1268	0.3651
Statistically NOT Significant Variables					
I VALUE CONTROL OVER ...					
WHICH HOURS OF THE DAY I WORK	-0.5251	1.8102	0.1785	0.0000	0.5915
WHICH DAYS OF THE WEEK I WORK	-.01427	0.0458	0.8305	0.0000	0.8670
THE TOTAL NUMBER OF HOURS I WORK IN A WEEK	0.5931	2.2727	0.1317	0.0336	1.8097
THE LOCATION THAT I WORK FROM	-0.4550	0.4890	0.4844	0.0000	0.6345
THE TYPES OF TASKS THAT I PERFORM	0.1611	0.2494	0.6175	0.0000	1.1748
THE AMOUNT OF WORK I MUST COMPLETE	0.8958	1.8059	0.1790	0.0000	2.4492
THE SETTING OF DEADLINES	0.1771	0.1425	0.7058	0.0000	1.1938

n=223

Table 10.3 supports our Proposition 2. It shows that a reported preference for CONTROL OVER WHICH WEEKS OF THE YEAR THAT ARE WORKED will increase the odds of predicting TEMPORARY EMPLOYMENT PARTICIPATION (coefficient B > 0 and exp (B) > 1). Temporary employees are exhibiting a preference for control over working-time greater than the large firm employees. This is a necessary condition for supply-side job form choice via control over working-time. Interestingly, there is not a greater preference for control over working-time in all of the time units. This highlights the importance of carefully distinguishing the time unit in the variable.

We also analyzed differences in preferences for control over working-time using a binary independent variable which records the number of respondents who choose two items related to time as preferred. We labelled these respondents TIME-SENSITIVE (Other respondents were considered TIME-INSENSITIVE). Using a crosstabulation analysis Table 10.4 reports our results when comparing the temporary employees with the large firm employees.

Table 10.4
Job Form by Time-Sensitivity

CROSSTABS

	Time-Insensitive	Time-Sensitive	Total
Temporary Firm	72 (36)	28 (14)	100 Per Cent 50
Large Firm	89 (155)	11 (20)	100 per cent 175

χ^2 = 7.08353 significant at 0.0078 (after Yeates correction) with one degree of freedom.
n = 225

Table 10.4 shows that temporary firm employees are more time-sensitive than employees in the large firm. This, too, supports our Proposition 2.

Control over CHOOSING WHO I WORK WITH is also a significantly useful predictor of TEMPORARY EMPLOYMENT PARTICIPATION. However, here temporary employees value this less than large firm employees (coefficient $B < 0$ and $\exp(B) < 1$).

It may be the case that preferences are being reported for only those items that are present in a job form. The possibilities for an instrument (the questionnaire) being biased in this way can be tested. For example, although there is no significant difference in preference for CONTROL OVER THE TYPES OF TASKS PERFORMED between the temporary employee and the large firm employee, this element is still highly valued by the temporary employees; 56 per cent of the temporary employees reported a preference for this. However, only 12 per cent reported that they have CONTROL OVER THE TYPES OF TASKS PERFORMED[3]. So that for this item, although it is not present, preferences are still being reported.

We also measured respondents preferences over other working condition items. We asked the respondents to report their preference for the two items that, if increased, would improve their situation. These were selected from 12 items. The relevant responses are reported in Table 10.5.

[3] Similar numbers were reported by the large firm employees; 52 per cent preferred CONTROL OVER TASKS PERFORMED and 20 per cent had CONTROL OVER TASKS PERFORMED.

Table 10.5
Constructing a Model: Testing the Predictive Power of Preferences 2

Dependent Variable: TEMPORARY EMPLOYMENT PARTICIPATION

FORCED SINGLE ENTRY

Variables Statistically Insignificant	Coefficient B	Wald Statistic	sig	R	exp(B)
THE MOST IMPORTANT ITEM ...					
AN INCREASE IN PAY	0.2519	0.6150	0.4329	0.0000	1.2864
AN INCREASE IN JOB SECURITY	0.0316	0.6071	0.9331	0.0000	1.0321
A CHANGE OF MY JOB LOCATION	-0.7828	1.9516	0.1624	0.0000	0.4571
AN INCREASE IN MY RESPONSIBILITIES	0.4830	2.1012	0.1472	0.0206	1.6209
AN INCREASE IN THE CONTROL OVER THE TYPES OF TASKS	0.1704	0.2500	0.6171	0.0000	1.1858
A CHANGE IN THE PEOPLE I WORK WITH	-1.1303	2.2133	0.1368	-0.2099	0.3229

n=222

The most relevant results from Table 10.5 point against the conventional hypotheses of the demand-driven Atkinsonian type model. We can reject the hypothesis that preferences for INCREASES IN JOB SECURITY are dependent of TEMPORARY EMPLOYMENT PARTICIPATION (significance < 90). Again, our analysis of labour market segments does not neglect differences in employee preferences across job forms. We look not only at the level of JOB SECURITY in an industry but also at the value

placed on that level by employees in different job forms. For even if JOB SECURITY is lower in one job form compared to another (in our case we can not accept this hypothesis), it is essential to evaluate the employee's preference, or lack of preference, for JOB SECURITY. If it is not preferred, the lack of JOB SECURITY becomes irrelevant to that employee. This is critical in testing the relevance of the levels of all items of working conditions, and the importance of what other benefits a job form might provide, like control over working-time.

Table 10.5 also supports our contention that income may be an occupationally or individually determined aspect of work not a job form aspect. This argues against the conventional demand- sided models, since we can reject the null hypothesis that a preference for an INCREASE IN PAY is not independent of TEMPORARY EMPLOYMENT PARTICIPATION.

THE MODEL

Our model can now be expressed as:

$$T_e = f(T_c, C_p, M) \quad (+, +, -)$$

Where:

T_e = Temporary employment participation
T_c = Control over working-time
C_p = Preference for control over working-time
M = Level of Mobility

These outcomes support the thesis that elements of working conditions other than those conventionally used to describe labour markets may be more appropriate for some of the

contemporary labour market segments and organizations (temporary agency employment). We point to the aspects of change that are improving the availability and preference for control over working conditions (the influences creating this changes were discussed in Chapter 2). Here we assert that this evolution of preferences may be manifesting itself in contemporary organizational phenomena like the temporary agency.

The above has suggested that only some of the conventional elements used to distinguish between a "primary" labour market segment (the large accountancy firm) and a "secondary" labour market segment (the temporary agency) are relevant, specifically, the lack of available occupational MOBILITY. Most importantly, it has suggested that TIME CONTROL can be used to describe temporary agency employment and that preferences for CONTROL OVER WORKING-TIME are also important predictors of temporary employment participation. This is the basis of our hypothesised model.

TESTING THE MODEL

Using the constructed model we now test how well the model performs. Because our hypothesis concerns both elements provided to the employee via a particular job form and the preferences of employees, it will be instructive to look for interaction terms which might more easily and more accurately express the concepts we have put forth. Since this thesis is looking at a relatively untested phenomena, control over working-time, part of its aim is to construct an informative model of control over working-time in different job forms. This is why our model is improved here.

In Table 10.6 the results of our hypothesised model are given using step wise logistic

regression. This is done so as to evaluate the levels of improvement the variables give to the initial model and the goodness of fit of the model. The Likelihood Ratio test was used for criterion in determining if variables should be removed. This is computationally more intensive but generally considered a better method in step wise selection.

Table 10.6
Testing the Supply-Side Model

Dependent Variable: TEMPORARY EMPLOYMENT PARTICIPATION

FORWARD STEPWISE

Steps	Coefficient B	Wald Statistic	Sig (Wald)	R	Chi-Square Improvement	Sig (χ^2)
1 TIME CONTROL	0.7785	19.6656	0.0000	0.2725	24.073	0.0000
2 PREFERENCE FOR CONTROL OVER WEEKS OF THE YEAR WORKED	0.9644	7.3206	0.0069	0.1496	7.225	0.0072

Variables rejected
None

Model Statistics

	χ^2	D.F.	Sig.
-2 Log likelihood	206.566	221	0.7486
Goodness of Fit	239.775	221	0.1839

n=222

These results confirm the previous tests of Propositions 1 and 2. There is a significant predicting power of the model for each term in the model for TEMPORARY EMPLOYMENT PARTICIPATION. But, how well does the model fit the data? There are various ways to asses the goodness of fit of the model. Table 10.6 reproduces the pertinent statistics. The probability of the observed results given the parameter estimates

is given by the likelihood. We use -2 Log Likelihood to test the null hypothesis that our model fits perfectly. Since the significance level (0.7486) is large we do not reject the hypothesis that the model fits. The Goodness of Fit statistic leads to a similar conclusion. Again the significance level is large (0.1839). Even though it is not as large as the Log Likelihood test, we still can not reject the hypothesis that the model fits.

In evaluating each independent variable, we can see that the level of TIME CONTROL, with an improvement of the Chi-Square of the model equal to 24.073, is greater than the improvement of the model for the PREFERENCE term. However, in both cases we can reject the hypothesis that the coefficients for either variable are equal to zero. The total model Chi-Square improvement is equal to the two added together, 31.298, and its significance level is also greater than 99 per cent.

