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## **Employment Change in Japan, 1991 – 2003: An Industry and Establishment Analysis**

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## **ABSTRACT**

The focus of the paper is employment change in Japan for the period 1991 -2003, making use of aggregate data relating to the engagement and separation processes. Three themes are examined: inter establishment transfer; the use made of contingent labour; and the extent to which larger establishments externalise their adjustment to changes in labour demand by making use of smaller establishments. Transfer is found to be more prevalent in some industries than others. However, its incidence has not changed over time. There has been an increased in the number of part time employees hired, especially within the tertiary sector post 1998. There is no evidence which supports the hypothesis that larger establishments adjust in the manner suggested.

**Keywords** Japan, Employment Change, Engagements, Separations, Transfers, Contingent Labour

## 1. CONTEXT AND MOTIVATION

Unemployment rates in Japan changed dramatically in the period 1991– 2003, culminating in a rate of total unemployment of 5.4 percent in 2002, a rate unprecedented since the post World War II recovery period of the late 1940s. In the interim, like other economies, Japan has experienced the vicissitudes of the business cycle. However, in marked contrast to the economies of the United Kingdom and the United States of America for example, recessions in Japan have been growth recessions, manifest more in reductions in the rate of growth of GDP than in increases in the rate of unemployment (Flath, 2005; Genda & Rebeck, 2000). Indeed, the influential OECD Jobs Study (1994) was positive in its commendation of Japanese employment growth, noting the manner in which the well developed internal labour market of major companies facilitated the successful implementation of corporate strategies which sought to shift production to higher value-added products.

Before the end of the decade, however, the OECD was to become more critical of this central labour market institution, arguing that it both compounded the macro-economic problem of declining aggregate demand during the latter part of the 1990s and hindered the establishment of a more flexible labour market, which was seen as an important policy panacea (OECD, 2000). Seniority based (effectively age dependent) wage structures were causing labour costs to rise, making companies less price competitive. As a consequence, both product demand and labour demand declined further. Within companies, lifetime employment practices precluded the redundancy adjustment option. Although this system of corporate governance operated to the advantage of ‘insiders’, it was to the disadvantage of ‘outsiders’. As a consequence, both the rate of unemployment of new entrants to the labour market and the duration of unemployment of those already unemployed increased.

Many commentators (e.g. Flath, 2005) see the period 1991-2003 as a “single episode...”, a recession “punctuated by two rather anaemic and unsustainable expansions” (p 105). Year on year percentage changes in GDP and the rate of total, female and male

unemployment for the period 1986 - 2003 are graphed in Figure 1. (All the figures in the paper are brought together in Appendix Three.) The increases in both male and female unemployment rates post 1990 are most evident. Even the short term expansion between 1993 and 1996 does not arrest the increase in the unemployment rates.

This paper examines employment change during this traumatic period in recent Japanese economic history. The presence of corporate internal labour markets dominate the Japanese labour market. Furthermore, the corporate manpower strategies which determine recruitment, selection, deployment, development and remuneration within these internal labour markets structure the external labour market, effectively creating a dual labour market. Within these two sectors, the nature of labour market participation and the experience of work differ markedly.

Flexibility is an integral feature of the corporate internal labour market. However, it operates by a process of inter-establishment/organization transfer, managed as a consequence of contracts negotiated by the managers of the employing units involved. The first set of questions which motivate this investigation, therefore, relates to this unique phenomenon of transfer: How prevalent is it? To what extent does it vary across industries? To what extent has its incidence changed over the period?

Numerical flexibility, facilitated by the recruitment and employment of proportionately more contingent workers, would appear to be the OECD's preferred route to more efficient adjustment. There is evidence of increasing use of this type of labour prior to the 1991 – 2003 period. The second set of research questions relates to the use of a contingent labour force, reflected in the employment of women and part time workers: To what extent is there evidence of an increased use of contingent labour, as defined? Is there any evidence of inter industry differences of changes in the employment of this type of labour?

Conventionally, in dualist-type economies, adjustment comes about more through change in small and medium sized organizations than in larger corporations. As product/service

demand declines, sub contracting from larger firms to smaller firms is reduced and employment in the latter contracts. Conversely, as product/service demand increases, sub contracting from larger firms to smaller firms increases, and employment in the latter expands. Accordingly, changes in employment levels occur more in smaller firms than in larger firms, and this is reflected in inter organizational differences in engagements and separations. This motivates the final question addressed in the paper. As the economy changed over the period 1991 – 2003: To what extent is there evidence compatible with the hypothesis that larger establishments made use of smaller establishments to facilitate their adjustment?

## **2. RELATED LITERATURE**

Conventionally, if somewhat stereotypically, three features characterise the employment system in the dominant, mature Japanese corporation viz. prospective recruitment and selection of new entrants to the labour market; continuous training and re-training for those selected to enter the structured segment of the corporate internal labour market; and, for those within this structured internal labour market, long term, if not lifelong employment, integral to which is a wage payment system where age/seniority is of central importance (Watanabe, 2000).<sup>1</sup> These features have implications not only for the deployment and development of labour within this type of organisation but also for the manner in which the external labour market operates. As these organisations define and manage their internal labour markets, so, as a consequence, they structure the external labour market, effectively creating a dual labour market, with a ‘primary’, relatively privileged, sector, which they dominate, and a ‘secondary’, relatively disadvantaged sector. Accordingly, this review of related literature is in two sections, the first examining corporate internal labour markets and their consequences and the second examining how organisations adjust to changes in demand.

## ***2.1 Corporate Internal Labour Markets and their Consequences***

According to Ahmadjian and Robinson (2001), “permanent employment became one of the cornerstones of the post war Japanese economic system and came to be viewed as a distinctly Japanese way of organising employment.” (p 623). However, there are conflicting views of its underlying rationale. One perspective associates it with economic conditions, necessary and sufficient to meet the complementary requirements of promoting efficient acquisition and use of company specific skills and providing incentives to employees (Aoki, 1990: Flath, 2005). By contrast, Billesbach and Rives (1985) emphasise how “various cultural and environmental factors within Japanese society have contributed to the success of lifetime employment” (p 27). Schregle (1993) argues that “(j)ob security enjoys a high priority among Japanese social values. Termination of employment by the employer, for whatever reason, except under very rare and genuinely exceptional circumstances, is an act which is frowned upon and which is considered disgraceful and objectionable” (p 510). Ahmadjian and Robinson themselves write of permanent employment as a “moral imperative” (p 624.)

The companies which dominate the primary sector of the economy do not seek to recruit to specific vacancies. The selection criteria they employ, therefore, relate more to organisational acceptability rather than functional/task specific suitability. Accordingly, only those with the appropriate pre-labour market attitudes and credentials from schools/colleges/universities are targeted and recruited. As a consequence, those job seekers not chosen – notably the majority of female new entrants to the labour force - are required to find employment in other segments of primary sector organisations where the characteristic employment relationships noted above do not prevail, or within other workplaces, such as small firms.

Training and re-training are integral features of the employment system in firms in the primary sector. Such are designed to meet the needs of intra-organisational flexibility and personal promotion, and are enterprise specific. This mitigates against occupational mobility within the external labour market, thereby both hindering the efficient operation of the labour market and increasing the private and public costs of labour market

adjustment. As a consequence, structural unemployment, attributable to geographical and occupational immobility, is a constant feature of the Japanese labour market (Tsukuda and Miyakoshi, 1999). Across developed capitalist economics, inter-sectoral labour mobility is inherently imperfect, and subject to adjustment lags. For example, workers may have self-selected into firms/industries more compatible with their different endowments and natural work abilities; there may be imperfections consequential of a spatial concentration of industry/occupational opportunities; and there are significant adjustment costs associated with mobility, be it industrial, occupational or spatial. That said, the flexibility with which any market economy responds to external shocks depends upon the degree of inter-sectoral mobility of the factors of production. In the context of labour, mobility is enhanced when workers possess skills which render them productive in alternative uses, and this is the very antithesis of the system of enterprise specific skill acquisition which dominates the Japanese labour market.

Flexibility is integral to the employment contract of employees within the primary sector and is manifest in the manner in which some beneficiaries of long term employment will be required to move to other companies, either to subsidiaries or to other firms within the wider keiretsu (Jacoby, 2005). Brunello (1988) examines the rationale underlying the process of employee transfer between companies, either on a temporary (*shukko*, *oen haken*) or permanent (*tenseki*) basis. He identifies four uses of the process: educational reasons, technical guidance, the re-deployment of older workers, and the management of surplus labour. Both ‘receiver’ and ‘dispatcher’ gain from the transfer process, if not necessarily equally.<sup>2</sup> According to Brunello: “As long as problems of reputation make adverse selection not possible in transfers between large companies, the receiver may enjoy economies of screening costs by substituting seasonal workers with transferred employees” (p 127). From the perspective of the ‘dispatcher’, the system of employee transfer no longer makes long term employment and necessary adjustment to changing labour demands potentially incompatible goals. For example, Hildreth and Ohtake’s (1998) case study examination of adjustment practices demonstrates how the ability of firms to move employees on a short term basis “leads to a continuous as opposed to discrete adjustment across plants in response to changes in demand” (p 148).

The contingent part of the workforce within these primary sector organizations continues to expand. Part time working and working on temporary contracts grew in importance during the 1980s, partly for the labour cost savings associated with this type of worker and partly for the manner in which they facilitated numerical flexibility (Houseman, 1995; Houseman & Osawa, 1996). Effectively, they acted as a buffer, protecting the job security of those guaranteed long term employment. Non regular employees of this type are seen to be especially prevalent within the tertiary sector of the economy, especially the wholesale and retail sectors, and less prevalent within manufacturing.

## ***2.2 The Adjustment Processes***

Labour re-allocation between sectors of the economy and between labour markets states, such as employment and unemployment, may be prompted by two very different sets of forces. First, forces operating at the level of the economy as a whole – the aggregate disturbances associated with Keynesian economics for example, often producing what is conventionally called cyclical unemployment. Secondly, forces operating at the micro level, sectoral shocks for example, where the initial impact is upon firms within particular industries and any consequential sectoral (or structural) unemployment is attributable to imperfect labour market adjustment (Abraham & Katz, 1986; Brainard & Cutler, 2001; Lilien, 1982).

