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**Heigh Ho, Heigh Ho:**

**The Way We (Would Like to) Work Now**

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While the nonstandard, flexible labour contract is nonstandard no more, our understanding of the actual *strategic value* to workers of flexibility as they experience it is still limited. In this paper we examine workers' labour supply decision when choosing among alternative work arrangements ranging from permanent and pensionable to fixed-term, shift work, zero-hour, on-call to gigs. We then introduce the concept of real options and internal markets to analyze contract valuation from the workers' perspective. Using case studies, we examine when working time flexibility can be characterized as providing valuable real call and put options and when desired inflexibility can be revealed via a functioning internal market for hours.

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## **Heigh Ho, Heigh Ho: The Way We (Would Like to) Work Now**

### **I Introduction**

Heigh Ho, Heigh Ho,<sup>1</sup> it's off to work we go – but what does work mean and how can it be valued in the 21<sup>st</sup> century? Sixteen per cent of workers in the US are in non-standard work (Katz and Krueger 2015), and one in three earns income from non-standard employment (Belman and Golden 2000, Cobble and Vosko 2000). That is, these workers do not have a standard 9 to 5 contract, as did the Seven Dwarfs who clocked off at 5:00pm, precisely, and sang *heigh ho* on their way home after digging in the mine all day. The “standard” contract was an implicit promise of lifetime employment with explicit and implicit benefits, a type of contract that arose in the post World War II era and was institutionalised through collective bargaining, labour law and social welfare systems (Kalleberg 2000). Rather, those in non-standard employment, which is more and more the norm, may contend with uncertain hours, little continuity of employment, reduced upward mobility, few or no employer-provided benefits, little legal protection, prohibitions on forming unions, and minimal access to social welfare benefits, such as unemployment insurance (Bernhardt and Marcotte 2000), but may also thrive on the freedom of setting one's own hours, negotiating one's own salary and other terms and conditions of employment.

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<sup>1</sup> <https://www.youtube.com/watch?v=5lYe-0CLXrs>,  
<https://www.youtube.com/watch?v=HI0x0KYChq4>

Of those in non-standard work arrangements, many choose them – to pursue a dream, to have the flexibility to work when and at what they please, to supplement their pre- or post-retirement income, to not be tied down to one job (Torpay and Hogan 2016). Others take on non-standard work because they have no choice (Bernhardt and Marcotte 2000, Golden 2001). Still others who remain in standard employment chafe at the lack of flexibility such jobs impose, but remain out of aversion to risk or for the non-wage benefits the job offers.

The issue of standard (generally understood as inflexible) versus alternative (generally understood as flexible) work arrangements is not new as both workers (Anderson, et al. 2003, Euwals 2001, Blau and Shdyvko 2011, Gielen 2009, Drago et al. 2009, Skinner and Pocock 2010, Waterhouse and Colley 2010) and firms (Askenazy 2004, Connolly and Gallagher 2004, May et al. 2013b), Hopkins and Fairfoul 2014, Berg et al. 2014) desire or require flexibility. And flexibility in any decision has value, either positive when flexibility is equated with opportunity or negative when flexibility is equated with unwanted risk. Quantifying that value, whether from the perspective of the prospective McDonald's worker considering a zero-hours contract or McDonald's considering offering or withdrawing such contracts, remains a challenge. However, it in many cases can be done, and real option analysis as developed in the finance discipline provides a way to value the strategic impact flexibility can have on the individual's human capital resource allocation, that is labour supply, or the firm's human capital acquisition, that is labour demand, decisions. Real options, however, do not provide a mechanism for an employee to signal preferences over hours when work schedules are non-standard but the employment

relationship is. In this setting an internal market on which worker preferences for hours could be signaled could.