Using a more direct analysis, the model correctly predicted 26 per cent of those respondents who participate in temporary employment. Furthermore, of the temporary employees there were 20 per cent of the cases which had a predicted probability greater than 50 per cent.

A MORE DETAILED MODEL

Having established the validity of the model, we now investigate ways that might improve its performance. Our first step is to test our hypothesis that control over working-time *and* preferences for control over working-time will distinguish job forms by using an interactive term -- a term that takes both of these points into account. We do this by using a newly constructed interaction term that is a binary (or a dummy) independent

variable. This term includes the specific unit of TIME CONTROL (ie weeks of the year) and combines it with preferences for that specific TIME CONTROL. So that cases wherein the respondent gives a positive response about possessing TIME CONTROL[4] and a positive response about preference for that specific time-control, the dummy variable is coded "1", otherwise the respondent was coded "0".

This essentially breaks our index variable TIME CONTROL into its component parts. These component parts, however, will be associated with their preference counterparts. After running several regressions we found two such interactive terms significant. The first was an interactive term that included the level of control over the weeks of the year worked and the preference for control over the weeks of the year worked. We label this WEEKS. The second interactive term included the level of control over the total number of hours worked within a week and the preference for control over the total number of hours worked in a week. We label this independent variable HOURS. The relevant statistics are shown in Table 10.7 below.

[4] If the respondent either "agreed" or "strongly agreed" to having control in a specific time unit they were coded as having control in that time unit. Preference variables were the same as used before.

Table 10.7
Testing a More Specific Supply-Side Model

Dependent Variable: TEMPORARY EMPLOYMENT PARTICIPATION

FORWARD STEPWISE

Steps	Coefficient B	Wald Statistic	Sig (Wald)	R	Chi-Square Improvement	Sig (X^2)
1 WEEKS	1.9928	22.8891	0.0000	0.2960	26.214	0.0000
2 HOURS	2.0557	11.1597	0.0008	0.1960	11.562	0.0007

Variables rejected
None

Model Statistics

	χ^2	D.F.	Sig.
-2 Log likelihood	200.593	222	0.8458
Goodness of Fit	224.024	222	0.4493

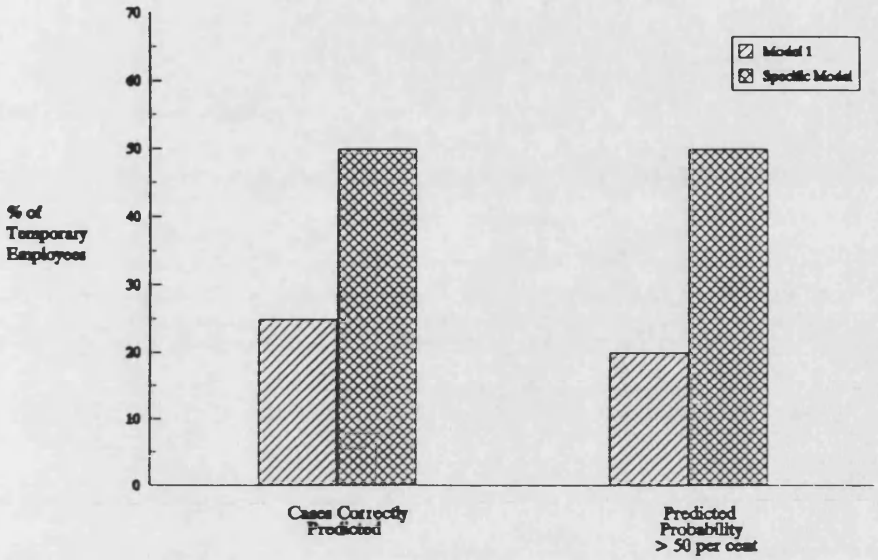
n = 223

From these new results it is apparent that preferences for CONTROL OVER THE TOTAL NUMBER OF HOURS IN A WEEK when combined with having that control becomes a statistically significant predictor of TEMPORARY EMPLOYMENT PARTICIPATION, and that preferences for CONTROL OVER WHICH WEEKS OF THE YEAR ARE WORKED when combined with CONTROL OVER WHICH WEEKS WORKED becomes a significant predictor as well. Since these variables combine levels of time control and preferences the results confirm both Proposition 1 and Proposition 2.

This more precisely specified model also performs better when compared to our first model. For example, the total Chi-Square improvement of this model is equal to 37.775, compared to the 31.293 reported for the previous model. Figure 10.1 below compares

the results from the more direct approaches to assessing a model's appropriateness. In both the number of cases correctly predicted and in the number of cases with predicted probabilities > 50 per cent the more specific model preforms better.

Figure 10.1
Comparison of Model 1 with Specific Model



These results then can be used to rewrite our initial model so that it is of the new form:

$$T_e = f(W, H)^{+\ +}$$

Where:

T_e = Temporary employment participation
W = preference for control over weeks * having control over which weeks
H = preference for control over number of hours * having control over number of hours

It is this final model that incorporates both preferences and availability of control over working-time that gives strong positive evidence for our supply-side control over working-time hypotheses. It suggests a job form choice that has been influenced through

the opinions about control over working-time.

In the next chapter we look for other distinguishing factors, like education and gender, and what bearing they have on our hypotheses and the results of the model, as well as looking at the large internal firm in seclusion for the other job forms differences.

Chapter 11

Data Analysis by Gender, Education and Firm Internal Divisions

Using our refined model, we now test the relevance of larger institutionalised levels of segmentation. We test the model for predicting participation in a temporary agency against other demand-sided models discussed previously. In their labour market segmentation formulation, they suggest that institutions like the large corporate accountancy firm will segment the market place because of their selecting only a specific "type" of person. Particularly common divisions to make are those of gender and education.

If it can be shown that there is a significant difference in gender and education between the large accountancy firm and the temporary accountancy agency then this supports the demand driven model of segmentation. Segmentation in the sense of the larger institutions as described by Level 1 of Figure 3.1 in Chapter 3.

Finally, we look at how the firm internal division may also be described by control over working-time and preferences for control over working-time. We can analyze the

significance of our supply-side driven model in terms of the firm's internal tiered structures.

THE MODEL BY GENDER

The results of an initial assessment of the two firms according to gender are given in Table 11.1 below. A crosstabulation analysis was performed using the Chi-Square statistic to test the significance of the differences.

Table 11.1
Job Form by Gender

CROSSTABS

	Male	Female	
			Total
Temporary	42	58	100 Per Cent
Firm	(21)	(29)	50
Large	63.4	36.6	100 per cent
Firm	(111)	(64)	175

χ^2 = 6.50693 signifcant at 0.0107 (after Yeates correction) with 1 degree of freedom
n =225

Table 11.1 confirms a common assumption about temporary work: that temporary work is predominantly performed by women. The argument continues that it is a demand driven segmentation by institutions which do not allow women to participate, or that it is a society driven pressure for women to be marginalized. At first glance, this notion cannot be rejected by the table above. There is a significant difference in gender between the large firm and the temporary accountancy firm; 37 per cent of the employees in the

large firm are female as are 58 percent in the temporary agency[1].

In light of this, it is instructive to assess whether the women in the temporary agency report a preference for control over working-time, as our supply-side model of temporary agencies developed in the last section predicts. If they show no signs of preference for control over working-time, then there is strong evidence for an institutional demand driven segmentation. However, if there is a significant difference in preference for then one can not reject the idea that there are supply-side influences which have divided the work force. In other words, the preferences for control over working-time by women may play a role in segmenting the market. Results of this assessment are given in Table 11.2.

[1] There is no significant difference in the numbers of married women between the large firm and the temporary firm. In general, differences for control over working-time were nor reported by married respondents.

Table 11.2
Testing Model by Gender

Population	Dependent Variable	Independent Variables	χ^2 of model	Sig
1. All cases	Participation in Temp Employment	WEEKS, HOURS	37.775	.0000
2. Female Temps and all Large Firm Employees	Female Participation in Temp Employment	WEEKS, HOURS	33.968	.0000
3. Female Temps and Female Large Firm Employees	Female Participation in Temp Employment	WEEKS, HOURS	27.797	.0000
4. Temporary Employees	Female	WEEKS, HOURS	2.565	.2773
5. Large Firm Employees	Female	WEEKS, HOURS	1.632	.4421

Table 11.2 reports the Chi-Square statistic for a Logistic Regression procedure testing the model on various populations within our study. It shows the high Chi-Square statistic of the specific model (Line 1 in the table). It also shows high Chi-Square statistics when the model is used to predict FEMALE TEMPORARY EMPLOYMENT PARTICIPATION both in populations which include all large firm employees and only female large firm employees (Lines 2 and 3 in the table). Since the model fits well (as measured by the Chi-Square statistic) for predicting female participation in temporary employment, we can not reject the hypothesis that participation in temporary employment by women is dependent on their preferences for control over working-time.

Furthermore, since the model is not a good predictor of gender (as measured by the low

insignificant Chi-Square statistics of Lines 4 and 5 in the table) we can not reject the null hypothesis that gender and preferences for control over working-time are not dependent. This analysis supports our contention that control over working-time is a major contributor in temporary employment participation, and that although there are more women in temporary employment, they may be participating because of their preferences for control over working-time and the availability of control over working-time provided by the temporary agency organizational form. In general, these results support a supply-side driven job choice theory.