There are two ways by which an industrial sector may accommodate changing demand for its products/services and, therefore, its demand for labour, irrespective of the external forces causing this: either by varying the rate at which some units embodying new techniques are created; or by varying the rate at which other units embodying vintage techniques are destroyed (Caballero & Hammour, 2001). In this context of job creation and job destruction, the issues are twofold. First, in the event of closure, which constitutes the marginal units more likely to be associated with job destruction, large firms or small firms? Second, in the more likely event of company downsizing rather than establishment/enterprise closure, who constitutes the marginal employee? For example,

those with job security within the dominant corporate sector?; those within this sector, but a member of the contingent workforce?; or those employed in the small firms sector?

Genda (1998), applies the methodology associated with David and Haltiwanger (Davis & Haltiwanger, 1992: Davis et al, 1996) to examine job creation and job destruction for the period 1991 -1995. The annual rate of job creation is seen to fall and the annual rate of job destruction (for continuing establishments) to rise. Genda finds that small to medium sized firms and small establishments account for most of the jobs created and destroyed – a finding which contrasts with those for both the USA (Davis & Haltiwanger, 1992: Davis et al, 1996) and Great Britain (Blanchflower & Burgess, 1996). Genda also concludes that the rate of job destruction is associated with the type of worker involved, being lower for regular, full time and male employees than for non regular, part time and female employees.

Kato (2001) concurs with part of Genda's findings. He estimates job retention rates and finds little by way of statistical evidence of the “serious erosion of the practice of lifetime employment” (p 494). “(E)vidence points to the enduring nature of the practice of lifetime employment, in particular for prime age male employees. The burden of downsizing during the economic slowdown in the 1990s fell disproportionately on young employees and middle age employees with short tenure, in particular middle age female employees” (p 495). His complementary field studies report how this happened: viz. organisations cut hiring, and layoffs are avoided by resorting to early retirement schemes and, most especially, “extensive use of transfers to subsidiaries and related firms” (p 510).

By contrast, Ahmadjian and Robinson (2001) argue that downsizing became increasingly prevalent during the late 1990s. They cite the incidence of hiring freezes and lay-offs during the period, in addition to the use made of more conventional adjustment measures of dismissing contract and part time labour and dispatching employees to affiliates. These were the same measures used successfully in the past to address comparable problems, for example those caused by the oil shocks of 1970s. “Japanese firms responded to

declining profits by reducing their permanent labor forces and .. these cuts increased throughout the 1990s” (p 644). Moreover, the more firms made use of these downsizing measures, the more this strategy became “legitimised” (p 646) and the more other firms came to adopt it.<sup>3</sup>

Transfers to subsidiary companies became increasingly prevalent during the 1990s under the auspices of both *shukko* (where the employee maintains his employment contract with his original company, but now carries out work at the premises of the receiving company) and *tenseki* (where the employee severs his agreement with the original company and now works to a new employment contract drawn up by the receiving company) (Lincoln & Gerlach, 2004; Schregle, 1993). Furthermore, increasingly transfers originally made on a temporary basis were made permanent.

Firms also adjusted by means of reducing, if not suspending recruitment. To the extent that this happened, the impact was externalised to the labour market as a whole and the costs of adjustment were met by labour market participants, especially new entrants to the labour market (Genda & Rebick, 2000). The numbers of young people in part time or casual work (*arubaito*) – known collectively as ‘*freeters*’ – increased. The rate of youth unemployment increased. Genda and Kurosawa (2001), examining how the adverse labour market conditions impacted upon the historically successful transition from school to work in Japan, find that the probability of finding work declined and the quality of the matches made much reduced.

### 3. PATTERNS OF ADJUSTMENT

Adjustment is examined for the period 1991 – 2003, making use of the data source described in Appendix One. The context, therefore, is one of increasing unemployment, despite two periods of short lived expansion in the rate of growth of GDP. Adjustment is examined in three ways. First, it is examined via engagements and separations by industry, where an important distinction is made between hires and in-transfers on the one hand and quits and out-transfers on the other. Secondly, adjustment is examined via an analysis of hires and quits only, and again by industry. Finally, adjustment is examined via a complementary analysis of quits and hires, this time undertaken by size structure of establishments.

#### *3.1 Engagements and Separations, by Industry, and the Significance of Transfers*

Tables 1 through to 10 focus upon the adjustment patterns associated with changes in employment. (All the tables used in the paper are brought together in Appendix Two.) Table 1 presents information for the economy as a whole, thereby providing the equivalent of aggregate benchmarks, and the others for nine industries.

By definition, net employment growth equals the difference between the engagement rate and the separation rate, with net employment growth being positive when the former exceeds the latter and *vice versa*. Engagements, however, are of two sorts: transfers (back) into the enterprise (the ‘Transfer-in Rate’) and new hires to it (the ‘Hires Rate’). Similarly, separations are of two sorts: transfers from the enterprise (the ‘Transfer-out Rate’) and quits from it (the ‘Quit Rate’).<sup>4</sup>

In terms of net employment growth throughout the period, Mining is negative (with the exceptions of 1992 and 1996); Manufacturing is negative (with the exception of 1991); and Wholesale and Retail Trade, Eating and Drinking Places is negative (with the exceptions of 1991 and 1992). By contrast, net employment growth in Construction is positive until 1997, when it becomes negative, reflecting policy changes in the historic use of this sector to counteract demand deficient unemployment. Net employment growth

is positive in Services until 1999, although it is also positive in two of the remaining four years of the period. Within industry annual variability (measured by the value of the standard deviation) is particularly apparent in Mining (at 4.03) and Construction (at 3.02).

The net employment growth statistic reflects the difference between the engagement rate and the separation rate. However, there are considerable differences between industries in the mean value of both these rates, reflecting differences in labour turnover. Both Mining (with a mean engagement rate of 11.27) and Manufacturing (with a mean engagement rate of 12.27) have turnover rates less than the national average (where the mean engagement rate is 17.29). By contrast, Wholesale and Retail Trade, Eating and Drinking Places (with a mean engagement rate of 19.40), Financing and Insurance (with a mean engagement rate of 22.01), Real Estate (with a mean engagement rate of 22.79) and Services (with a mean engagement rate 20.51) have turnover rates higher than the national average. Again as measured by the value of the standard deviation, there is a degree of within industry annual variability apparent, most especially so in Real Estate.

The scope to adjust to changing labour demand by means of transfer varies between industries, reflecting factors such as the size structure and ownership patterns of the organisations which comprise the sector, with transfer having more potential and being more practicable in large, multi plant and/or public sector owned organisations. Accordingly, inter industry differences are apparent in the context of transfers, with Transport and Communication, Financing and Insurance and Electricity, Gas, Heat Supply and Water having 'Transfer-in' and 'Transfer-out' rates well above the national average, where the mean 'Transfer-in' rate is 16.34 and the mean 'Transfer-out' rate is 16.17. In the context of Electricity, Gas, Heat Supply and Water, approximately 75 percent of engagements/separations are accountable to transfers. By contrast, adjusting via transfer is much less prevalent in Mining, Construction and Services. Construction exhibits the lowest tendency to adjust via transfer, with a mean 'Transfer-in' rate of 10.52 and a mean 'Transfer-out' rate of 10.02. Within industry annual variation in transfers (measured by the value of the standard deviation) is apparent, irrespective of the extent to

which the industry makes use of this adjustment strategy. It is especially apparent in Mining and Real Estate.

To address the research questions posed at the outset, therefore, it would appear that the phenomenon of transfer is more prevalent in some industries than others. It is more likely to be found within Transport and Communication, Financing and Insurance, and Electricity, Gas, Heat Supply and Water. It is not absent from, for example, Construction. It is just that its incidence in that particular industry is comparatively low. However, there is little evidence of this transfer phenomenon changing its incidence over the period, even in the industries where its frequency of usage is high. In terms of Brunello's (1988) rational, therefore, the practice would appear to be more compatible with employee education and training and company distribution of technical guidance than with the management of a surplus workforce.

### ***3.2 Hires and Quits, by Industry***

Engagements and separations are both pro-cyclical, with the former tending to have a greater amplitude over the cycle than the latter. As the economy expands, so employers seek to recruit staff, and, as employers post vacancies, so an individual may quit his/her existing employment in favour of one of these alternatives. With increasing labour demand, therefore, the probability that an individual employee voluntarily quits his/her post for an alternative increases. On the other hand, as labour demand contracts, recruitment is reduced, if not suspended. With fewer alternative vacancies available, the probability of an individual voluntarily quitting his/her existing post for an alternative decreases. However, during this period of the cycle, the prevalence of involuntary quits, redundancies for example, is greater.

The issue of consequence in this sub section of the paper is the extent to which the use made of contingent labour changes over time. To the extent that contingent labour is manifest in the hiring and firing of female workers and part time workers, do the percentages of females/part timers hires/fires increase or decrease? To what extent are there inter industry differences in these percentages? The manner of this examination

proceeds graphically. First total hires and total quits are examined, then the percentage of females and part timers who are hired/quit are examined, for the economy as a whole and for the nine industries.

The aggregate patterns are presented in Figures 2A and 2B, with the former illustrating total hires and total quits and the latter illustrating the percentage of hires and quits which are female and part time. Until 1994, the nature of the pattern of hires and quits conforms to expectations. As economic activity declines, reflected in increasing unemployment, the number of hires and quits decreases, with the rate of decrease of the former being greater than the rate of decrease of the latter. From 1994, the long run trend is for the number of hires to increase. Above trend increases in hires are apparent in 1996 and 2001. With the exception of the former year, however, from 1994 the number of quits exceeds the number of hires.<sup>5</sup> What is evident from Figure 2B is that the percentage of female hires and quits does not change to any significant extent, from its level of 50 percent in 1991. If anything, the tendency is for the percentage of female hires to decrease marginally during the early part of the decade. By contrast, although only post 1996, the percentage of part time hires and quits both increase, with the latter exceeding the former. However, this aggregate picture masks major differences at industry level.