Using real option analysis and internal markets we seek to characterize the strategic value of flexibility to the average worker. To do so, in section II we provide an overview of the literature from the perspective of the worker and then in section III, from the perspective of the firm. In section IV we review the real option literature from a labour contracting perspective, showing how a real options framework can reveal implicit value. Sections V – VII examine the individual’s labour supply choice when, given a fixed market wage, contracts are perfectly flexible, when contracts are perfectly inflexible, and when the wage is a random variable as in many gig economy settings, respectively. In section VIII, using the flexibility benchmarks derived and case studies, the option value of flexibility from the worker’s perspective is characterized using real options as a value revealing mechanism and the need for an internal market revealed. Section IX concludes.

## **II Working for a Living<sup>2</sup>**

The demise of the standard labour contract probably began with its establishment in the post World War II era when political and labour union desires coalesced. In the United States politicians wanted to ensure that war veterans had access to education, housing, and unemployment pay, under the GI Bill, and stable lifetime employment should a job be secured, which was also the labour unions’ goal. The standard labour contract, the vehicle designed to provide this employment, was premised on the nuclear family with one

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<sup>2</sup> <https://www.youtube.com/watch?v=lcIK3akktLU>

breadwinner with a spouse and children at home. The contract, which was both a social and a labour contract, facilitated by an internal labour market (Doeringer and Piore 1971), provided continuity of employment in the employer's place of business and under the employer's supervision, while requiring the employee to work, at least, an eight-hour day, five days a week, fifty weeks per year, with anticipated career advancement, compensated overtime, and benefits including health insurance and a company pension. Married women were not expected to work, at least once their children were born, and were not expected to return to the labour force after their children had entered or finished school. The 'marriage bar' existed in many countries, up to the 1950's in the US but as late as 1973 in Ireland, and part time work was rare (Goldin, 2006). This contractual structure provided income security to those lucky enough to be employed on such contracts at the cost of a lack of flexibility, both for workers and firms (Bosch 2004, Kalleberg 2000). Income of the breadwinner was expected to support a family, justifying differential pay rates for males and females.

In 1995, recognizing that the standard contract, while still dominant, was characterizing fewer employment relationships than in the past, the US Bureau of Labor Statistics conducted a survey to supplement its Current Population Survey to determine the prevalence and characteristics of non-standard employment relationships. At that time approximately 10 percent of the work force was in contingent employment where workers were either working as independent contractors, on-call workers, temporary help-agency workers or contract company employees (Cohany 1996). In 1995 most in contingent employment were prime-aged, college-educated white males working as independent contractors in construction or professional and business services.

Demographic changes brought about by married women re-entering the labour force (Anderson et al. 2003, Klerman and Leibowitz 1990) and older workers extending their working lives (Junh and Potter 2006) increased the desire for alternatives to the standard contract (Schmid 2010, Blau and Shdyvko 2011, Gielen 2009). While important, this push for change came not from those who necessarily needed to work but from those who wanted to work in a way that best suited their needs while still availing of employment-related benefits either directly or through a spouse. The trend toward non-standard employment is clearly seen in the United States where, as Katz and Krueger (2016) show, almost all the net growth in employment in the 2005 – 2015 period can be attributed to increases in non-standard employment relationships. They find that the percentage of the labour force engaged on non-standard/alternative work arrangements has risen from 10.1% in 2005 to 15.8% in 2015, and that these workers with alternative work arrangements in 2015 compared with those in 2005 were more likely to be female, older, college educated, in the higher wage quintiles, work for contract or temporary help firms, and work in professional and business services, health, education and other services rather than in construction or manufacturing.

Flexible, alternative work arrangements reflect both choice and lack of choice. That is, some actively seek employment opportunities that enable them to flexibly adjust their hours worked, while others find that alternative work arrangements are the default option when no other work or no other work that enables the worker to meet her/his non-work obligations is available (Golden