This gender divide can be argued as result of women needing control over their working-time due to imposed societal pressures on their time. Our data does not support this as the model is not a good predictor of gender in either the temporary agency or the large firm.

The gender divide may also be explained as a result of pre-market institutionalized segmentation (via discrimination, lack of opportunities etc.). We believe there may be a degree of this. This, more importantly, calls into consideration the problems of cognitive dissonance (see Festinger, 1954 and Berowitz et al 1987). Women may be "justifying" their institutionalized job form by reporting preferences for it. Their "self-evaluation [may be] based on comparisons with others" pg 138 Festinger). If presumably they would feel bad by reporting a non-desirable difference, their replies will be skewed to report preferences to justify their lower status job-form. However, this argument assumes that temporary agency employment is "bad"; that temporary agency employment needs justification by the participants. We do not make this assumption and therefore

cognitive dissonance, in the form of inacurate replies, becomes less of an issue for this thesis.

THE MODEL BY EDUCATION

Another often argued form of demand driven segmentation is the level of education obtained. It is argued that levels of education form barriers to entry between occupations. Since we are not comparing differences between occupations, we cannot test this hypothesis. It is important to understand that we do not argue against demand driven segmentation of this form between occupations. It seems obvious that this is the case when looking at the qualifications needed in order to participate in various professional occupations, including accountancy. The causes which determine educational attainment and thus segmentation are not at issue here. What we *can* test is whether being qualified by a formal institutional (here proxied by the obtainment of a bachelors degree) rather than experience or professional qualification will segment the temporary employee. Table 11.3 gives evidence about educational differences in our study.

Table 11.3
Job Form by Bachelor Degree

CROSSTABS

	Bachelor's Degree	No Bachelor's Degree	
			Total
Temporary Firm	54 (27)	46 (23)	100 Per Cent 50
Large Firm	81 (142)	19 (33)	100 per cent 175

χ^2 = 13.90839 significant at 0.0002 (after Yeates correction) with 1 degree of freedom
n = 225

Table 11.3 shows that there is a statistically significant difference in obtaining a bachelors degree between Temporary Employees and Large Firm employees. This would support the hypothesis that large firms will only hire those accountants who have been able to obtain a Bachelor's degree. This is a description of a demand or institutionalized segmentation, either brought about by the firm or by the education system. However, due to the evidence above, we must look into other aspects of this segmentation, namely the preference for control over working-time of those employees who do not have a Bachelor's degree. If the respondents who have not received Bachelor's degrees do not show a preference for control over working-time then we must accept strong evidence for the demand-sided segmentation. On the other hand, if there is a significant difference in preference for control over working-time, we must include our supply-side influences into the segmentation model. Table 11.4 reports findings in the same format as we used to test gender, to test the strength of our model taking into account education.

Table 11.4
Testing Model by Education

Population	Dependent Variable	Independent Variables	χ^2 of model	Sig
1. All cases	Participation in Temp Employment	WEEKS, HOURS	37.775	.0000
2. No Bachelor Temps and all Large Firm Employees	No Bachelor Participation in Temp Employment	WEEKS, HOURS	28.981	.0000
3. No Bachelor Temps and No Bachelor Large Firm	No Bachelor Participation in Temp Employment	WEEKS, HOURS	14.744	.0006
4. Temporary Employees	No Bachelor	WEEKS, HOURS	3.027	.2202
5. Large Firm Employees	No Bachelor	WEEKS, HOURS	0.070	.9656

These results are similar to those given on differences in preferences for control over working-time reported by gender. We see that the model performs nearly as well in predicting participation of temporary employees without bachelor's degrees as it does for predicting temporary employment participation in general (compare the Chi-Square from Line 1 with Lines 2 and 3). Furthermore, it becomes apparent that the model performs poorly when trying to predict employees who have not obtained Bachelor's degrees (see Lines 4 and 5 in the Table). This means that although temporary employees are more likely to lack a Bachelor's degree, they are also more likely to prefer control over working-time. This supports our supply-side hypothesis, that job choice may be influenced by preferences for control over working-time.

Because the model does not do well in predicting employees without Bachelor's degreees we cannot reject the null hypothesis that obtaining a Bachelor's degree and preferences for control over working-time are not dependent. This means that we cannot accept that because one does not have a Bachelor's degree one prefers control over working-time. This argues against the idea that preferences for control over working-time are a phenomena linked to being in a "secondary level" segment like "people who do not have Bachelor's degrees". It does not appear that not having a Bachelor's degree fosters the "trait" (see Chapter 3) of desire for control over working-time. Rather, it appears to be an individual preference linked to other individual circumstances rather than broad institutions.

FIRM INTERNAL TESTS OF A SUPPLY-SIDE MODEL

We now look at the firm internal differences in working conditions, primarily control over working-time. This is done by dividing the large accountancy firm into two groups. The first group is designated the "core" group, in the demand segmentation theory sense. The rest of the participants are labelled "others"[2]. This is of interest since our thesis argues that compensation packages may be reflecting preferences and that comparisons of compensation packages should include this element. Our primary goal is to test our Hypothesis 1 about firm internal job forms and levels of control over working-time.

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[2] The division was produced by looking at those aspects of employees that usually designate them into a core group. These are: pay, years of service and job descriptions. The initial division was made by self-reported job descriptions. If the respondents used the word "manager" in their job description they were put into the core group. Because some managers may have neglected to describe themselves in this way, other criteria were also used. If the level of pay and years of service were similar to those who had reported themselves as managers then these respondents were also included in the core group. This process yielded 19 core group members.

Hypothesis 1

In the internal labour market some job forms will include working-time flexibility in their compensation package and others will not, according to the sensitivity to time of the employee.

We test this hypothesis using logistic regression. Our independent variables are those that were used in the previous chapters. The preference variables are also those used before. Our binary dependent variable is defined as CORE GROUP PARTICIPATION (1), and others (0). The population used is only the respondents from the large accountancy firm. Table 11.5 reports on those variables which have significant predicting power in a forced single entry logistic regression, after testing the same variables as used in the tables above.

Table 11.5
Testing the Predictive Power of Independent Variables

Dependent Variable: CORE GROUP PARTICIPATION

FORCED SINGLE ENTRY

Statistically Significant Variables	Coefficient B	Wald Statistic	sig	R	exp(B)
TIME CONTROL	1.3365	20.8077	0.0000	0.3959	3.8059
OTHER CONTROL	1.3224	20.7336	0.0000	0.3947	3.7525
VALUE CONTROL OVER THE TIMES OF THE DAY WORKED	1.9221	9.8990	0.0017	0.2563	4.9714
A CHANGE IN LOCATION WOULD IMPROVE MY SITUATION	1.8700	12.9020	0.0003	0.3011	6.4880

n = 174

Table 11.5 shows that we can reject the null hypothesis that TIME CONTROL and CORE GROUP PARTICIPATION are not dependent. The odds of predicting participation increase as TIME CONTROL increases (exp(B) > 1 and B > 0). Table 11.5 also reports that a preference for CONTROL OVER WHICH TIMES OF THE DAY THAT ARE WORKED can be used to predict CORE GROUP PARTICIPATION. If one shows a preference for control over working-time of this type, the odds of predicting participation increase (exp (B) > 1 and B > 0). This is critical in that our hypothesis asserts that those who prefer control over working-time will exhibit control in their compensation package.

These two results support our Hypothesis 1 above, that different job forms internal to the firm will have different levels of control over working-time due to preferences for control over working-time. Interestingly, it is the times of the day worked that are preferred. Again the importance of the specific time unit is revealed. For, a preference for control over the other time units is not significantly different for this group.

In general, it appears that core group employees have control over their working conditions at higher levels than the rest of the large firm employees. The independent variable OTHER CONTROL was also a significant predictor for participation in the core group. As OTHER CONTROL increases, the probability of predicting participation increases (exp (B) > 1 and B > 0).

The core group also prefers control over choosing the location that they work from. These results are supported by Clark (1992) wherein he shows that higher level managers

will prefer a change in their compensation packages that is more apt to be associated with non-pecuniary elements. They have a desire to obtain greater freedom in their positions. Of course, this can be associated with their work being less a product of how many hours they work as opposed to what they produced. Their work may be more knowledge dense and therefore less likely to be monitorable or necessarily improved by increases in monitoring.

We must also notice the absence of JOB SECURITY, and opinions about INCOME as being a distinguishing variable. As in the analysis of temporary employment participation, job security is not a significant predictor of core job form participation. Again this argues against the Atkinsonian model of job forms.

Having established a significant difference in the preferences for control over working-time, we now investigate whether an interactive model - a model which combines preferences and levels into an interactive term - also has predictive capacity. This is an essential test, since if control over working-time is greater only in general, rather than in the specific time unit, preferred our model loses some of its significance. It is only if a specific type of control is preferred and also present in the compensation package that we can show supportive evidence for our supply-side driven analysis.