The two industries which are the nearest reflections of the aggregate picture are Wholesale and Retail Trade, Eating and Drinking Places (Figures 8A and 8B) and Services (Figures 11A and 11B), industries which experience an increase in employment over the period. In the context of the former, quits exceed hires, post 1994, with the exception of the year 1996. There is little change in the percentage of females hired/who quit, who, at levels approximating 55 percent, constitute the majority of workers involved. By contrast, post 1996, the percentage of part timers who are hired/who quit increases. By 1998 their levels now exceed 50 percent of the total, with the percentage of hires exceeding the percentage of quits. These patterns are broadly similar for Services. Here, however, there are years in which the number of hires exceeds the number of quits and although the number of females who are hired/quit constitute the majority, this never comes to be the case in the context of part time employees.

In contrast, Mining (Figures 3A and 3B), Manufacturing (Figures 5A and 5B) and Financing and Insurance (Figures 9A and 9B) are industries in which numbers employed decrease over the period. Consequently, these industrial sectors also exhibit broadly similar trends. There are long run downward trends in both hires and quits, with the number of the latter nearly always exceeding the number of the former. There are only marginal differences in the percentages of females who are hired/who quit in Manufacturing and Financing and Insurance, with levels approximating 45 percent and 70 percent, respectively. However, there are marked changes in the percentage of female workers who are hired/who quit in Mining, perhaps attributable to the occupational structure of that industry and the manner in which mining organisations may seek to adjust using non-operational staff. There are upward trends in the percentage of part time workers who are hired/who quit towards the end of the period. Never a feature of recruitment in Mining before, by 2002, part time recruitment there exceeds 10 percent of total recruitment.

In Construction (Figures 4A and 4B) hires exceed quits until 1996. Thereafter, quits exceed hires, with the numbers of hires tending to decrease with time. During the earlier part of the period, there is a tendency for the percentage of females who are hired/who quit to decrease from its initial level of approximately 23 percent, although a subsequent increase is apparent from 1999. The tendency is for the (very low) percentage of part time employees who are hired/who quit to increase post 1999, if only marginally.

The patterns exhibited in Electricity, Gas, Heat Supply and Water (Figures 6A and 6B), Transport and Communication (Figures 7A and 7B) and Real Estate (Figures 10A and 10B) are quite idiosyncratic by contrast to the industries described above, perhaps attributable to the public utilities dimension associated with much of the first two and the nature of the property market during this period, associated with Real Estate. In the specific context of the dominant themes of this sub section of the paper, one feature is especially noteworthy: the increase in the percentage of part time employees hired/who quit post 1998 in Transport and Communication.

Three conclusions may be made as a consequence of this examination. The aggregate pictures of change over the period mask major inter industry differences; perhaps with the exception of Mining, there is no discernible difference the percentage of females who are hired/who quit, although the percentage who are hired/who quit is sizeable and exceeds levels of 50 percent in three industries (viz. Wholesale and Retail Trade, Eating and Drinking Places; Financing and Insurance; and Services); and there is evidence of an increase in the percentage of part time employees who are hired/who quit in four industries (viz. Manufacturing, Transport and Communication, Wholesale and Retail Trade, Eating and Drinking Places, and Services).

### ***3.3 Hires and Quits, by Establishment Size***

This sub section examines hires and quits, for all workers, female workers and part time workers by size of establishment.

In terms of the percentage distribution of total hires by establishment size, almost 50 percent are recruited into establishments employing less than 100 individuals. Establishments employing more than 1,000 individuals are responsible for recruiting less than 1 in 5 of total hires. The percentage distribution by establishment size for the recruitment of females and part time employees is similar to that for total hires. Furthermore, these three percentage distributions change only marginally over time, with no particular pattern of change observable. Approximately 20 percent of all quits, irrespective of type, come from establishments employing more than 1,000 workers. Almost 1 in 2 quits - again, either in total, for female employees or for part time employees - come from establishments employing less than 100 individuals. The three percentage distributions of quits by establishment size also change only marginally over the period, with, again, no recognizable pattern to the change.

Making use of the hires/quits framework, the aim of this sub section is to address the research question: To what extent is there evidence which suggests that larger establishments externalize their problem of adjustment, meeting changing demand by making more/less use of smaller establishments? The data necessary to address this

question are presented in Tables 11 through to 15, which present information on hires and quits by the five size categories of establishments.

The long recession to which Flath (2005) refers becomes especially evident in the years 1993 and 1994, with total quits exceeding total hires for establishments of size 100 – 299; and 30 – 99 in the former year and total quits exceeding total hires for establishments of size 1,000 and over; 300 – 999; and 5 – 29 in the latter year. For establishments of size 330- 999 and 100 - 299, these years are associated with dramatic decreases in the number of both total hires and total quits. However, by contrast, for the largest establishments, 1994 is a year in which total hires decrease and total quits increase. There is very little difference in the number of total hires or total quits made during this time in establishments in the two smallest size categories. Total quits exceeding total hires is a feature even of the latter years, when the number of hires increases. Summary information for total hires and total quits for the period is provided in Table 16.

There is little change in the percentage of females who are hired/who quit over the period, reflecting a finding reported in the previous sub section but from an alternative perspective. For establishments in the smaller two size categories, the respective percentages remain below 50 percent throughout. For establishments in the largest three size categories, the respective percentages are mostly above 50 percent. There is also little change in the percentage of part time employees who are hired/who quit for the earlier part of the period, again reflecting another finding reported in the previous sub section. This changes by the end of the decade, for establishments of all size categories. By the end of the period, the number of part time employees hired increases by 10 – 12 percentage points, and doubles, from 22 percent to 44 percent, for establishments with 1,000 employees and over. Furthermore, during this latter period, and again across all size categories, the percentage of hires exceeds the percentage of quits, indicative of a restructuring of establishment workforces, with proportionately more of the employment stock working on part time contracts.

In terms of the research question posed at the outset, therefore, there is evidence compatible with establishment downsizing across all size categories, making use of the

total quits/total hires information. With the exception of a few exceptional years, from the first years in which the total hires minus total quits figures become negative, they remain negative. That said, there is no evidence to suggest that larger establishments externalize their adjustment problems. Evidence of externalizing on the part of larger establishments would be consistent with relatively low variations in the number of total hires/total quits over time, reflected in the value of the standard deviation or coefficient of variation of the respective means. There is no difference in the variation of total hires/total quits between establishment sizes, however (cf. Table 23).<sup>6</sup>

#### **4. CONCLUSIONS**

Corporate internal labour markets in Japan have an all pervasive influence, to the extent that they structure the external labour market, creating ‘primary’ and ‘secondary’ labour markets which offer diverse experiences and rewards to labour market participants. Moreover, according to the OECD, they have hindered the process of adjustment to the problem of rising unemployment, if not actually exacerbating the magnitude of the problem itself.

This paper has examined employment change during the period 1991 -2003, making use of aggregate data on industries and establishments which have their origin in the ‘Survey on Employment Trends’. The particular focus was the engagement and separation processes. Three issues were examined, each of central importance to ongoing debates within the literature: the extent of ‘transfer’, a unique feature of the Japanese employment system; the extent to which increasing use has been made of contingent labour, as proxied by female and part time employees; and the extent to which larger establishments have externalized their problem of adjustment, by requiring smaller establishments to change the number of their engagements and separations instead.

The phenomenon of transfer was found in all industries, however it was more prevalent in Transport and Communication, Financing and Insurance, and Electricity, Gas, Heat

Supply and Water. Its incidence had changed only marginally over the period. Hence, it is concluded that the *raison d'être* of transfer has less to do with managing surplus labour and more to do with employee and enterprise knowledge transfer. Approximately, 50 percent of all hires were female, a percentage which changed only marginally over the period. Further, more than half of the new hires in three industries (viz. Wholesale and Retail Trade, Eating and Drinking Places; Financing and Insurance; and Services) were female. There was little change over the period in the percentage of females hired when this was examined by the size structure of establishments. By contrast, there has been an increase in the number of part time employees hired, if only in certain industries (viz. Manufacturing, Transport and Communication, Wholesale and Retail Trade, Eating and Drinking Places) and post 1998. Where an increase in part time hires was observed, it was found across all establishments, irrespective of size. There was no evidence to support the argument that larger establishments adjust externally, making use of smaller establishments to do so.

The nature of the data set used necessarily limits the significance of these results. For example, aggregate data mask differences at the level of the establishment (and enterprise). Without doubt, however, considerable changes have taken place within the Japanese labour market since 1998, changes which warrant further, more detailed examination at the level of the establishment (or enterprise) to determine which establishments (or enterprises) have downsized/upsized; and how they have done so, using contingent labour or otherwise. Two important outcomes from such an empirical investigation would be to ascertain the extent to which the one time central feature of long term employment in the corporate internal labour market still remains, and the extent to which this sector continues to influence the operation of the labour market as a whole.

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<sup>1</sup> In this respect, there is an “institutional complementarity” between labour and capital markets (Tachibanaki & Taki, 2000, p 202). The long term, although not necessarily contractual, relationship which some companies have with significant components of their workforces is complemented with a similar long run relationship with the principal agent in the capital market, the main bank system (Abe, 2002: Aoki, 1990: Yafeh, 2000).

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<sup>2</sup> Enterprise unions, another integral element within the employment system in mature Japanese corporations, also favour the process of transfer, much preferring it to a possible alternative adjustment strategy of redundancy.

<sup>3</sup> Ahmadjian and Robinson predict that even when economic conditions improve, “Japanese firms will not revert to the permanent employment system as it existed in the 1980s” because “downsizing in the 1990s effectively deinstitutionalised permanent employment” (p 650).