2001, Bernhardt and Marcotte 2000, Anderson, et al. 2003).<sup>3</sup> With the rise of alternative work arrangements, arrangements often sought by workers, has come the dismantling rather than the redesign of the internal labour markets, the institutional structure within firms that supported the standard contract's promise of within firm career advancement (Wilthagen and Tros 2004). A side effect of the demise of these internal labour markets has been the reduction of opportunities for internal progression within firms (Broschak and George 2003). Now improving one's skills is left to each worker's individual initiative (Giudetti and Pedrini 2013) and career advancement takes place across rather than within firms. In addition, to access flexible hours, a worker may have to work more or less and accept an unpredictable work schedule preferred by the firm (Danziger and Boots 2008, Waterhouse and Colley 2010, Askenazy 2004) and often generated by scheduling software. The value of flexibility depends on its affect on income security (Skinner and Pocock 2010, Horowitz 2000, Andersen et al. 2007), where the value of flexibility can, but need not, fall as security decreases (Golden 2001). Thus, flexible alternative work arrangements, at least from the workers' perspective, are perceived as a mixed blessing (Hipp and Anderson 2015, Hopkins and Fairfoul 2014, Buddelmeyer et al. 2015).

### **III Harder, Better, Faster<sup>4</sup>**

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<sup>3</sup> In practice, characteristics of observed flexibility differ by gender (May et al. 2013a, Ferber and Waldfogel 2000), age (Blau and Shdyvko 2011, Gielen 2009), education and skills (Anderson et al. 2003, Polivka et al. 2000) and race (Polivka, et al. 2000, Ferber and Waldfogel 2000), and may be beneficial or detrimental to eventually gaining a standard contract (Givord and Wilner 2014).

<sup>4</sup> [https://www.youtube.com/watch?v=gAjR4\\_CbPpQ](https://www.youtube.com/watch?v=gAjR4_CbPpQ)

The lack of flexibility of the standard labour contract, initially considered to be one of its better features, became a binding constraint in the 1970s. Increased competition and uncertainty, more rapid technological change, slower economic growth and high rates of unemployment all conspired to make more flexible work relationships necessary, feasible, and desired by some but by no means all participants on both sides of the labour market, making their introduction possible, but not necessarily straightforward. Institutional structures, such as labour laws that supported the standard contract, required contractual innovation by firms to secure the flexibility they coveted.

If standard contracts are rigid, alternative work arrangements are flexible and diverse, with supervision and employment relationships often divorced from the place of work and for whom the work is done. Alternative work arrangements include part-time contracts, temporary agency and contract company contracts, short-term contracts, contingent work, such as zero-hours and on-call contracts, self-employment/independent contracting and online platform tethered gigs. Standard contracts, precisely because of the social contract under which they were established and the law and custom that supports them, provide job and income security, career progression, etc., but can be costly (Kalleberg 2003) to a firm that requires agility to compete in the market. Alternative work arrangements, in contrast, provide flexibility both for employers and employees alike, but may be insecure (Drache et al. 2015, Wilthagen and Tros 2004, Berg et al. 2014). They allow firms to control costs, to improve efficiency, and to match their just-in-time inventory systems or the peaks and troughs of retail foot traffic with just-in-time labour input (Kalleberg 2003), often using scheduling software



that removes local managerial control over staffing decisions. To introduce alternative work arrangements effectively, firms dismantled their internal labour markets since these more flexible employment structures were incompatible with internal firm career paths (Giudetti and Pedrini 2013). Other internal restructuring by firms in search of enhanced efficiency is often required since fixed teams and other inflexible internal firm structures (Broschak and Davis-Blake 2006, Davis-Blake, et al. 2003, Kalleberg 2003) may be incompatible with a largely transient workforce. When workers on alternative arrangements and permanent workers work together, the firm's human resource structure can create insiders and outsiders (Piori 1986, Lindbeck and Snower 1988) sometimes engendering conflict (Kalleberg 2003). Use of these arrangements, because workers rights are not generally as well protected in non-standard contracting relationships, has enabled unethical yet legal treatment of the low skilled and the marginalised (Drache, et al. 2015) as well as migrants (McCollum and Findlay 2015) who lack the support of labour unions and labour law (Wilthagen and Tros 2004, Berg et al. 2014), all in the quest for higher shareholder value.