The interaction term we use is a binary independent variable. After testing all interactive terms, the only significant term includes the specific form of control over working-time (here CONTROL OVER THE TIMES OF THE DAY WORKED) and combines it with a preference for that time unit. We labell this interactive term TIMES OF DAY. A

positive response about having control and preferring that control are coded "1" otherwise they are coded "0". The results are given in Table 11.6 below.

Table 11.6
Constructing a Model: Testing the Predictive Power of Indices

Dependent Variable: CORE GROUP PARTICIPATION

FORCED SINGLE ENTRY

Statistically Significant Variables	Coefficient B	Wald Statistic	sig	R	exp(B)
TIMES OF DAY	1.9221	12.7548	.0004	.2991	6.8354

Table 11.6 shows that the interaction term TIMES OF DAY maintains its predictive power (the Wald statistic of 12.7598 is significant at above the 99 per cent level). Thus again this supports our Hypothesis 1. It also allows us to rewrite our model for the internal labour market with a more specific term which more accurately reflect our study. Rather than writing our model of the form:

core group participation = (control over working-time, preferences for control)

we can formulate it as:

$$Cp = f(Td \overset{+}{*} Pd)$$

Where:

Cp = Core group participation
Td = Control over times of the day
Pd = Preference for control over the times of the day

Although a model of core group participation that includes independent variables about control in general (like TIME CONTROL and OTHER CONTROL) produces a large model Chi-Square statistic (model Chi-Square = 37.855), the model which only includes the interaction term TIMES OF DAY also yields a significant model Chi-Sauare (model Chi-Square = 11.555).

When the population studied is divided so that one tries to predict employees who are neither a core group employee nor a temporary employee, the control over working-time variables, both preference and levels of control, are significant in predicting participation in the sense that if there is less control or less preference for control the odds of predicting participation decrease.

CONCLUSION

This chapter, as well as the previous two chapters, produce some remarkable results. We find very little support for job security being a viable predictor of job form participation, or that gender and education on their own describe well the differences in job forms. Perhaps because Atkinson's model is developed from a manufacturing perspective, the segmentation described there is not applicable to knowledge based expert individual dense industries like accountancy.

Of course, this is our contention: that demand-sided theories may not be appropriate for the industries which are now a large portion of the labour market; that professional employees, although employed in large organizations comparable to the past giant manufacturing firms, do not have the same firm internal or occupational dynamics, and

may even influence job form attributes through their preferences, since monitoring these knowledge dense jobs can not easily be done. Therefore, a reformulation of segmentation and labour market analysis may need to occur. Redesigned not at the total exclusion of those ideas that were developed for manufacturing, but redesigned to embrace those aspects that are applicable and yet allow newer aspects of work, like control over working-time, that may become increasingly important.

This control over working-time has been shown in the above results to be a good predictor of two of the job forms that we have studied. The temporary employees are linked to control over the weeks of the year worked, and the core employees are linked to control over which times of the day are worked, more so than other aspects of working conditions. Here job form differences can be described by a working condition that has been relegated to the broad term "flexible" work. A term that defies the intricate time units that were so important to our conclusions above. A term that masks the important aspects about this aspect of work.

Interestingly there is a relationship between the core employee and the temporary agency employee. This relationship may be used to draw a labour market group that is quite unique; a grouping of a time-sensitive kind. Here, job forms that have been traditionally viewed in demand-sided labour market segmentation (most notably Atkinson) as two extremes, are united in this supply-side job form choice approach. This highlights the impact an analysis of supply-side issues can have on drawing conclusions about the human resources of organizations and the definitions we apply to them.

PART 4 - Conclusion

Chapter 12

Conclusion

SUMMARY OF FINDINGS

We have suggested that issues surrounding working conditions have the potential to evolve toward issues concerned with more liberal working-time arrangements. More specifically, toward arrangements that might allow the expert employee labour market segment to have more input in the timing of their activities. This is meaningful when one looks at the changes taking place in industries, technology, and demographics: in general, changes in work that influence the control over working-time at work. These were outlined in Chapter 2.

We have deliberately avoided using the word "flexible" to describe these arrangements since this word has come to define only the most severe break from traditional work arrangements as well as the manpower adjustment capability of the firm. We prefer the term "working-time control", which allows for scheduling freedoms in a variety of time units.

In the context of labour market segmentation theory, we address working-time by noting the differences in discussing work in a secondary labour market and a primary labour market on the industrial or occupational level. This is done to place our study in a LMS theory slot, to clarify the type of labour market and labour market segmentation we are discussing. Parts are placed in the primary sector in some levels of LMS theory and others are placed in a secondary level. In short, it is on a primary level when discussing industries and occupations and on a primary/secondary level when discussing mobility chains and core-periphery analysis in the Atkinsonian sense. Most importantly, we include in our discussion the supply-side influences on labour market job choice.

It is this supply-side theory that allows us to discuss the consequences of different preferences for various working-time arrangements. This is accomplished through a time-sensitive analysis using a time-sensitive model which allows work to take place *in time* rather than commodify time. We show how working-time freedom (of many kinds) might be able to increase the utility of those employees who are time-sensitive.

In the internal labour market, control over working-time may increase not only the employee's utility but also his effort. Thus, control at work may not derive solely from competition for scarce labour resources but also from the firm's desire to increase productivity, especially in knowledge based industries. More importantly for this thesis, it is suggested that control over working-time in compensation packages may partially derive from the preferences of employees in different tiers in the internal labour market. This is supply-side stratification of compensation packages.

In the external labour market, market mediated employment firms (the temporary agency) may evolve to capitalize on the preferences of employees for control over working-time. These firms, by decreasing search costs which are inherent in the varying preferences over time of the employees and the firms, provide greater control over working-time. More importantly for this thesis, preferences for control over working-time may shed off a distinctive employee, the temporary agency worker, via an attractive working-time conducive compensation package. This is supply-side job form choice.

In a secondary analysis of past evidence we show that there is evidence to discredit the demand-sided core-periphery analysis of labour market segmentation. This gives some justification for theories and studies of a supply-side nature.

Ultimately, we provide a more intensive framework in which we are able to evaluate more closely the consequences of preferences for working-time. In the results of our study there is support for the propositions which were generated from this framework. There we show some evidence that employees who prefer control over working-time are provided control over working-time as part of their compensation package.

In the external labour market, there was a significant difference between the temporary agency employee and the large firm employee when looking at the aspects of working-time. More than the large firm employees, the temporary agency employees were time-sensitive; they preferred control over working-time and possessed control over working-time, specifically, control over which weeks of the year that are worked. There was no support for job security or income differences between job forms.

in the internal labour market (a large London accountancy firm), there was a significant difference between the core group of employees and the other groups, when looking at working-time. This difference was most marked when looking at control over the hours of the day that are worked. Here, more than any other group, the core employees preferred this type of control and the core employees were provided this type of control in their compensation package. Also, there was very little evidence that job security varied between the internal labour market tiers.

In conclusion, our study shows that two groups of employees prefer control over working-time more than other groups. These are the core employees and the temporary agency employees. We also find that these two groups are provided much greater levels of control over working-time in their compensation package. This, then, suggests that because working-time control is important to them they are seeking compensation packages which include working-time control.

This, then, is a suggestion of supply-side job form choice put forth in the theoretical portion of this thesis. Interestingly, it supports the idea of a new group of employees that prefer control over working-time (the professional expert protean employee), and, surprisingly, links two previously widely separated labour market segments (the core and outer-ring periphery) through the working-time control that they prefer and the working-time control they are provided with in their compensation packages.

IMPLICATIONS FOR PRACTICE

If the expert protean employee is to become an increasingly important part of human

resources, it may be that sensitivity to their working-time arrangements will become an increasingly important aspect of compensation packages for both the employer and the employee to consider. We suggest several ways that control over working-time may effect employee utility as well as employee performance.

Our findings support the idea that the time unit of control need not be the all encompassing flexibility arrangement of flexi-time, and that different employee groups may have different preferences over different time units (here the temporary agency employee over weeks of the year and the core employee over hours of the day). For organizations this means that there is some support for more explicitly including control over working-time as a part of the compensation package. By delineating this aspect of the compensation package, the benefits to both the employee and the employer may be made more readily apparent, and ways to capitalize on their consequences will be more accessible.

It also suggests that if employers would rather use more direct methods in hiring expert temporary employees (other than the market mediated temporary agency), this will be difficult because of the working-time preferences of the temporary employee. A small number of time-sensitive temporary employees may cause delays in finding an appropriate worker.

It also suggests that if employees would rather use more direct methods in finding temporary work (other than the market mediated temporary agency), this will be costly because of the information gathering costs they might incur. Knowledge of a few firms

(if not adequately large enough) may not sufficiently provide work for the time-sensitive employee.

It is only if the necessary working-time conditions are made explicitly clear, with regards to the unit of time, that a one-to-one arrangement can be fully capitalized on by the employer and the employee.

IMPLICATIONS FOR THEORY

As Wareing (1992) suggests, "the variety and extent of "non-standard" working patterns among employees in Britain is increasing..." and "it is important to realize that the so-called traditional workforce are not, by definition, inflexible" (p 89). This thesis has attempted to discern some of these varying working-time arrangements and varying working-time preferences of employees in terms of previously defined labour market tiers and labour market segments.