<sup>4</sup> What is not known, *a priori*, (and cannot be deduced *ex post* from data of this type) is the nature of the relationship between the ‘Transfer-in Rate’ and the complementary ‘Hires Rate’ in the context of engagements and the corresponding ‘Transfer-out Rate’ and the ‘Quit Rate’ in the context of separations. For example, in the context of engagements, do ‘transfers-in’ operate as some constraint on hires; or do they serve to compensate, when hiring proves insufficient to meet demands of quantity and/or quality? And in the context of separations, do transfers out constitute the first attempt to downsize; or do they act to satisfy downsizing requirements, when quits are insufficient? Furthermore, given that ‘transfers out’ in one time period may imply a subsequent ‘transfer in’ at some later time period, to what extent does the process of transfer have impacts over time, constraining and/or facilitating adjustment decision?

<sup>5</sup> Given the limitations within the data set, what is not known is the extent to which these quits are voluntary or involuntary. Further, the nature of the change in employment status consequential of a quit is not known: for example, how many were job-to-job transfers and, therefore, subsequently re-appearing in the hires statistics; or how many resulted in unemployment; or quits from the labour market.

<sup>6</sup> Note: the statistics relate to ‘establishments’. There is no evidence about ‘enterprises’.

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## **APPENDIX ONE: THE DATA SET**

The data used in the paper have their origin in the Japanese 'Survey on Employment Trends'.

This survey is undertaken twice yearly, once between January to June then again between July to December. The aim is to obtain information on the extent of mobility within the labour force and to collect information about the personal and employment characteristics of those who enter and leave employment. The survey is nationwide and is based on establishments categorised by industrial classification. Approximately 14,000 establishments, from both the private and public sectors, employing 5 or more regular workers are selected by means of a random sample. Again using random sampling methods based upon those employees who join or quit these 14,000 establishments, 130,000 of the former and 120,000 of the latter are selected for interview.

The survey provides information, inter alia, about the Standard Industrial Classification and size of the establishment; the number of employees employed by the establishment; the gender and the employment status of these employees; the number of employees who join, quit or transfer to/from the establishment during the survey period; and the personal and employment characteristics of these 'mobile' workers.

The data used in the paper are the aggregated data, available in the Year Book of Labour Statistics.

The following definitions used in the survey are of particular relevance in the paper.

**Regular Workers** are defined as those persons hired for an indefinite period or for longer than one month, or persons hired by the day who have worked 18 days or more in each of the two preceding months. Regular workers may be distinguished by gender. In the paper, female regular workers are used to define one perspective of the contingent workforce.

**Part time employees** are defined as those who satisfy either of two conditions: their scheduled working hours per day is less than those of regular workers: their scheduled working day in terms of hours worked is the same as those of ordinary workers but whose number of scheduled working days is less than regular workers. In the paper, the number of part time workers is used to define another perspective of the contingent workforce.

The part time worker, as defined, however, cannot be assumed to constitute the contingent workforce as a whole – the ‘non-regular workers’, as it were. In the survey, there is a further employee classification viz. the nominal temporary or daily worker, defined as those hired for a set period or hired by the day. No separate information is published as to the number of workers in this category, nor is there any means by which this number may be calculated using published statistics.

The survey seeks to calculate the number of **increased employees**, i.e. the number of regular workers who join the establishment within the past 12 months. In the paper, this inflow is identified as **engagements**. Increased employees (or engagements) are of two sorts viz. transfers back into the establishment or new hires. **Transferred workers** are defined as those who are transferred between two establishments as a consequence of some contract made between these establishments. In this instance, therefore, individuals transferred back into the establishment constitute employees of the establishment who, at some time in the past, had been transferred to another establishment and were now returning. By contrast, new hires constitute regular workers joining the establishment for the first time.

From these data, the paper proceeds to derive and make use of the following:

- **The Engagement Rate:** the number of engagements made during the 12 month period, as a percentage of the number of regular workers at the beginning of the period.

- **The Transfer-in Rate:** the number of regular workers transferred back into the establishment during the period as a percentage of the number of engagements during the period.
- **The Hires Rate:** the number of regular workers, new to the establishment, hired during the period as a percentage of the number of engagements during the period.

The survey also seeks to calculate the number of **decreased employees**, i.e. the number of regular workers who leave the establishment within the past 12 months. In the paper, this outflow is identified as **separations**. Decreased employees (or separations) are also of two sorts viz. transfers out of the establishment or quits. In this instance, therefore, individuals transferred out of the establishment constitute employees of the establishment who had been transferred to another establishment during the period. By contrast, quits constitute regular workers leaving the establishment, voluntarily or involuntarily. (It is not possible to distinguish between voluntary and involuntary quits.)

From these data, the paper proceeds to derive and make use of the following:

- **The Separation Rate:** the number of separations made during the 12 month period, as a percentage of the number of regular workers at the beginning of the period.
- **The Transfer-out Rate:** the number of regular workers transferred out of the establishment during the period as a percentage of the number of separations during the period.
- **The Quits Rate:** the number of regular workers who leave the establishment during the period as a percentage of the number of separations during the period.

## APPENDIX TWO: TABLES REFERRED TO IN THE TEXT

**Table 1: The Nature of Employment Change (%), 1991 – 2003: All Industries**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 1.35                  | 19.18           | 17.84           | 13.08            | 86.92      | 15.03             | 84.97     |
| 1992                     | 1.09                  | 18.64           | 17.56           | 15.12            | 84.88      | 16.72             | 83.28     |
| 1993                     | -0.03                 | 16.70           | 16.74           | 14.83            | 85.17      | 16.37             | 83.26     |
| 1994                     | -0.82                 | 16.00           | 16.82           | 19.15            | 80.85      | 17.74             | 82.26     |
| 1995                     | -0.97                 | 16.10           | 17.07           | 16.23            | 83.77      | 16.08             | 83.92     |
| 1996                     | -0.01                 | 16.59           | 16.60           | 17.00            | 83.00      | 16.98             | 83.02     |
| 1997                     | -0.77                 | 17.31           | 18.09           | 17.03            | 82.97      | 15.96             | 84.04     |
| 1998                     | -1.40                 | 16.84           | 18.25           | 18.04            | 81.96      | 17.18             | 82.82     |
| 1999                     | -1.04                 | 16.89           | 17.94           | 16.85            | 83.15      | 16.21             | 83.79     |
| 2000                     | -1.47                 | 17.27           | 18.75           | 15.04            | 84.96      | 14.84             | 85.16     |
| 2001                     | -1.99                 | 18.10           | 20.09           | 16.50            | 83.50      | 15.79             | 84.12     |
| 2002                     | -2.00                 | 17.49           | 19.49           | 17.20            | 82.80      | 15.08             | 84.92     |
| 2003                     | -1.64                 | 17.64           | 19.28           | 16.44            | 83.56      | 16.26             | 83.74     |
| Mean                     | -0.74                 | 17.29           | 18.03           | 16.34            | 83.65      | 16.17             | 83.82     |
| Standard Deviation       | 1.07                  | 0.36            | 1.11            | 1.55             | 1.55       | 0.86              | 0.86      |
| Coefficient of Variation | -1.43                 | 0.05            | 0.06            | 0.09             | 0.09       | 0.05              | 0.01      |

Footnotes to Tables 1 – 10:

1. Source: Survey on Employment Trends, Table 11 (for years 1991 – 1994), Table 12 (for year 1995) and Table 13 (for years 1996 – 2003).

2. Calculating net employment change and net employment growth in this way makes use of data from the same survey. An alternative would be to calculate the former by differencing the number of employees at Time Period 2 and the number of employees at Time Period 1. This, however, would use information from two discrete surveys. Hence this method is rejected. (The results produced by these alternative methods differ. Net Employment Change is, generally, negative using within survey method. Generally, it is positive using the across survey method.)

**Table 2: The Nature of Employment Change (%), 1991 – 2003: Mining**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | -0.81                 | 11.83           | 12.63           | 7.95             | 92.05      | 7.45              | 92.55     |
| 1992                     | 2.68                  | 15.03           | 12.35           | 19.64            | 80.36      | 9.78              | 90.22     |
| 1993                     | -1.88                 | 10.82           | 12.70           | 14.49            | 85.51      | 14.81             | 85.19     |
| 1994                     | -1.86                 | 15.53           | 17.39           | 11.00            | 89.00      | 7.14              | 92.86     |
| 1995                     | -0.60                 | 10.71           | 11.31           | 7.04             | 92.96      | 20.00             | 80.00     |
| 1996                     | 1.86                  | 11.63           | 9.77            | 9.33             | 90.67      | 12.70             | 87.30     |
| 1997                     | -1.77                 | 9.32            | 11.09           | 6.90             | 93.10      | 8.70              | 91.30     |
| 1998                     | -5.07                 | 9.80            | 14.87           | 15.00            | 85.00      | 7.69              | 92.31     |
| 1999                     | -3.21                 | 8.35            | 11.56           | 7.69             | 92.31      | 5.56              | 94.44     |
| 2000                     | -2.40                 | 11.33           | 13.73           | 3.85             | 98.15      | 6.35              | 93.65     |
| 2001                     | -1.36                 | 11.99           | 13.35           | 16.98            | 83.02      | 3.39              | 96.61     |
| 2002                     | -2.00                 | 12.97           | 14.96           | 30.77            | 69.23      | 13.33             | 86.67     |
| 2003                     | -14.04                | 7.23            | 21.28           | 11.76            | 88.24      | 55.00             | 45.00     |
| Mean                     | -2.34                 | 11.27           | 13.61           | 12.49            | 87.50      | 13.22             | 86.77     |
| Standard Deviation       | 4.03                  | 2.36            | 3.03            | 7.11             | 7.11       | 13.32             | 13.32     |
| Coefficient of Variation | -1.72                 | 0.21            | 0.22            | 0.56             | 0.08       | 1.00              | 0.15      |