#### **IV Options<sup>5</sup>**

While it is now widely agreed that flexibility in any decision has value, quantifying that value remains a challenge. Real option analysis is one way in which it is possible to value the impact flexibility has on allocating human or physical capital resources. Real options originate in the finance discipline and

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<sup>5</sup> <https://www.youtube.com/watch?v=DYApHEUCs8s>

were originally applied to long-term investment decisions where the up-front costs of investment are high and optimal timing is of considerable importance. Traditionally, they are used when making research and development decisions, high cost facility production investments, and energy investment decisions. From a firm's perspective, real options are a particularly valuable decision making tool under conditions where there is a high level of uncertainty. Real option analysis is now being applied more generally to other strategic decisions.

A real option is the right but not the obligation to undertake a business decision and, as such, can and is applied to employment contract types. From a firm's perspective, the application and value attached to the real options approach in deciding what type of employment contract to issue is relatively straightforward. By hiring workers on temporary or zero-hour contracts, the firm undertakes no long-term obligation to retain these workers, thus providing flexibility and limiting obligations and costs associated with permanent contracts. If new information emerges, for example with respect to increased demand or success of a product, or with respect to the quality and capabilities of the worker, the firm can exercise the option to expand/abandon/delay as such uncertainties are resolved. Therefore, downside risks can be minimised while upside opportunities can be exploited.

In the literature, many authors observe that non-standard employment contracts should be viewed as a source of flexibility and can enable irreversible investment decisions to be delayed (see for example Van Emmerick and Sanders 2004, Musselin 2005). Foote and Folta (2002) argue and Bhattacharya and Wright

(2005) confirm that there is more value to hiring workers using temporary contracts at greater levels of uncertainty and irreversibility.

While the real option value to different types of employment contracts is not difficult to see from an employer's perspective, the real option value from an employee's point of view is not as obvious. The general consensus appears to be that employers gain from using non-standard employment contracts at the expense of employees. However, in a review of the effects of non-standard employment contracts on individual workers, Walker (2011) notes that "the task of evaluating non-standard employment is far from straightforward". He also observes that while some workers appear to be disadvantaged by non-standard employment contracts, others appear to be able to use them to their benefit and that workers actually seem to weigh up the costs and benefits of non-standard contracts. While non-standard employment contracts are typically viewed as costly to the worker due to limited jobs security, lower benefits, lack of career progression and uncertain hours, there are also situations where workers can negotiate non-standard work contracts that enhance work/family balance without a decrease in job security or compensation. The presence of competition affects the value of flexibility and as a result, this enhanced bargaining power is likely to be restricted to those workers with greater and scarcer skills who are in high demand.

In order to determine whether there is a real option value to employees from undertaking non-standard employment contracts, it is necessary to identify sources of flexibility and uncertainty. Arguments in favour of such contracts include greater flexibility, an improved work-life balance, increased earning

potential, greater control and the ability to leave the employment quickly. Considering these arguments, it is probable that such non-standard employment contracts might have options embedded in them for workers. For example, given that some non-standard employment contracts give the worker the right but not the obligation to work, it has characteristics similar to a call option. Further, a worker might consider taking on a temporary contract today because even though it is not optimal now, significant opportunities may arise to gain access to a permanent contract or position the worker to get a more desirable, higher paid job (akin to a real option to expand). Alternatively, unlike some permanent contracts, most non-standard employment contracts do not have long minimum notice periods a worker has to give before leaving employment. This can make an otherwise unappealing job appealing as it allows a worker to leave immediately to undertake a better employment opportunity or if the costs of the job begin to outweigh the benefits. The value to the worker would be similar to a put option to abandon. However, many non-standard work arrangements are non-standard in terms of work schedule flexibility rather than in terms of the employment relationship. This flexibility, beneficial from the employer's perspective, is costly to the worker, who would like to be able to signal preferences for work times and hours worked, because of significant differences in net wages at different times of day and days of week, but lacks the mechanism, essentially a market within the firm, to do so.