The implications of the findings to theory are that some employees may have working conditions, or compensation packages, that are tied to the preferences of the employee. This, in essence, re-defines some of the labour market tiers/segments by being aware of the opinions of working-time from the point of view of the employee. It suggests for theory a rethinking of the demand-sided analysis by suggesting the link between preferences for control over working time and job form.

This was accomplished by defining more precisely the job forms under consideration. Not just lumping all temporary workers into one package and all core workers into another. Our theoretical approach was new in that we opened up Winston's time-sensitive model, which allows discussion of work to take place *within* time, to the application of a plurality of personal working-time preferences by redefining his production environment. This produces a graphing technique which could be applied to various time/labour market issues. In our case, we study through this time-sensitive approach the phenomena of temporary work.

The methodology of studying an explicit occupation provided more accurate information about job forms. We believe this study calls for more studies using this approach. If not, some of the occupational and industry level influences which effect all job forms may be incorrectly inferred as job form working conditions.

This thesis supports the idea for studies of job forms to include a wider range of components in the compensation package as viewed by the employee (here we include preferences for working-time). It also, by introducing a delineation between preferences and traits tied to secondary market status, suggests a unique colaboration of LMS theory and neo-classical economics. If studies about segmentation and working conditions do not explicitly distinguish which of these two very different employee attributes they intend to be studying, continuing confusion may prevail.

Most importantly, this thesis suggests a new type of working-time job form. Its primary attribute is the working-time flexibility at work. This, we believe, implies the need to

elevate the working-time arrangements in importance to at least on par with aspects like job security.

SUGGESTIONS FOR FURTHER WORK

The development of the expert protean time-sensitive labour market segment may imply new forms of labour market barriers. For what these new jobs in this primary sector have, more than simply higher pay and higher job security, and primary job related experience (for indeed many of those jobs previously relegated to the lower segment may have both higher pay and higher job security than the new primary sector eg plumber versus accountant or salesman etc), is the working-time freedom which allows personal development in a broad range of categories.

This is important in that it means that rather than the employee being subjected to selling their skills in one market, they can develop new areas that they may foresee as being important to maintain their status (class) position. For the future, this adaptability, specifically -- being able to secure the resources (working-time flexibility) to be able to adapt -- means the continued ability of primary workers to maintain their position in a primary labour market segment. This may be true because, in the future, rapid change and innovation is what may be required to stay competitive in a world labour market. Further research on how these new job-forms and their accompanying working-time freedom imply either greater or lesser mobility among labour market segments would be

most interesting.

Although Orpen (1981) concludes that flexi-time will not likely effect production adversely, there is relatively little research on its potential to increase productivity in knowledge based industries. There is much more room for investigation. However, investigation, as is suggested here, not just into "flexi-time" but investigation into a much broader range of working-time flexibilities, like hours of the day, days of the week, weeks of the year, etc. and their effects on effective work.

The revolution in working-time has not surfaced in the dramatic fashion often linked to flexi-time work and tele-work. It may be, as most societal changes occur, a slow evolution within the traditional institutions of employment -- an evolution towards greater working-time control. And just as we look back on the 16 hour work day of the 19th century in utter disbelief, the people of the 21st century may look back on our present work day and wonder why we were so keen to make others share in our chronometric concepts; it may be a mystery to them.

Appendix A

Evidentiary Tables for Trends in Labour Markets

Table A.1 Estimates of the Civilian Labour Force by Age Group - UK

	Numbers (000)			Growth (%)	
Age Group	1988	1995	2000	88-95	88-00
16-24	6,154	5,021	4,827	-18.4	-21.6
25-44	13,095	14,152	14,368	8.1	9.7
45-59	6,883	7,820	8,123	13.6	18.0
60+	1,478	1,343	1,302	-9.1	-11.9
All ages	27,610	28,336	28,620	2.6	3.7

Source: *Employment Gazette*, April 1989

Table A.2 Civilian Labour Force by Age Group - US

	Numbers (000)			Growth (%)		
Age group	1985	1988	2000	85-88	88-00	85-00
16-24	23,600	22,536	22,400	-4.5	-0.6	-5.0
25-44	59,600	64,938	70,500	8.9	8.6	18.3
45-64	29,400	30,912	44,700	5.1	44.6	52.0
65+	3,000	3,284	3,400	9.5	3.5	13.3
All Ages	115,600	121,670	141,000	5.3	15.9	22.0

Source: Author's table, figures calculated from numbers from *Statistical Abstract of the United States 1990*, table 625.

Table A.3 Civilian Labour Force by Sex - GB

	Numbers (000)				Growth (%)	
Sex	1984	1986	1989	1990	84-89	86-90
Women	10,545	10,886	11,631	11,733	10.2	7.9
Men	15,268	15,321	15,615	15,665	2.3	2.2

Source: Author's table, figures were calculated from April 1992 *Employment Gazette*, table 1, page 174.

Table A.4 Civilian Labour Force by Sex - US

	Numbers (000)			Growth (%)		
Sex	1980	1985	1988	80-85	85-88	80-88
Women	45,487	51,051	54,742	12.2	7.2	20.3
Men	61,453	64,411	66,927	4.8	3.9	8.9

Source: Author's table, figures were calculated from *Statistical Abstract of the United States 1990*, table 625.

Table A.5 - First Degrees Obtained GB, by Sex

Sex	1977	1984	1989	Growth (%) 77-84	84-89	77-89
Women	20,251 (36.8)	27,715 (41.3)	28,309 (43.3)	36.8	2.1	39.7
Men	34,792 (63.2)	39,431 (58.7)	37,096 (56.7)	13.3	-5.9	6.6

Source: Author's table, figures were calculated from *University Statistics 1989-90*, Vol. one, table 21, Feb 1991; and *University Statistic 1987-88* Vol. one, table 21, Dec 1988

Table A.6 - Higher Degrees Obtained GB, by Sex

Sex	1977	1984	1989	Growth (%) 77-84	84-89	77-89
Women	2,466 (22.3)	4,106 (30.3)	6,296 (35.4)	66.5	53.3	155.0
Men	8,570 (77.7)	9,450 (69.7)	11,487 (64.6)	10.2	21.6	34.0

Source: Author's table, figures were calculated from *University Statistics 1989-90*, Vol. one, table 22, Feb 1991; and *University Statistic 1987-88* Vol. one, table 22, Dec. 1988

Table A.7 Undergraduate Enrolment by Subject and Sex - GB

Subject	Sex	1985-86	1989-90	Growth (%) 86-90
Medicine and Dentistry	Women	9,851	9,990	1.4
	Men	12,250	11,481	-6.2
Biological Sciences	Women	8,246	9,929	20.4
	Men	7,087	7,760	9.5
Physical Sciences	Women	4,875	5,739	17.7
	Men	15,163	15,078	-.5
Engineering and Technology	Women	2,509	3,610	43.8
	Men	24,068	25,098	4.2
Architecture and related studies	Women	777	1,059	36.2
	Men	2,267	2,483	9.5
Social Sciences	Women	14,315	16,426	14.7
	Men	16,742	17,865	6.7
Business and Financial studies	Women	3,121	4,044	30.0
	Men	5,074	6,207	22.0

Source: Author's table, figures were calculated using numbers from *University Statistics 1989-90*, table 5, Feb 91; and *University Statistics 85-86*, table 5, Sep. 87.

Table A.8 Graduate Enrolment by Subject and Sex - GB

Subject	Sex	1985-86	1989-90	Growth (%) 86-90
Medicine and Dentistry	Women	594	679	14.3
	Men	907	760	-16.0
Biological Sciences	Women	1,140	1,427	25.1
	Men	1,615	1,746	8.1
Physical Sciences	Women	867	1,049	20.9
	Men	3,635	3,982	9.5
Engineering and Technology	Women	335	391	16.7
	Men	3,000	2,476	-17.4
Architecture and related studies	Women	168	249	48.0
	Men	349	344	-1.4
Social Sciences	Women	1,935	2,222	14.8
	Men	2,237	2,184	-2.3
Business and Financial studies	Women	543	737	35.7
	Men	1,172	1,449	23.6

Source: Author's table, figures were calculated using numbers from *University Statistics 1989-90*, table 6, Feb 91; and *University Statistics 85-86*, table 6, Sep 87.

Table A.9 Enrolment in Institutions of Higher Education - US by Sex

					Growth (%)			
Sex	1980	1985	1988	1990	80-85	85-88	88-90	80-90
Women	6,223	6,429	6,904	7,042	3.3	7.4	2.0	13.2
Men	5,874	5,818	5,946	5,893	-.9	2.2	-.8	0.3

Source: Author's table, figures were calculated from numbers in *Statistical Abstract of the United States 1990*, table 253.