**Table 3: The Nature of Employment Change (%), 1991 – 2003: Construction**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 3.20                  | 19.54           | 16.35           | 7.52             | 92.48      | 7.57              | 92.43     |
| 1992                     | 3.08                  | 20.46           | 17.38           | 11.13            | 88.87      | 10.55             | 89.45     |
| 1993                     | 2.25                  | 16.78           | 14.53           | 7.38             | 92.62      | 6.06              | 93.94     |
| 1994                     | 1.02                  | 16.92           | 15.91           | 11.55            | 88.45      | 12.84             | 87.16     |
| 1995                     | 0.55                  | 17.65           | 17.10           | 6.79             | 93.21      | 8.03              | 91.97     |
| 1996                     | 1.43                  | 17.27           | 15.84           | 6.74             | 93.26      | 10.98             | 89.02     |
| 1997                     | -1.69                 | 17.66           | 19.35           | 16.55            | 83.45      | 9.67              | 90.33     |
| 1998                     | -2.54                 | 13.75           | 16.29           | 6.16             | 93.84      | 5.68              | 94.32     |
| 1999                     | -0.78                 | 15.83           | 16.60           | 10.34            | 89.66      | 9.95              | 90.05     |
| 2000                     | -2.77                 | 15.49           | 18.26           | 8.79             | 91.21      | 8.87              | 91.03     |
| 2001                     | -4.11                 | 14.34           | 18.45           | 13.03            | 86.97      | 14.43             | 85.57     |
| 2002                     | -5.71                 | 15.19           | 20.90           | 10.61            | 89.39      | 11.19             | 88.81     |
| 2003                     | -4.86                 | 11.22           | 16.08           | 20.20            | 79.80      | 14.39             | 85.61     |
| Mean                     | -0.84                 | 16.31           | 17.15           | 10.52            | 89.47      | 10.02             | 89.97     |
| Standard Deviation       | 3.02                  | 2.43            | 1.70            | 4.15             | 4.15       | 2.81              | 2.81      |
| Coefficient of Variation | -3.59                 | 0.14            | 0.09            | 0.39             | 0.04       | 0.28              | 0.03      |

**Table 4: The Nature of Employment Change (%), 1991 – 2003: Manufacturing**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 0.60                  | 15.19           | 14.59           | 10.27            | 89.73      | 10.09             | 89.91     |
| 1992                     | -0.49                 | 13.93           | 14.42           | 10.54            | 89.46      | 12.36             | 87.64     |
| 1993                     | -1.60                 | 11.93           | 13.52           | 11.76            | 88.24      | 10.89             | 89.11     |
| 1994                     | -1.80                 | 11.57           | 13.37           | 13.18            | 86.82      | 11.89             | 88.11     |
| 1995                     | -1.53                 | 12.19           | 13.73           | 13.02            | 86.98      | 11.60             | 88.40     |
| 1996                     | -1.42                 | 11.67           | 13.10           | 13.53            | 86.47      | 12.21             | 87.79     |
| 1997                     | -1.49                 | 12.25           | 13.73           | 12.32            | 87.68      | 12.19             | 87.81     |
| 1998                     | -3.25                 | 11.01           | 14.26           | 17.10            | 82.90      | 12.99             | 87.01     |
| 1999                     | -2.38                 | 12.10           | 14.47           | 15.05            | 84.95      | 12.35             | 87.65     |
| 2000                     | -2.21                 | 12.05           | 14.26           | 16.85            | 83.15      | 14.61             | 85.39     |
| 2001                     | -3.96                 | 12.58           | 16.54           | 16.99            | 83.01      | 13.16             | 86.84     |
| 2002                     | -3.91                 | 11.48           | 15.39           | 17.10            | 82.90      | 12.32             | 87.68     |
| 2003                     | -2.58                 | 11.65           | 14.22           | 15.92            | 84.08      | 14.36             | 85.64     |
| Mean                     | -1.99                 | 12.27           | 14.27           | 14.12            | 85.87      | 12.38             | 87.61     |
| Standard Deviation       | 1.27                  | 1.12            | 0.90            | 2.52             | 2.52       | 1.23              | 1.23      |
| Coefficient of Variation | -0.63                 | 0.09            | 0.06            | 0.17             | 0.02       | 0.09              | 0.01      |

**Table 5: The Nature of Employment Change (%), 1991 – 2003: Electricity, Gas, Heat Supply and Water**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | -1.14                 | 16.05           | 17.19           | 66.26            | 33.74      | 69.45             | 30.55     |
| 1992                     | 0.62                  | 15.35           | 14.73           | 64.04            | 35.96      | 67.63             | 32.37     |
| 1993                     | 1.69                  | 17.42           | 15.73           | 67.58            | 32.42      | 72.41             | 27.59     |
| 1994                     | 1.59                  | 15.47           | 13.88           | 69.56            | 30.44      | 73.71             | 26.29     |
| 1995                     | 0.28                  | 16.51           | 16.23           | 71.48            | 28.52      | 73.63             | 6.37      |
| 1996                     | 0.35                  | 16.21           | 15.86           | 70.70            | 29.30      | 70.66             | 29.34     |
| 1997                     | -0.95                 | 15.90           | 16.58           | 71.97            | 28.03      | 70.54             | 29.46     |
| 1998                     | -0.19                 | 17.04           | 17.24           | 65.97            | 34.03      | 65.05             | 34.95     |
| 1999                     | -1.41                 | 15.20           | 16.60           | 74.90            | 25.10      | 70.24             | 29.76     |
| 2000                     | -1.47                 | 15.13           | 16.60           | 70.10            | 29.90      | 67.59             | 32.41     |
| 2001                     | -2.06                 | 16.12           | 18.18           | 74.65            | 25.35      | 68.71             | 31.29     |
| 2002                     | -1.12                 | 16.98           | 18.10           | 72.67            | 27.33      | 63.27             | 36.73     |
| 2003                     | 0.70                  | 21.25           | 20.54           | 71.14            | 28.86      | 60.72             | 39.28     |
| Mean                     | -0.23                 | 16.50           | 16.74           | 70.07            | 29.92      | 68.73             | 31.26     |
| Standard Deviation       | 1.21                  | 1.59            | 1.66            | 3.31             | 3.31       | 3.89              | 3.89      |
| Coefficient of Variation | -5.06                 | 0.09            | 0.09            | 0.11             | 0.11       | 0.05              | 0.12      |

**Table 6: The Nature of Employment Change (%), 1991 – 2003: Transport and Communication**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 0.94                  | 15.87           | 14.93           | 21.84            | 78.16      | 25.25             | 74.75     |
| 1992                     | 0.21                  | 16.58           | 16.38           | 28.82            | 71.18      | 28.35             | 71.65     |
| 1993                     | 1.58                  | 18.55           | 16.97           | 23.32            | 76.68      | 23.86             | 76.14     |
| 1994                     | -2.12                 | 15.61           | 17.72           | 26.73            | 73.27      | 30.37             | 69.63     |
| 1995                     | -2.18                 | 15.91           | 18.09           | 31.03            | 68.97      | 27.67             | 72.33     |
| 1996                     | -1.32                 | 15.55           | 16.87           | 26.86            | 73.14      | 27.62             | 72.38     |
| 1997                     | 0.16                  | 17.76           | 17.60           | 27.73            | 72.17      | 31.50             | 68.50     |
| 1998                     | -1.47                 | 18.49           | 19.96           | 23.83            | 76.17      | 25.18             | 74.82     |
| 1999                     | -0.86                 | 16.50           | 17.36           | 26.33            | 73.67      | 22.55             | 77.45     |
| 2000                     | -1.23                 | 15.65           | 16.88           | 22.11            | 77.89      | 23.77             | 76.23     |
| 2001                     | -3.04                 | 16.24           | 19.28           | 18.75            | 81.25      | 17.38             | 82.62     |
| 2002                     | -3.05                 | 15.20           | 18.24           | 24.43            | 75.57      | 20.11             | 79.89     |
| 2003                     | -1.50                 | 15.30           | 16.80           | 19.81            | 80.19      | 20.97             | 79.03     |
| Mean                     | -1.06                 | 16.40           | 17.46           | 24.73            | 75.26      | 24.96             | 75.03     |
| Standard Deviation       | 1.43                  | 1.15            | 1.27            | 3.59             | 3.59       | 4.11              | 4.11      |
| Coefficient of Variation | -1.34                 | 0.07            | 0.07            | 0.14             | 0.04       | 0.16              | 0.05      |

**Table 7: The Nature of Employment Change (%), 1991 – 2003: Wholesale and Retail Trade, Eating and Drinking Places**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 1.45                  | 21.29           | 20.03           | 11.68            | 88.32      | 14.71             | 85.29     |
| 1992                     | 2.07                  | 21.16           | 19.09           | 12.15            | 87.85      | 15.15             | 84.85     |
| 1993                     | -0.30                 | 18.36           | 18.67           | 14.73            | 85.27      | 20.30             | 79.70     |
| 1994                     | -1.20                 | 16.07           | 17.27           | 26.98            | 73.02      | 18.61             | 81.39     |
| 1995                     | -1.42                 | 16.79           | 18.20           | 16.59            | 83.41      | 16.73             | 83.27     |
| 1996                     | -0.91                 | 17.77           | 18.69           | 16.37            | 83.63      | 16.88             | 83.27     |
| 1997                     | -1.69                 | 18.39           | 20.08           | 15.34            | 84.66      | 15.42             | 84.58     |
| 1998                     | -1.47                 | 18.96           | 20.43           | 16.41            | 83.59      | 16.12             | 83.88     |
| 1999                     | -0.63                 | 18.96           | 19.59           | 15.41            | 84.59      | 15.40             | 84.60     |
| 2000                     | -1.45                 | 20.57           | 22.01           | 11.54            | 88.46      | 11.58             | 88.42     |
| 2001                     | -1.53                 | 21.15           | 22.68           | 14.99            | 85.01      | 15.41             | 84.59     |
| 2002                     | -1.72                 | 21.23           | 22.95           | 15.46            | 84.54      | 15.21             | 84.79     |
| 2003                     | -1.16                 | 21.37           | 22.54           | 14.26            | 85.74      | 15.97             | 84.03     |
| Mean                     | -0.76                 | 19.40           | 20.17           | 15.53            | 84.46      | 15.96             | 84.03     |
| Standard Deviation       | 1.20                  | 1.87            | 1.85            | 3.85             | 3.85       | 2.04              | 2.04      |
| Coefficient of Variation | -1.56                 | 0.09            | 0.09            | 0.24             | 0.04       | 0.12              | 0.02      |