It should be noted that not all non-standard employment contracts will have a real option value. Workers on non-standard employment contracts are not a homogenous group and whether there are valuable real options embedded in the

contracts to the employee is dependent on what type of subset they belong to. The idea of there being value to employees of non-standard work contracts that is captured by real options and quantified using financial valuation models relies on requirements such that flexibility strategies are both creditable and executable and that individuals will be rational in deciding to execute real options. These requirements again reinforce the earlier claim that the individuals most likely to derive real option value from non-standard work contracts belong to a subset of workers that are highly skilled, well compensated and are least likely to have the need to negotiate flexible work arrangements. Individuals who are most likely to have limited real option value with respect to choice of work contract are lower skilled, lower paid workers who are generally seen not to offer such creditability but who would benefit from a preference revealing internal market.

## **V Somewhere over the Rainbow<sup>6</sup>**

The complexity of real world decision-making can often hide the fundamental choices individuals must make. This is clearly the case in an individual's choice of whether and how much to work in the market. The choice of (market) labour and leisure where individuals or families making joint decisions value income from market (total remuneration including benefits which are dependent on the individual's/family's human capital) and non-labour sources (government programs and investment returns) and leisure where leisure is constrained by unremunerated, fixed-time, but often uncertain activities, at least in terms of their timing, (think of caring for a child or an aged parent, being in education or

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<sup>6</sup> <https://www.youtube.com/watch?v=U016JWYUDdQ>

training, commuting) some of which may be reduced by outsourcing to the market, should income be adequate, or by state provision, is conceptually straightforward when there are no external (think employer imposed or other institutional) constraints on choice.

The ability to transfer unremunerated fixed time activities to the market or to the state also depends on the individual's socio-economic environment. This environment is described by where the individual lives, the market services that can be accessed, the presence or absence of a spouse, the labour force attachment of that spouse, the benefits linked to that spouse's employment, the informal networks to which the individual belongs which can range from LinkedIn or other employment related social network to a babysitting exchange, the proximity to and the relationship with his/her extended family, the availability and reliability of transportation both public and private, government provided social services (elder care, after school programs, etc.) and whether they are means tested or universally provided, the number and age of children and the number, age and health status of disabled children and/or aged relatives, the variability and skewness of other sources of income, among other things.

The labour/leisure choice is a textbook labour supply decision, where here labour supply is contingent on the realization life, rather than work, related uncertainty. If labour markets are perfectly competitive, if she is willing to work at or below the equilibrium wage, even if for just a few hours on just a few days, she will be employed. The world, however, does not conform to the model.

## **VI Shiftwork<sup>7</sup>**

While the standard model of the labour/leisure choice is simple even taking account of random, fixed-time unremunerated activities, this is not the labour market that the potential worker generally encounters. Instead, the labour market in which workers sell their human capital is beset with constraints in terms of the contracts on offer and their ability to negotiate a contract specific to their needs. They range from the “standard contract”, to the zero-hours and on-call contract where a worker agrees to be available for work that she or he can choose to take if it is offered in the case of the zero-hours contract and must take in the case of the on-call contract, to the independent contractor style “gig” where the worker chooses to work or not and there is work or not when the worker chooses to work (think a Task Rabbit or an Uber driver). The ability of workers to vary their hours at will or at all depends on the type of job (independent contract, gig or member of a team), the importance of the workers’ skills to the organization (easily replaced or not), market rigidities (standard business hours, extended business hours, night shifts or split shifts, an hour here or there), administrative rigidities, worker protection legislation or union contract conditions, where in most cases it is the employer rather than worker who determines, within reason and under the specific labour contract and within the confines of labour law, when and how much workers work (Lambert, et al. 2014), subject, of course, to the workers’ willingness to work under those conditions.

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<sup>7</sup> <https://www.youtube.com/watch?v=VfiJEfBNRqg>

Consider the standard contract. In this case the agent has limited choice over when to work and leisure absorbs all the fixed time requirements of all unremunerated activities that, where not provided by the state, cannot be outsourced to the market. Clearly, how well off the individual is under the standard contract and her ideal contract are not the same. A similar choice structure is faced by the agent who is presented with a fixed-term contract, shift work, whether it be 9 to 5, 7 to 3, 3 to 11, 11 to 7 or some variation or combination thereof, part-time work with specific daily or weekly hours, or part-time work with total hours specified and certain, or unspecified and uncertain (possibly a zero-hours or on-call contract), in which case labour hours are a random variable, where in all cases the shift structure and accompanying total remuneration on offer are contractually determined. Faced with such a set of contracts, the agent chooses which is best, keeping in mind that withdrawing from the labour force is always an option.