Table A.10 Bachelor's Degrees Conferred by Subject and Sex - US

				Growth (%)
Subject	Sex	1980	1987	80-87
All Subjects	Women	455,800	510,539	12.0
	Men	473,600	480,800	1.5
Business and Management	Women	62,000	112,137	80.8
	Men	124,000	129,019	4.0
Social Sciences	Women	45,300	42,321	-6.5
	Men	58,600	53,864	-7.1
Physical Sciences	Women	5,500	5,673	3.1
	Men	17,900	14,301	-20.0
Architecture	Women	2,500	3,327	33.0
	Men	6,600	5,595	-15.2
Engineering	Women	6,400	12,551	96.1
	Men	62,500	80,523	28.8

Source: Author's table, figures were calculated from numbers in *Statistical Abstract of the United States 1982-83*, table 278 and *Statistical Abstract of the United States 1990*, table 275.

Table A.11 Higher Degrees Conferred by Subject and Sex - US

Subject	Sex	1980	1987	Growth (%) 80-87
All Subjects	Women	157,004	160,263	2.0
	Men	173,692	163,414	-6.0
Business and Management	Women	12,420	22,533	81.4
	Men	55,944	46,061	-17.6
Social Sciences	Women	5,270	4,995	-5.2
	Men	10,136	8,318	-17.9
Physical Sciences	Women	1,355	2,042	50
	Men	6,953	7,282	4.7
Architecture	Women	907	1,094	20.6
	Men	2,311	2,140	-7.3
Engineering	Women	1,237	3,123	152.0
	Men	17,513	23,390	33.5

Source: Author's table, figures were calculated from numbers in *Statistical Abstract of the United States 1982-83*, table 278 and *Statistical Abstract of the United States 1990*, table 275.

Table A.12 Degrees conferred in Selected Professions - US by Sex

Occupation	Sex	1980	1985	1987	Growth (%) 80-85	85-87	80-87
Medicine (M.D.)	Women	3,486	4,814	5,054	38.0	5.0	45.0
	Men	11,416	11,167	10,056	-2.2	-5.3	-7.4
Dentistry (D.D.S or D.M.D)	Women	700	1,051	1,138	50.0	8.2	62.5
	Men	4,556	4,302	3,603	-5.6	-16.2	-20.9
Law (LLB or JD)	Women	10,754	14,421	14,529	34.0	.7	35.1
	Men	24,893	23,070	21,643	-7.3	-6.2	-13.0

Source: Author's table, figures were calculated from numbers in *Statistical Abstract of the United States 1990*, table 276.

Table A.13 Employment Growth in Business and Related Services, 1984 - 1991 GB
(September of each year. Self-employed not included)

		Employment (000)				Growth (%)			
	SIC code	1984	1987	1989	1991	84-87	87-89	89-91	84-91
All industries and services	0-9	20,845	21,778	22,766	21,575	4.4	4.5	-5.2	3.5
Service industries	6-9	13,542	14,684	15,641	15,232	8.4	6.5	-2.6	12.5
Banking, finance etc.	8	1,988	2,308	2,684	2,616	16.0	16.3	-2.5	31.6
Business services	83	1,037	1,285	1,526	1,519	24.1	18.8	-0.5	46.5
Legal services	8350	140	165	189	204	17.8	14.5	7.8	45.7
Accountants auditor	8360	122	146	168	171	19.6	15.0	1.7	40.1
Professional services	8370	198	238	277	290	20.2	16.4	4.7	46.5
Computer services	8394	81	109	133	160	34.5	22.0	20.0	97.5
Renting of moveables	84	104	108	127	132	3.8	17.6	3.9	26.9

Sources: Author's table, figures were calculated from January 1987, October 1989, April 1991, May 1992 *Employment Gazette*.

Table A.14 Employment Growth in Business and Related Services, 1970 - 1986 US

	Employment (000)			Growth (%)	
	1970	1980	1986	1970-1980	1980-1986
Total private sector	57,265	74,835	83,380	30.7	11.4
Business services	1,632	2,996	4,613	83.6	54.0
Advertising	115	140	168	21.7	20.0
Computer software, data processing	na	303	553	na	82.5
Management consulting and public relations	288	324	562	12.5	73.5
Temporary employment agencies	na	569	971	na	70.7
Services to buildings	288	497	636	72.6	30.0
Legal Services	237	503	746	112.2	48.3
Miscellaneous services	590	925	1,410	56.8	52.4
Engineering, architectural	261	523	706	100.4	35.0
Accounting	200	302	432	51.0	43.1
Total business and related services	2,459	4,424	6,769	79.9	53.0

Source: Noyelle, from US department of Commerce, Bureau of the Census, County Business Patterns, US Summary, several years.

Table A.15 - Ratio of Computers to Desk-workers - US

	1984	1985	1986	1987	1988	1989
Ratio	.054	.103	.160	.207	.275	.340

Source: *Statistical Abstract of the United States*, 1990, page 951 table XIII.

Table A.16 - Computer (Electronic Data Processing Equipment) Sales - UK

	1986	1987	1988	1989	1990	1991
Sales in Millions £	3,720	4,924	6,341	7,363	7,805	7,933

Source: *Business Monitor*, 1991, PQ 3302 / PAS 3441, table 1.

Table A.17 Employee Share Schemes, Number of Schemes - GB

Numbers of Schemes *						Change (%)*		
1985			1990			85-90		
Low	Med	High	Low	Med	High	Low	Med	High
70	266	462	90	490	890	28.5	84.2	92.6

Source: Author's table, figures calculated from *Inland Revenue Statistics 1991*, Table 6.1.

Table A.18 Employees Participating in Employee Share Schemes - GB

Numbers of Employees (000)*						Change (%)*		
1985			1990			85-90		
Low	Med	High	Low	Med	High	Low	Med	High
580	1,310	2,040	900	3,215	5,530	55.0	145.0	171.0

Source: Author's table, figures calculated from *Inland Revenue Statistics 1991*, Table 6.1.

* In both tables there are three estimates given for each year and the percentage change. This is done because the original data from the inland revenue system cannot account for those companies that no longer use the share schemes nor can it account for those companies that sign up repeatedly. The low estimates are the numbers given for just that year. The High estimates are the total cumulative for that year and all of the preceding years. The medium estimates takes half the difference between the high and low estimates and adds this number to the low estimate. The per cent changes are respective to the low, medium and high estimates. In speaking with the Inland Revenue Officers for this particular program, they suggested that the authors calculated low estimates would be too low and the High estimates too high, and that both numbers should probably be calculated in the same manner. (In other words, it is unlikely that one should use the high estimate for 1985 and the low estimate for 1990). After exhaustive searching these numbers seem to be the best available for such programs.

Table A.19 Profit Related Pay, Number of Schemes - GB

Number of Schemes		Growth (%)
March 1988	March 1991	
615	1,277	107

Source: Authors table, figures calculated from *Inland Revenue 1991*, table 6.3

Table A.20 Profit Related Pay, Number of Employees GB

Number of Employees (000)		Growth (%)
March 1988	March 1991	
90	350	288

Source: Authors table, figures calculated from *Inland Revenue 1991*, table 6.4.

Table A.21 Employee Stock Ownership Plans, Number of Plans - US (Stock bonus and purchase)

Number of Plans			Growth (%)		
1980	1988	1991	80-88	88-91	80-91
5,009	8,862	9,888	76.9	11.5	97.4

Source: Author's table, figures calculated from unpublished data by *National Center for Employee Ownership, Inc.*, Oakland CA.

Table A.22 Employees participating in Employee Stock Ownership Plans - US (Stock bonus and purchase)

Number of Employees (000)			Change (%)		
1980	1988	1991	80-88	88-91	80-91
4,048	9,076	11,329	124.0	24.8	179.8

Source: Author's table, figures calculated from unpublished data by *National Center for Employee Ownership, Inc.*, Oakland CA.

Appendix B

Formal Exposition of Winston Model

This appendix is mostly an abreviation of Chapter 8 of Winston (1982). The abreviation is used to show the important elements of that model. Of prime consideration is the optimal switching rule (for utility-maximizing individuals) from activity to activity in a time-sensitive way. This appendix is also used to show how we have incorporated Winston's model to labour market segmentation and the time related aspects of job form. We also note those times when we depart from the perspectives of Winston's analysis.

Winston's model employs three activties: two consumption (or non-work activities) and one work activity. Although within the mathematical notation it may appear as if the sequencing of the activities is imposed exogenously, this is not the case. The sequencing itself will emerge from the model.

Accumulated household utility is:

$$U = \int_{t_0}^{t_1} u_1(z_2(x_1(t);t))\ \delta t + \int_{t_1}^{t_h} u_2(z_2(x_2(t);t))\ \delta t \qquad [1]$$

wWhere flows of utility from activity 1, u_1, is a function of the intensity of the activty z_1 and the amount of goods used x_1. The same holds for activity 2.

This utility is maximized subject to the constraint,

$$\int_{t_0}^{t_1} \overline{p_1} x_1(t)\ \delta t + \int_{t_1}^{t_h} \overline{p_2} x_2(t)\ \delta t = \int_{t_h}^{t_T} \overline{w}\ \delta t + Y_p \qquad [2]$$

where the price, p, is exogenous and goods x_i, are time sensitive. They are constrained by the resources, w, flow of wages and Y_p wealth.

The similarities between Winston's model and regular houshold allocation models are abundant. Like the allocation of labour model, the optimal quantity of consumption and labour services is found. However, since his terms are denoted as flows he is also able to distinguish the optimal moments to switch from one actviity to the next (t^*). He allows the timing (dates) of activities into the model. In other words, we have a model of household activities that occurs *within time*.