**Table 8: The Nature of Employment Change (%), 1991 – 2003: Financing and Insurance**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 0.55                  | 23.67           | 23.12           | 31.51            | 68.49      | 35.56             | 64.44     |
| 1992                     | -1.93                 | 19.35           | 21.28           | 35.07            | 64.93      | 32.83             | 67.17     |
| 1993                     | -4.14                 | 18.83           | 22.96           | 40.46            | 59.54      | 39.82             | 60.18     |
| 1994                     | 0.23                  | 23.75           | 23.52           | 36.33            | 63.67      | 31.78             | 68.22     |
| 1995                     | -1.50                 | 23.54           | 25.03           | 33.16            | 66.84      | 34.53             | 65.47     |
| 1996                     | -1.46                 | 19.81           | 21.26           | 39.96            | 60.04      | 36.93             | 63.07     |
| 1997                     | -1.50                 | 19.08           | 20.58           | 34.39            | 65.61      | 37.84             | 62.16     |
| 1998                     | -1.37                 | 20.03           | 21.40           | 44.86            | 55.14      | 43.46             | 56.54     |
| 1999                     | -2.19                 | 21.40           | 23.59           | 37.90            | 62.10      | 40.96             | 59.04     |
| 2000                     | -1.86                 | 21.74           | 23.59           | 32.33            | 67.67      | 31.61             | 68.39     |
| 2001                     | 1.54                  | 25.02           | 23.48           | 47.64            | 52.36      | 40.34             | 59.66     |
| 2002                     | -1.51                 | 22.59           | 24.10           | 39.03            | 60.97      | 31.15             | 68.85     |
| 2003                     | -0.99                 | 27.37           | 28.35           | 33.74            | 66.26      | 35.63             | 64.37     |
| Mean                     | -1.23                 | 22.01           | 23.25           | 37.41            | 62.58      | 36.34             | 63.65     |
| Standard Deviation       | 1.40                  | 2.60            | 2.01            | 4.88             | 4.88       | 3.97              | 3.97      |
| Coefficient of Variation | -1.13                 | 0.11            | 0.08            | 0.13             | 0.07       | 0.10              | 0.06      |

**Table 9: The Nature of Employment Change (%), 1991 – 2003: Real Estate**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | -.68                  | 21.72           | 22.40           | 23.47            | 76.53      | 25.80             | 74.20     |
| 1992                     | -1.20                 | 30.56           | 31.77           | 13.53            | 86.47      | 35.03             | 64.97     |
| 1993                     | -2.23                 | 26.65           | 28.88           | 12.20            | 87.80      | 11.48             | 88.52     |
| 1994                     | -1.66                 | 23.65           | 25.31           | 24.57            | 75.43      | 29.40             | 70.60     |
| 1995                     | -5.62                 | 19.92           | 25.54           | 6.23             | 93.77      | 7.78              | 92.22     |
| 1996                     | 0.60                  | 17.20           | 16.60           | 9.67             | 90.33      | 5.83              | 94.17     |
| 1997                     | -0.95                 | 25.83           | 26.78           | 4.54             | 95.46      | 5.31              | 94.69     |
| 1998                     | -1.74                 | 23.39           | 25.13           | 33.00            | 67.00      | 24.97             | 75.03     |
| 1999                     | 0.29                  | 22.36           | 22.07           | 5.74             | 94.26      | 11.11             | 88.89     |
| 2000                     | 0.84                  | 23.20           | 22.36           | 16.65            | 83.35      | 22.16             | 77.84     |
| 2001                     | -4.27                 | 23.57           | 27.84           | 13.98            | 86.02      | 2.35              | 97.65     |
| 2002                     | 0.23                  | 18.31           | 18.08           | 13.88            | 86.12      | 14.06             | 85.94     |
| 2003                     | -0.24                 | 19.98           | 20.21           | 18.78            | 81.22      | 18.56             | 81.44     |
| Mean                     | -1.27                 | 22.79           | 24.07           | 15.09            | 84.90      | 16.44             | 83.55     |
| Standard Deviation       | 1.90                  | 3.59            | 4.33            | 8.25             | 8.25       | 10.32             | 10.32     |
| Coefficient of Variation | -1.48                 | 0.15            | 0.17            | 0.54             | 0.09       | 0.62              | 0.12      |

**Table 10: The Nature of Employment Change (%), 1991 – 2003: Services**

| Year                     | Net Employment Growth | Engagement Rate | Separation Rate | Transfer-In Rate | Hires Rate | Transfer-Out Rate | Quit Rate |
|--------------------------|-----------------------|-----------------|-----------------|------------------|------------|-------------------|-----------|
| 1991                     | 2.09                  | 22.77           | 20.68           | 10.73            | 89.27      | 12.86             | 87.32     |
| 1992                     | 2.47                  | 22.21           | 19.75           | 14.87            | 85.13      | 15.31             | 84.69     |
| 1993                     | 1.71                  | 19.85           | 18.14           | 9.76             | 90.24      | 10.13             | 89.87     |
| 1994                     | 0.27                  | 19.50           | 19.24           | 11.36            | 88.64      | 13.66             | 86.36     |
| 1995                     | 0.20                  | 18.01           | 17.80           | 11.64            | 88.36      | 11.69             | 88.31     |
| 1996                     | 2.72                  | 20.85           | 18.13           | 15.28            | 84.72      | 13.76             | 86.24     |
| 1997                     | 1.22                  | 21.29           | 20.06           | 14.64            | 85.36      | 11.90             | 88.10     |
| 1998                     | 1.32                  | 21.57           | 20.25           | 15.39            | 84.61      | 16.37             | 83.63     |
| 1999                     | -0.16                 | 19.21           | 19.37           | 14.01            | 85.99      | 14.00             | 86.00     |
| 2000                     | -0.42                 | 19.35           | 19.77           | 13.41            | 86.59      | 13.53             | 86.47     |
| 2001                     | 0.28                  | 21.33           | 21.05           | 12.07            | 87.93      | 13.51             | 86.49     |
| 2002                     | 0.88                  | 20.01           | 19.13           | 14.51            | 85.49      | 12.93             | 87.07     |
| 2003                     | -0.37                 | 20.70           | 21.07           | 12.94            | 87.06      | 12.33             | 87.67     |
| Mean                     | 0.94                  | 20.51           | 19.57           | 13.12            | 86.87      | 13.21             | 86.78     |
| Standard Deviation       | 1.07                  | 1.34            | 1.08            | 1.85             | 1.85       | 1.59              | 1.59      |
| Coefficient of Variation | 1.14                  | 0.06            | 0.05            | 0.02             | 0.02       | 0.12              | 0.01      |

**Table 11: Quits and Hires, in Establishments Employing over 1,000 employees**

|   | 1991    | 1992    | 1993  | 1994    | 1995   | 1996  | 1997  | 1998   | 1999    | 2000    | 2001    | 2002    | 2003    |
|---|---------|---------|-------|---------|--------|-------|-------|--------|---------|---------|---------|---------|---------|
| Total Hires ('000s)                                 | 1,185.1 | 1,075.4 | 990.4 | 859.8   | 807.4  | 852.1 | 842.6 | 789.2  | 1,009.5 | 1,005.0 | 1,061.5 | 1,050.3 | 1,092.8 |
| Total Quits ('000s)                                 | 985.2   | 956.0   | 979.4 | 1,002.8 | 983.5  | 941.0 | 898.6 | 896.3  | 1,116.8 | 1,157.3 | 1,266.9 | 1,276.8 | 1,219.6 |
| Hires minus Quits ('000s)                           | 199.9   | 119.4   | 11.0  | -14.3   | -176.2 | -88.9 | -56.0 | -107.1 | -107.3  | -152.3  | -205.4  | -226.5  | -126.8  |
| Females, as a percentage of total hires             | 53.47   | 53.61   | 55.11 | 54.10   | 56.95  | 54.24 | 55.39 | 53.19  | 57.87   | 54.71   | 59.32   | 54.32   | 59.91   |
| Females, as a percentage of total quits             | 55.86   | 57.18   | 54.31 | 56.10   | 56.64  | 56.98 | 54.51 | 53.06  | 53.95   | 52.67   | 55.72   | 51.59   | 57.74   |
| Part Time Employees, as a percentage of total hires | 23.67   | 28.17   | 24.12 | 26.45   | 30.01  | 33.39 | 29.97 | 28.60  | 47.40   | 39.48   | 46.38   | 44.12   | 46.84   |
| Part Time Employees, as a percentage of total quits | 22.61   | 24.61   | 23.59 | 24.78   | 22.90  | 30.15 | 27.26 | 26.79  | 40.59   | 35.51   | 36.93   | 33.98   | 44.54   |

Source: Survey on Employment Trends, Table 11 (for years 1991 – 1994), Table 12 (for year 1995) and Table 13 (for years 1996 – 2003).