## **VII Uber Driver<sup>8</sup>**

At the opposite extreme, consider the “gig” worker. For this worker the wage received is random, depends on the time of day, the day of the week, on whom else is working, and what tasks or rides are on offer; that it is fully realised only after the work hours have been completed and that there are no work related benefits. In addition there are fixed and variable costs that must be borne by the worker, leading to a random net wage. The gig worker is, or at least is seen to be by the online platforms, such as Uber and TaskRabbit, a sole proprietor who uses

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<sup>8</sup> <https://www.youtube.com/watch?v=ggczfslrZvg>



their marketing services and agrees to certain work practices. Thus, for the Uber driver, labour choice is completely flexible but income is uncertain.

### **VIII My Way<sup>9</sup>**

The labour market faced by most workers lies between the no flexibility standard contract and the complete flexibility gig economy. Neither the former nor the latter perfectly meet most workers needs, yet individually optimal, rather than flexible, per se, work arrangements are valued by the worker. The value to the worker of being able to set her personally optimal schedule is likely to be contingent on her human and financial capital, the socio-economic environment in which she lives and the constraints imposed by unremunerated fixed-time activities.

A major unremunerated fixed, but variable, time activity is education. Many students need or want to earn money to pay for their education, to support themselves while in education, and/or to save. Because of their very varied schedules, they require employers who are willing to accommodate their work and study schedules that can vary from day to day and week to week depending on classes, assignments, field trips and exams. McDonald's hires very large numbers of students and, whether they are in high school, like the Langford sisters, or college, like David Sawiak, accommodates their schedules while giving them valuable work experience (D'Alessandro 2017) via zero-hour, or zero-hour like contracts, where shifts/hours can be refused. When McDonald's offered its

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<sup>9</sup> <https://www.youtube.com/watch?v=kl4Uh5nOFAg>

workers fixed-time, part-time contracts in the UK, 80 percent of those offered the contracts chose to remain on their zero-hour contracts (Ahmed 2017).

Similarly, those who work for TaskRabbit, Mechanical Turk or Wahve or an agency like Kelly Services, who may take on this type of employment in preference to other work, like Brian Schrier, who lives half the week on his boat in Napa working in San Francisco for TaskRabbit the other half week, and David Cordova, who has found a niche in New York City for his services and relies on his wife for health insurance and other benefits (Zimmermann 2015), or in addition to their regular work, in between other jobs as they search for permanent employment, the most usual case (Katz and Kreuger 2016), while in education or on an internship, like Jonathan Lal (Zimmerman 2015) or after retirement from full-time employment, like William who, as a Tasker, assembles IKEA furniture (Carter 2016) or Karen Arnold who works from home as a Wahve worker in the insurance industry (Farrell 2015), have the ability to determine how much and when they want to work at what tasks and, for some, at what wage. Fixed time activities can be worked around by, for those on TaskRabbit, by only specifying unencumbered hours. The Mechanical Turk allows you to work to your own schedule as long as you meet the deadline specified for the task. While TaskRabbit jobs require the worker to go to the workplace, Mechanical Turk and Wahve jobs are done from home (Raphael 2014). While some of the jobs require physical strength and dexterity (Zimmermann 2015), others just require the right brain power. These employment relationships, the McDonald's zero-hours contracts to the gigs, from the perspective of the worker, are like call options in that they have the right but not the obligation to work. Since these positions can lead to other, more desirable work, for example a

permanent job with a firm for whom one has temped, workers would also hold a real option to expand. And, when the job can be abandoned quickly with little cost, for example if a better, permanent job is found, the relationship contains the characteristics of a put option. In all cases the worker has the option to delay.