Most noteably this is accomplished in the $z_i(x_i(t);t))$ term (speed of output). This term denotes the efficiency of production, and Winston suggests that this is time-sensitive since the production environment (Winston uses E(t) to denote this) changes throughout the day (Winston relys heavily on cyclical variations like day to night altering the production environment). This changes the relative efficiency of production of the various goods throughout the day. Which means that "the value of time spent in any one activity will

change over the day" (page 172). This is because the "intensisty" (or speed) of production, $z_i(t)$, changes via the external environment at different times in the day, ultimately changing satisfaction, $u_i(t)$ (The same effect on the value of time is felt through the time-sensitive cost of producing the input $x_i(t)$.). This means that labour services are time-sensitive.

The first order condition for optimal activity choice with respect to consumption activity timing is,

$$u_1(z_1(x_1(t_1^*))) - u_2(z_2(x_2(t_1^*))) - \lambda(\overline{p}_1 x_1(t_1^*) - \lambda(\overline{p}_2 x_2(t_1^*) = 0 \quad [3]$$

rearranging leaves,

$$\lambda = \frac{u_1(t_1^*) - u_2(t_1^*)}{\overline{p_1}x_1(t_1^*) - \overline{p_2}x_2(t_1^*)} \quad [4]$$

and in a different form,

$$u_1(z_1(x_1^*(t_1^*))) - \lambda\overline{p}_1 x_1^*(t_1^*) = u_2(z_2(x_1^*(t_1^*))) - \lambda\overline{p}_2 x_2^*(t_1^*) \quad [5]$$

we now more readily define for each activity i at each moment t of the day T its net utility flow:

$$\mu_i(t) = u_i(t) - \lambda\overline{p}_i s_i(t), \quad i=1,\ldots,m, \; t_o \leq t \leq t_T \quad [6]$$

$\mu_i(t)$ is the value of time spent in activity i at moment t. It is the value of the activity

minus the cost. From this Winston states the choice rule which generates the maximum utility flow:

> "At any moment the optimal choice rule for the household is simply to do what will maximize the net flow of utility, $\mu_i(t)$ -- in other words, to spend time, always, in the activity in which time has the most value. From the m possible activities that can be done at any moment, only one is chosen"(page 172).

At the optimal switching moment, t^*, time will have the same value in both activities,

$$\mu_1(t_1^*) = \mu_2(t_1^*) \qquad [7]$$

These equations are what lead to diagrams like the ones we have used in this thesis.

In our discussions about the timing of activities and the decision to work we are implicitly altering Winston's model by redefining the production environment, E(t). Winston's production environment changes constantly via exogenous environmental rhythms, like the daily train schedule, or the yearly weather conditions etc (page 159). We accept this influence over the efficiency of production but find it too conservative. Therefore, we include in our production environment, elements like one's father visiting, or an offer to play tennis, or an offer to go to lunch. To us these events which alter scheduling are all too common to be left out of the production environment. This has the effect of altering the perspective of the economic agent. Instead of solely planning all units of time from perfect rhythmic foresight, the agent plans different sets of units of time from both rhythmic foresight and production environment abberations.

This means that we also leave Winston's analysis by implicitly redifining the function, $z_i(x_i(t);t)$, the intensisty or speed of production. Since z_i, more explicitly denoted as

$$z_i(t) = f_i(x_i(t), l_i) \quad E_i(t) = z_i(x_i(t), l_i; t), \quad for i = 1, \ldots, m, \quad [8]$$

is a function partially explained by the production environment E(t).

What does this model tell us? It simply says that the agent can maximize utility in time, given an exogenous production environment, by optimally timing his activities. Our discussion in Chapter 4 uses the less formal diagramatic methods of this model. That chapter shows how one set of individuals easily and readily accomodate to the production environment; the efficiency with which they produce/consume activities is not effected by the timing of doing those activities. Their consumption of activities other than work is time-insensitive. They can adjust the timing of activities (t_1^*, t_2^*, etc.) without altering utility because they are not severely effected by the production environment. Therefore rules about working-time set by institutions and organizations have little effect on their activities.

More importantly, we show how another set of individuals are very sensitive to the timing of their activities. The production environment, we implicitly assume, is most constraining to them (for example seeing one's daughter pirouette in a ballet, or taking French lessons). For them, the utility derived from their activities is closely tied to the timing of their activities. These are the time-sensitive employees. Therefore organizational restrictions may cause severe losses in utility (Winston (1987) hints to this on page 581).

This means then that these two groups, when faced with two different production

environments and the different working time flexibilities attached to them (one job form produces a very constraining or restrictive production environment, another job form produces another freer production environment), may possibly choose, if given the opportunity, different job forms[1]. Thus, we have supply-side labour market job form choice and/or supply-side, firm-internal compensation package stratification, and a new application of Winston's "Activity Choice" theory.

[1] Winston (1982, 1987) mentions the possibility of night shift work being selected by a group of individuals who find night work most appealing.

Appendix C

How Temporary Agencies Profit From Search Costs

This appendix gives a brief numerical example explaining one hypothesis on how temporary agencies are able to make a profit. Most of this analysis is based on the time-sensitive analysis developed in Chapter 4.

THE MARKET FOR TEMPORARY WORK WITHOUT A TEMPORARY AGENCY

A firm will pay for a temporary worker so long as the wage offered is lower than alternative forms of filling the need for increased demands of labour services, for example, overtime[1]. It will also pay so long as there is a marginal benefit of the extra labour services. These are the two necessary conditions. More formally, a firm will pay a wage W(temporary) = W*(wage offered to the temporary worker) + search costs of finding temp, so long as W(temporary) < W (overtime). This implies that an increase in search costs then will decrease the wage offered to a temporary worker, W*.

[1] Another reason noted by Abraham (1990) is taking "advantage of outsider's special expertise" which may be an "important factor in many contracting decisions, particularly those involving highly paid workers" (page 10).

The time-sensitive employee will work as a temporary employee so long as the indirect utility derived from work is greater than the utility derived at that point in time from performing non-work activities. More formally, the temporary employee will work for a firm at any moment in time so long as the U(W** - **search cost of finding job**) > U(non-work activities) at that moment (this is the winstonian model). An increase in search costs then will increase the necessary wage to induce the worker to work, and therefor decrease the likelihood of taking a job.

These two statements above imply that the temporary arrangement will occur if and only if W* (Wage offered to the worker) >= W** (Wage necessary to induce worker to work) at the given moment in time (see Gronau, 1986). This condition in turn is dependent on the search costs for both the firm and the temporary worker, and the search costs, as shown above, increase as working-time inconsistencies increase in supply and demand. If search costs are so high for either the firm or the temporary employee so that W* < W** then there will be no employment.

If W* < W** and this condition is primarily due to the high search costs an agency which can lower these search costs may be able to capture the gains. For example:

A firm may be willing to pay a total cost of £56/hr to hire a temporary worker. Of this £56/hr we'll say that £10/hr is search costs. This means that the firm will only offer the temporary employee £46/hr (Total wage = paid wage + search cost).

A temporary worker would be willing to work for £45/hr but one must add on the search

cost of finding the job. We'll say this is £6/hr. This means it will be necessary to offer the temporary worker £51/hr. (Total wage = wage + search cost)

In this example W* (£46/hr) < W** (£51/hr) and the transaction will not occur. In this case it is the search costs which drive the firm and the temporary worker apart. If there were no search costs the firm would offer £56/hr and the temporary worker would demand £45/hr. A negotiated equilibrium would then occur. We'll say at £50/hr.

The temporary agency on the other hand could get £56/hr from the firm and offer the temporary worker £45/hr so long as it made the search costs for both firm and the worker = £0/hr. The difference between the £56 and £45, £11, is the income to the agency. It is because the search costs were prohibitively high that the agency was able to make revenues from this difference. The £11 in revenues minus the costs of the agency are the profits for the agency. The trick for the temporary agency is to (a) offer a temp to the firm that costs just less than W* + search cost (of firm) in finding a temp and to (b) offer a wage W to the tempoarry employee that is just greater than W* - search cost of finding job. This gives them the widest margin between the wage they get from the firm and the wage they pay to the employee.

In some sense it might be argued that these profits are exploitive of the labour market. They do not merely capture the search costs of the agency but they capture the inability of the individual to search efficiently. It could be argued that if the profits of the agency are very high this will induce other agencies to form which could drive down the profits. Competition then might be relied upon to drive profits down to the search costs of the

agency.

Still, because we are talking about human beings performing work, profits like these are very controversial. They must be sensitively addressed as opposed to profits from a train load of coal. This has lead to great debates within the International Labour Organization (ILO) about the acceptability of temporary agencies. Although they recognize the agencies' ability to provide work arrangements where it may not have been provided before hand, the ILO feels it is necessary to regulate these agencies[2]. A neoclassical economist might argue that if the profits are high enough this will attract other entrepreneurs to engage in business. Ultimately the profits are driven down to a point where they just cover the temporary agencies own costs. The final wage for the employee is determined by either a bidding war between agencies for the employee or a bidding war between agencies for the job. More generally, Bakels (1978) notes that the "ethical objection to profit making on labour is, strictly speaking, not directed at the temporary industry as such, but applies to practically every employee in our society" (p 295).