**Table 12: Quits and Hires, in Establishments Employing 300 - 999 employees**

|   | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002   | 2003   |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Total Hires ('000s)                                 | 788.3 | 781.9 | 680.7 | 475.6 | 546.0 | 544.3 | 600.4 | 594.6 | 738.3 | 720.8 | 854.0 | 770.2  | 831.7  |
| Total Quits ('000s)                                 | 686.2 | 771.7 | 653.0 | 493.8 | 543.1 | 576.2 | 652.2 | 643.4 | 807.8 | 762.6 | 949.5 | 898.2  | 943.1  |
| Hires minus Quits ('000s)                           | 102.1 | 10.2  | 27.7  | -18.2 | 2.9   | -31.9 | -51.8 | -48.8 | -69.5 | -41.8 | -95.5 | -128.0 | -111.4 |
| Females, as a percentage of total hires             | 54.14 | 52.13 | 51.11 | 51.51 | 46.98 | 52.60 | 54.68 | 54.83 | 48.65 | 54.51 | 51.99 | 52.86  | 57.50  |
| Females, as a percentage of total quits             | 55.01 | 57.04 | 50.86 | 51.88 | 50.94 | 55.03 | 50.94 | 57.90 | 49.49 | 51.81 | 51.06 | 50.14  | 54.19  |
| Part Time Employees, as a percentage of total hires | 20.88 | 23.75 | 22.12 | 23.17 | 18.64 | 26.67 | 23.41 | 26.84 | 33.75 | 38.71 | 44.44 | 36.22  | 33.40  |
| Part Time Employees, as a percentage of total quits | 23.07 | 27.80 | 19.82 | 22.72 | 16.96 | 26.00 | 19.17 | 26.10 | 30.86 | 33.54 | 38.89 | 30.20  | 29.68  |

**Table 13: Quits and Hires, in Establishments Employing 100 -299 employees**

|   | 1991    | 1992    | 1993  | 1994   | 1995  | 1996  | 1997    | 1998  | 1999    | 2000    | 2001    | 2002   | 2003  |
|---|---------|---------|-------|--------|-------|-------|---------|-------|---------|---------|---------|--------|-------|
| Total Hires ('000s)                                 | 1,145.0 | 1,080.0 | 686.5 | 723.1  | 814.8 | 865.3 | 1,020.8 | 958.3 | 949.0   | 1,091.0 | 1,065.4 | 872.8  | 909.3 |
| Total Quits ('000s)                                 | 1,037.9 | 1,011.1 | 755.7 | 854.5  | 844.6 | 821.0 | 947.5   | 984.1 | 1,017.3 | 1,090.1 | 1,124.3 | 991.2  | 958.3 |
| Hires minus Quits ('000s)                           | 107.1   | 68.7    | -69.2 | -131.4 | -29.8 | 44.3  | 73.3    | -25.8 | -68.3   | 0.9     | -58.9   | -118.4 | -49.0 |
| Females, as a percentage of total hires             | 53.39   | 54.69   | 48.23 | 51.12  | 46.43 | 49.74 | 51.62   | 50.40 | 51.74   | 49.87   | 51.52   | 55.80  | 52.90 |
| Females, as a percentage of total quits             | 54.42   | 54.70   | 52.18 | 49.97  | 46.39 | 49.53 | 49.61   | 50.93 | 51.44   | 52.47   | 51.57   | 55.01  | 54.93 |
| Part Time Employees, as a percentage of total hires | 23.54   | 20.45   | 19.37 | 16.62  | 25.18 | 21.28 | 24.30   | 30.10 | 33.93   | 27.79   | 35.00   | 33.07  | 35.29 |
| Part Time Employees, as a percentage of total quits | 21.80   | 21.43   | 21.33 | 14.20  | 20.59 | 19.81 | 22.15   | 27.66 | 30.11   | 26.54   | 29.54   | 30.01  | 35.42 |

**Table 14: Quits and Hires, in Establishments Employing 30 – 99 employees**

|   | 1991    | 1992    | 1993    | 1994    | 1995    | 1996    | 1997    | 1998    | 1999    | 2000    | 2001    | 2002    | 2003    |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Total Hires ('000s)                                 | 1,175.2 | 1,095.2 | 1,112.3 | 1,131.4 | 1,172.5 | 1,145.1 | 1,188.0 | 1,151.8 | 1,297.0 | 1,212.7 | 1,257.4 | 1,198.1 | 1,397.2 |
| Total Quits ('000s)                                 | 1,092.6 | 1,016.9 | 1,148.0 | 1,155.1 | 1,149.2 | 1,132.4 | 1,215.3 | 1,329.4 | 1,306.9 | 1,336.5 | 1,370.6 | 1,314.6 | 1,419.9 |
| Hires minus Quits ('000s)                           | 82.6    | 73.3    | -35.7   | -23.8   | 23.2    | 12.7    | -27.3   | -177.5  | -9.9    | -123.8  | -113.2  | -116.5  | -227.0  |
| Females, as a percentage of total hires             | 46.84   | 50.25   | 44.74   | 45.87   | 46.47   | 44.80   | 46.09   | 44.52   | 44.29   | 47.96   | 44.78   | 47.86   | 48.38   |
| Females, as a percentage of total quits             | 48.14   | 48.81   | 45.88   | 47.64   | 47.52   | 44.14   | 42.47   | 44.45   | 47.28   | 46.15   | 46.29   | 47.92   | 46.28   |
| Part Time Employees, as a percentage of total hires | 19.00   | 25.84   | 16.83   | 17.43   | 23.01   | 19.72   | 22.45   | 28.22   | 30.42   | 33.55   | 27.52   | 31.17   | 36.27   |
| Part Time Employees, as a percentage of total quits | 17.34   | 21.73   | 18.84   | 19.11   | 19.18   | 19.97   | 17.28   | 22.61   | 26.18   | 30.50   | 25.73   | 22.02   | 29.95   |

**Table 15: Quits and Hires in Establishments Employing 5 – 29 employees**

|   | 1991    | 1992    | 1993    | 1994    | 1995    | 1996    | 1997    | 1998    | 1999    | 2000    | 2001    | 2002    | 2003    |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Total Hires ('000s)                                 | 1,767.1 | 1,875.4 | 1,698.4 | 1,653.8 | 1,706.2 | 1,736.9 | 1,805.7 | 1,749.6 | 1,624.9 | 1,828.0 | 1,798.1 | 1,781.6 | 1,585.6 |
| Total Quits ('000s)                                 | 1,701.2 | 1,701.7 | 1,572.3 | 1,666.0 | 1,856.9 | 1,675.4 | 2,071.5 | 1,934.7 | 1,785.2 | 2,052.2 | 2,082.5 | 2,069.1 | 1,839.6 |
| Hires minus Quits ('000s)                           | 65.9    | 173.7   | 126.1   | -12.2   | -150.7  | 61.5    | -215.8  | -185.1  | -160.3  | -224.2  | -284.4  | -287.5  | -254.0  |
| Females, as a percentage of total hires             | 47.20   | 46.64   | 47.57   | 44.99   | 44.29   | 39.85   | 43.66   | 48.00   | 44.72   | 45.19   | 45.20   | 46.10   | 45.87   |
| Females, as a percentage of total quits             | 47.80   | 46.48   | 46.59   | 45.53   | 44.20   | 40.92   | 43.45   | 47.03   | 46.38   | 46.74   | 45.80   | 46.51   | 46.61   |
| Part Time Employees, as a percentage of total hires | 23.76   | 21.81   | 22.10   | 22.89   | 16.93   | 20.27   | 27.01   | 29.34   | 29.11   | 31.43   | 33.72   | 33.24   | 33.16   |
| Part Time Employees, as a percentage of total quits | 19.43   | 19.45   | 22.70   | 27.40   | 20.20   | 19.97   | 25.45   | 26.68   | 24.46   | 28.69   | 27.94   | 30.60   | 32.08   |

**Table 16: Total Quits and Total Hires, by Establishment Size: Some Comparative Results**

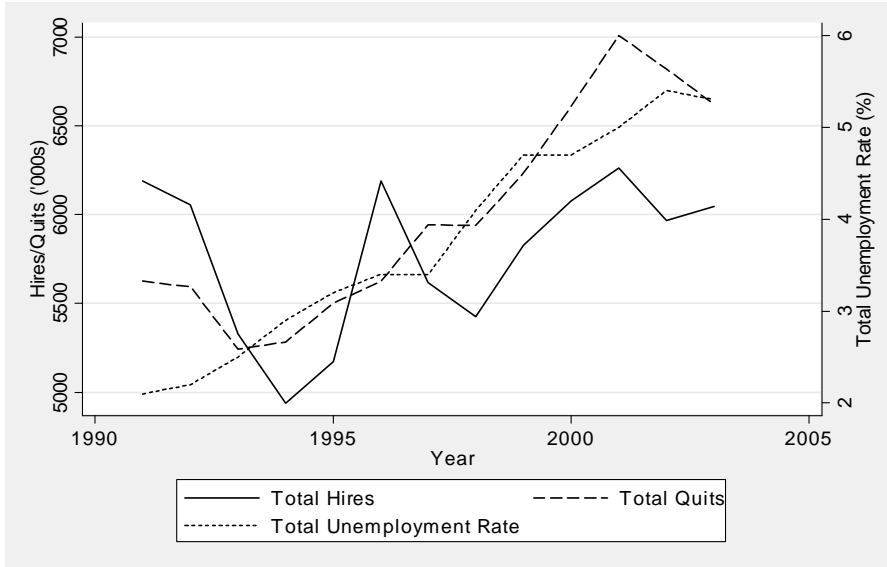
|  | Minimum<br>('000s) | Year of<br>minimum | Maximum<br>('000s) | Year of<br>Maximum | Range<br>('000s) | Mean<br>('000s) | Standard<br>Deviation | Coefficient<br>of<br>Variation |
|--|--------------------|--------------------|--------------------|--------------------|------------------|-----------------|-----------------------|--------------------------------|
| Hires: Establishment Size: 1,000<br>employees and over | 789.2              | 1998               | 1,185.1            | 1991               | 395.9            | 970.85          | 126.44                | 0.13                           |
| Quits: Establishment Size: 1,000<br>employees and over | 896.3              | 1998               | 1,276.8            | 2002               | 380.5            | 1,052.32        | 137.31                | 0.13                           |
| Hires: Establishment Size: 300 – 999<br>employees      | 475.6              | 1994               | 854.0              | 2001               | 378.4            | 686.67          | 122.40                | 0.17                           |
| Quits: Establishment Size: 300 – 999<br>employees      | 493.8              | 1994               | 949.5              | 2001               | 455.7            | 721.60          | 148.77                | 0.20                           |
| Hires: Establishment Size: 100 – 299<br>employees      | 686.5              | 1993               | 1,145.0            | 1991               | 458.5            | 937.02          | 142.88                | 0.15                           |
| Quits: Establishment Size: 100 – 299<br>employees      | 755.7              | 1993               | 1,124.3            | 2001               | 368.6            | 956.7           | 109.15                | 0.11                           |
| Hires: Establishment Size: 29 – 99<br>employees        | 1,095.2            | 1992               | 1,397.2            | 2003               | 302.0            | 1,194.9         | 82.49                 | 0.07                           |
| Quits: Establishment Size: 29 – 99<br>employees        | 1,016.9            | 1992               | 1,419.9            | 2003               | 403.0            | 1,229.8         | 123.49                | 0.10                           |
| Hires: Establishment Size: 5 – 29<br>employees         | 1,585.6            | 2003               | 1,875.4            | 1992               | 289.8            | 1,739.33        | 83.52                 | 0.04                           |
| Quits: Establishment Size: 5 – 29<br>employees         | 1,572.3            | 1993               | 2,082.5            | 2001               | 510.2            | 1,846.79        | 180.04                | 0.10                           |