In contrast, consider, Jannette Navarro (Kantor 2014), for whom flexibility is a curse rather than a blessing. Ms Navarro a single mother with one child the father of whom is not providing child support, with no immediate family as her parents are both dead. In 2014 she was working at Starbucks as a barista at \$9.00 an hour. She relied on public transportation, a series of busses and trams, to get her son to daycare and herself to work. Her son was in a state-supported daycare program, access to which was dependent on her getting adequate hours. Her hours, which were so erratic that her weekly hours might not meet the requirement for her son's daycare provision and/or the simple necessities of life including food and rent, were governed by Starbucks's scheduling program, which meant she would often get her hours only three days in advance, and if she was scheduled for nights, very early mornings, weekends or holidays she would have to rely on her aunt or friends to take care of her son, which was not sustainable. Moreover, her schedule was such that she could not invest in completing her education, the most effective way to improve her and her son's life chances. Thus, the costs of her unremunerated fixed-time activities were unnecessarily high as a result of her very erratic work schedule, leading to an effective wage much less than \$9.00 per hour. "Flexibility" was not her goal, rather it was a feature of the type of job she was qualified to do which met her employer's rather than her needs, needs her employer did not even know she

had since scheduling was set by a optimizing software program rather than the equally uninformed store manager. Instead, she would have been willing to pay for a reduction in “flexibility” which to her would be equivalent to a reduction in risk. Her willingness to pay suggests that there is a potential gain to both her and to her employer. Making these gains transparent to the firm via an internal market mechanism where workers could “bid” for day/hour combinations that would reveal the “market price” for different schedules, could lead to better scheduling outcomes either through improved software where the “market” data is incorporated into the algorithm or a return to more devolved scheduling which could enhance workers’ work/life balance and, thereby, worker productivity and firm profitability. Her experience is not unique as the work of Henly and Lambert (2015) and Seefeldt and Sandstrom (2015) attest, but its revelation in a New York Times article did lead Starbucks to change its scheduling practices.

At the other end of the income scale are IT Contractors, like Andy D. with in demand specialist skills. He had a two-and-a-half hour commute, each way, by public transportation, and worked very long hours on a seven-month contract developing and integrating new software into the existing system for an international bank. This new software would be rolled out in the bank’s offices worldwide. This required conversations with those who would be end-users at times that suited them. He billed the hours he worked, and he worked in an office with full-time permanent staff as part of a contract team. His pay rate was much higher than permanent staff members, but he and the other members of the contract team had to deliver the work contracted in the time specified requiring very long working days and working weeks for the duration of the

contract which, for operational reasons, gave the contract team a month off mid-contract which he spent vacationing in France. Flexibility, for Andy, was achieved not on a day-to-day basis within a job, but over the course of the year and across contracts with different employers: the call option aspect of flexibility was not having to take all contracts offered and being paid enough to afford to invest in the benefits, such as health insurance, a pension, and vacations, that were, in the past, paid for by the employer (Quantnet.com 2010).

## **IX Conclusion**

The standard labour contract was in many ways an attempt to impose normalcy on a world still riven by the effects of two world wars and the Great Depression. Under the standard contract, simultaneously a labour and a social contract, a man would be able to provide for his family, have secure employment throughout his life, and retire on a comfortable pension. All was well with the world. The problem was that the world did not conform to the standard labour contract, the rigidity of which was neither good for firms nor for workers. It also created unachievable expectations since it was designed to provide for the worker, body and soul. It was, however, enshrined in labour law. Now both workers and firms desire greater flexibility, but the flexibility workers think they want and need is not necessarily the flexibility firms think they want and need. And firms no longer have the ability, should they ever have had, of providing the social contract the standard contract demands.

By specifying the option value of flexibility or inflexibility to a worker, this paper makes clear what a worker has to give and the constraints and source of those

constraints the worker faces. It also makes clear the costs of accepting a less than optimal contract. These costs point to a potential gain that is not exploited. Explicitly characterizing that gain in terms of real options or internal markets can reveal to the firm how it, in better accommodating its workers, can improve worker productivity, worker satisfaction, and, importantly, its profitability.

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