[2] ILO convention 69 addresses the problems of temporary agencies for workers (see Blanpain, 1976, page 412 for more on this).

Appendix D

Sample Questionnaires

In this appendix we give an exact replica of the questionnaires used to solicit opinion's of employees and managers about their working conditions. The first is the Employee Opinion questionnaire and was exactly as seen except that it was folded up in a booklet form. The second is the telephone questionairre used for the managers.

AN AUDIT OF PEOPLE'S OPINIONS TOWARD THEIR WORKING CONDITIONS

Section one

We would like you to think about your work schedule and work structure. We would like to build a good picture of how your work days are constructed. Please answer the following questions with your current work situation in mind. **Please circle the appropriate number.**

		very infrequently	infrequently	sometimes	frequently	very frequently
1.	I work on a temporary basis.	1	2	3	4	5
2.	I work part-time. (Up to and including 30 hours a week.)	1	2	3	4	5
3.	I work full time.	1	2	3	4	5
4.	I work from home.	1	2	3	4	5
5.	I work from a central office.	1	2	3	4	5
6.	I work completely by myself.	1	2	3	4	5
7.	I work with a group of people.	1	2	3	4	5
8.	I use a computer when I work.	1	2	3	4	5
9.	I use the telephone when I work.	1	2	3	4	5
10.	I use my car when I work.	1	2	3	4	5
11.	I use a portable telephone for work.	1	2	3	4	5
12.	I use a Fax machine for work.	1	2	3	4	5
13.	I work outside normal (i.e. 9am - 5pm) working hours.	1	2	3	4	5

14. How many hours do you work on your job?

Average working week _____hours per week.

Average working day _____hours per day.

Section two

In order to give us a more complete picture of your present work situation, we would now like to know how much control you have over various segments of your job. Please circle the appropriate number.

		strongly agree	tend to agree	neither agree nor disagree	tend to disagree	strongly disagree
15.	I have control over the times of the day that I work.	1	2	3	4	5
16.	I have control over the total number of hours I work during an average week.	1	2	3	4	5
17.	I have control over which days of the week that I work.	1	2	3	4	5
18.	In general I have control over which weeks out of the year I work.	1	2	3	4	5
19.	In general, I have control over the location that I work from.	1	2	3	4	5
20.	I have control over the types of tasks that I perform.	1	2	3	4	5
21.	I have control over the amount of work I must complete.	1	2	3	4	5
22.	I have control over the setting of deadlines.	1	2	3	4	5
23.	I can choose who I work with.	1	2	3	4	5

24. Of the nine items in section two above which two do you (or would you) value the most?

_____(Please use the statement number).

Section three

This section allows you to express what are advantages and disadvantages of your present work situation. Once again, may we remind you that this information is both anonymous and strictly confidential. Please circle the appropriate number.

		strongly agree	tend to agree	neither agree nor disagree	tend to disagree	strongly disagree
25.	The amount of support available for my work is an important advantage of my job.	1	2	3	4	5
26.	My ability to combine other activities with my work is an important advantage of my job.	1	2	3	4	5
27.	My ability to work on tasks I like is an important advantage of my job.	1	2	3	4	5
28.	My ability to work the hours of the day that suit me is an important advantage.	1	2	3	4	5
29.	My chances for promotion are an important advantage of my job.	1	2	3	4	5
30.	My amount of job security is an important advantage.	1	2	3	4	5
31.	My ability to work the days that suit me is an important advantage of my job.	1	2	3	4	5
32.	My commuting time and commuting expenses are an important disadvantage of my job.	1	2	3	4	5
33.	The amount of income I receive for my work is an important advantage.	1	2	3	4	5
34.	The surveillance and monitoring of my work by others is an important disadvantage of my job.	1	2	3	4	5
35.	The amount of time left over after work for personal activities is an important advantage.	1	2	3	4	5
36.	The status my job gives me is an important advantage.	1	2	3	4	5
37.	My working peers are an important advantage of my job.	1	2	3	4	5

Section four

We would now like you to think of your life as a whole. We would then like to know if there is anything you might change in your current situation so that it would generally suit your needs better. Please circle the appropriate number.

		strongly agree	tend to agree	neither agree nor disagree	tend to disagree	strongly disagree
38.	A change of my job location would improve my situation.	1	2	3	4	5
39.	An increase in my responsibilities would improve my situation.	1	2	3	4	5
40.	An increase in my control over which hours of the day I work would improve my situation.	1	2	3	4	5
41.	An increase in my control over which days of the week that I work would improve my situation.	1	2	3	4	5
42.	An increase in my control over the types of tasks I perform would improve my situation.	1	2	3	4	5
43.	An increase in pay would improve my situation.	1	2	3	4	5
44.	An increase in my job security would improve my situation.	1	2	3	4	5
45.	A change in the people I work with would improve my situation.	1	2	3	4	5
46.	I would prefer to work different days of the week with no change in pay.	1	2	3	4	5
47.	I would prefer to work more hours with a relative increase in pay.	1	2	3	4	5
48.	I would prefer to work fewer hours with a relative decrease in pay.	1	2	3	4	5
49.	I would prefer to work different hours of the day with a 3% decrease in pay.	1	2	3	4	5

50. Of the twelve items in section four above which two are the most important to you?

_____ (Please use the statement numbers)

Section five

This section gives you the opportunity to express how you generally feel about your present employment situation. Again, all answers are both anonymous and strictly confidential. Please circle the appropriate number.

		strongly agree	tend to agree	neither agree nor disagree	tend to disagree	strongly disagree
51.	My work gives me a feeling of personal accomplishment.	1	2	3	4	5
52.	My work is of great personal importance.	1	2	3	4	5
53.	My income including all assets gives me more than enough money to feed and house my family comfortably.	1	2	3	4	5
54.	My job makes me use my skills and abilities.	1	2	3	4	5
55.	I enjoy the kind of work I do.	1	2	3	4	5
56.	In my line of work there are more jobs available than qualified people to fill them.	1	2	3	4	5
57.	Control over my working conditions was an important determinant in taking my present job.	1	2	3	4	5
58.	My job requires expertise and unique skills.	1	2	3	4	5
59.	I am very satisfied with my current job situation.	1	2	3	4	5
60.	In the future my job situation will be pretty much the same.	1	2	3	4	5
61.	In the next two years I will search for a new job.	1	2	3	4	5
62.	In the next two years I will start again in a new occupation.	1	2	3	4	5
63.	In the next two years I will expect to be made redundant.	1	2	3	4	5

Section six

This section is for general statistics. We remind you that the questionnaire is anonymous, and at no point should you state your name. The answers to this section will enable us to place a perspective on responses to other sections of the questionnaire. Please tick the appropriate spaces.

64. Please indicate your age:

( ) 25 years or under

( ) 26-35

( ) 36-45

( ) 46-55

( ) 56 or over

65. Are you:

( ) male

( ) female

66. Are you married?

( ) Yes

( ) No

67. Do you have any children?

( ) yes

( ) no

68. If so, are any of them under 16?

( ) yes

( ) no

69. Do you have:

( ) high school certificate or equivalent (ie A levels.)

( ) technical certificate/diploma

( ) bachelors degree

( ) masters degree or higher

( ) professional qualification

70. At what age did you leave full-time continuous education?_____

71. Please state your occupation _____

72. Are you:(Please tick as many as are appropriate)

( ) white collar

( ) skilled professional

( ) skilled office help

( ) artist

( ) self-employed

( ) manual labour

73. How long have you been with your present employer? _____Years _____Months

74. What is your net pay?

( ) £500 per month or below

( ) £501 - £800 per month

( ) £801 - £1500 per month

( ) £1501 - £3000 per month

( ) £3001 - £5000 per month

( ) £5001 per month or above

75. Does your spouse work and receive a pay cheque?

( ) Yes

( ) No

Further Comments

Please express any comments you feel we might have missed or not paid enough attention to.

_____

_____

_____

_____

_____

_____

_____

Thank you very much for your time and help in completing the questionnaire. May I remind you that your responses will be treated strictly as confidential. If you have any queries or problems with this questionnaire please do not hesitate to contact Steven Albert at the LSE. London (071) 955 7744.

Telephone Interview Questionnaire

Q 1. Is your main business supplying temporary accountants? Yes No

Q 2. About how many temporary accountants do you have registered with your firm.

Q 3. About how many do you place in jobs a week?

Q 4. Do you place your temps in large firms____
medium firms -------
small firms_____

Q. 5. Would you say that temporary accountancy is a specialized temporary agency field? Yes No

Q 6. Do you specialize in any particular aspect of accountancy? Yes No

If so which?_____

Q 7. Do you consider your self in the same market place as large accountancy firms? Yes No

Q 8. Is the demand for temporary accountants seasonal? Yes No

Q 9. Is the demand for accountants geographically restricted in any way? Yes No

Q 10. Have you seen an increase in applicants in the past two years? Yes No

Q 11. Are there more or less jobs in the last 18 months? _____

Q 12. Why do people come to your firm? _____

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