## APPENDIX THREE: FIGURES REFERRED TO IN THE TEXT

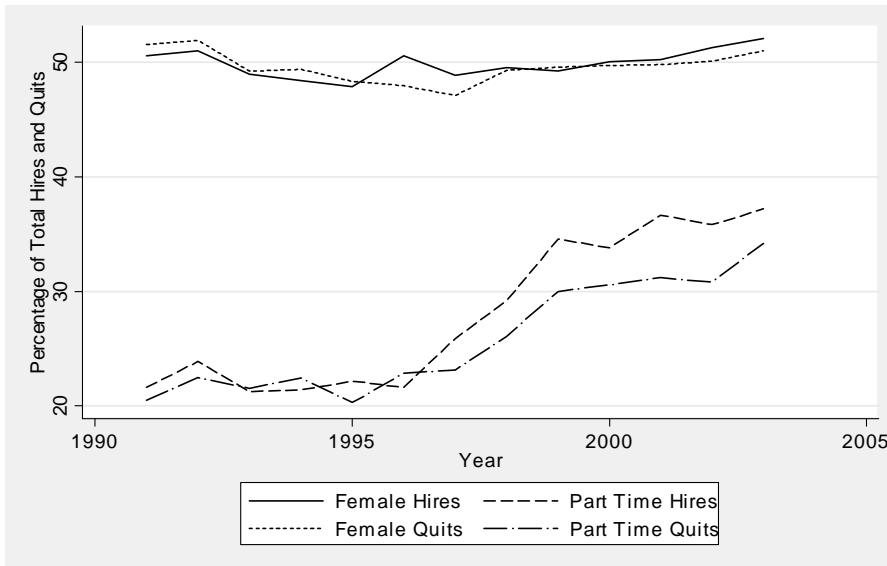
Figure 1: GDP and Unemployment, 1986-2003



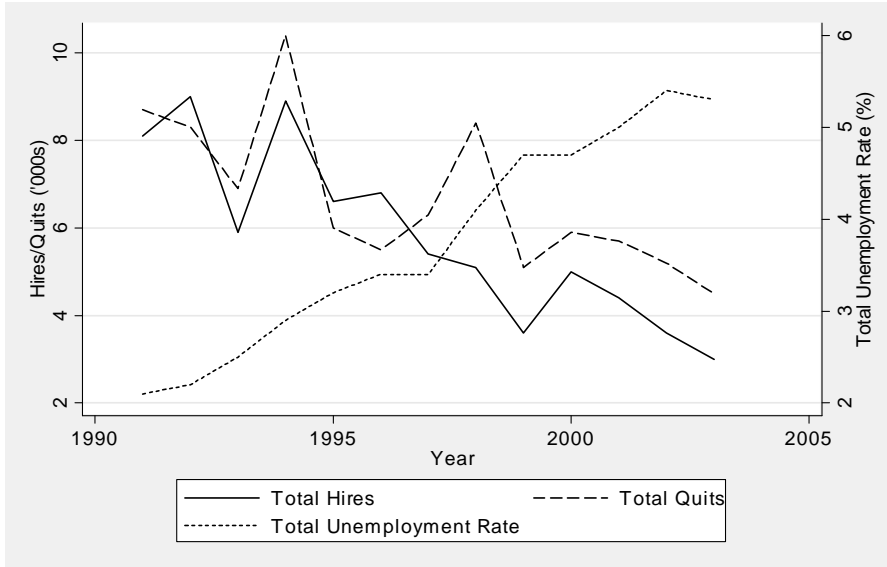
**Figure 2A: Hires and Quits (All Industries): 1991 – 2003**



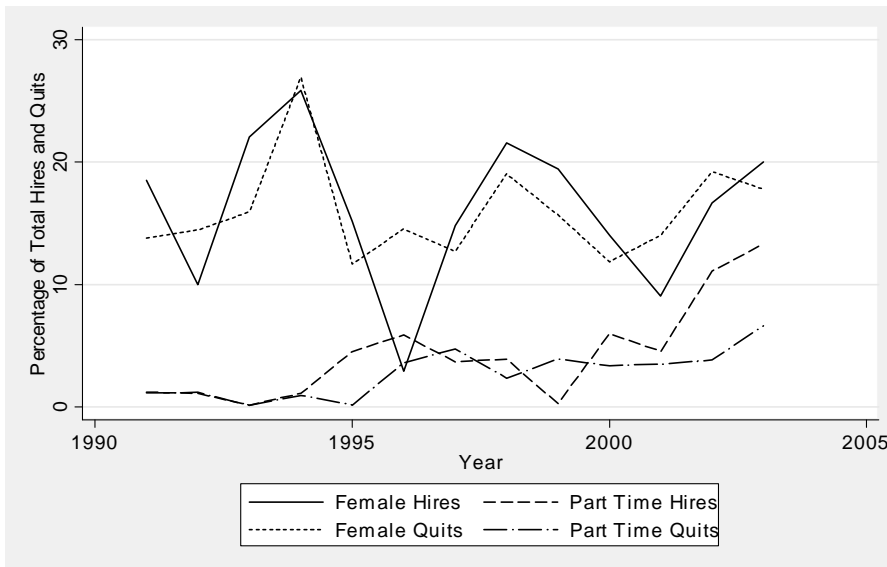
**Figure 2B: Quits and Hires (All Industries): Female and Part Time Employees: 1991-2003**



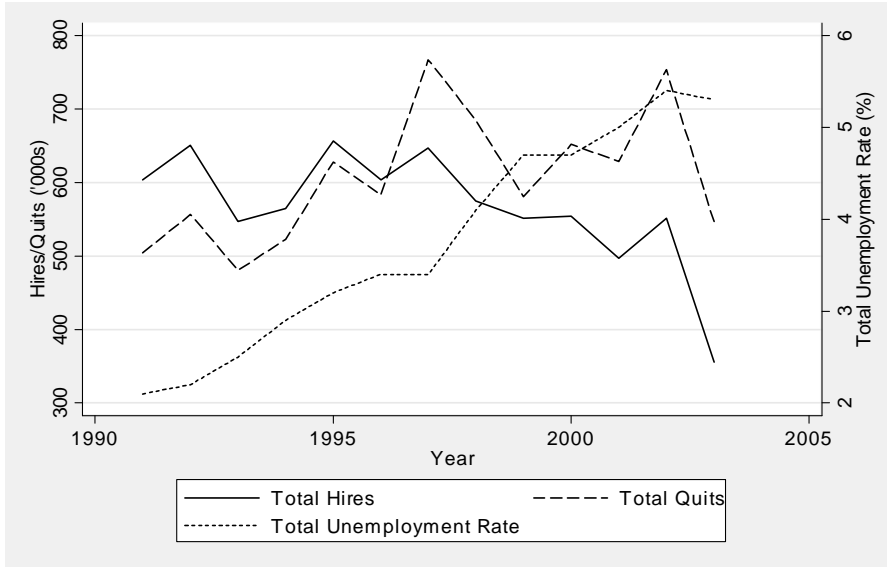
**Figure 3A: Hires and Quits (Mining): 1991 – 2003**



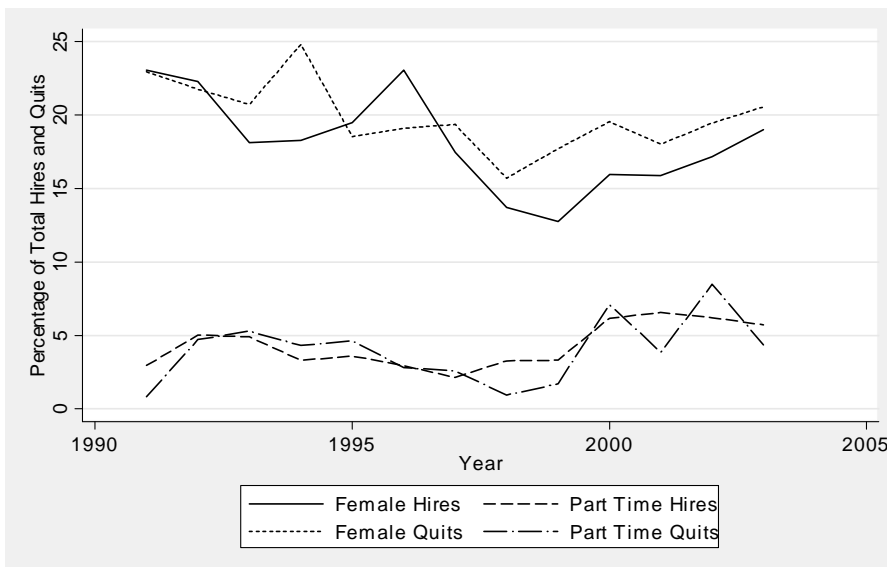
**Figure 3B: Quits and Hires (Mining): Female and Part Time Employees: 1991-2003**



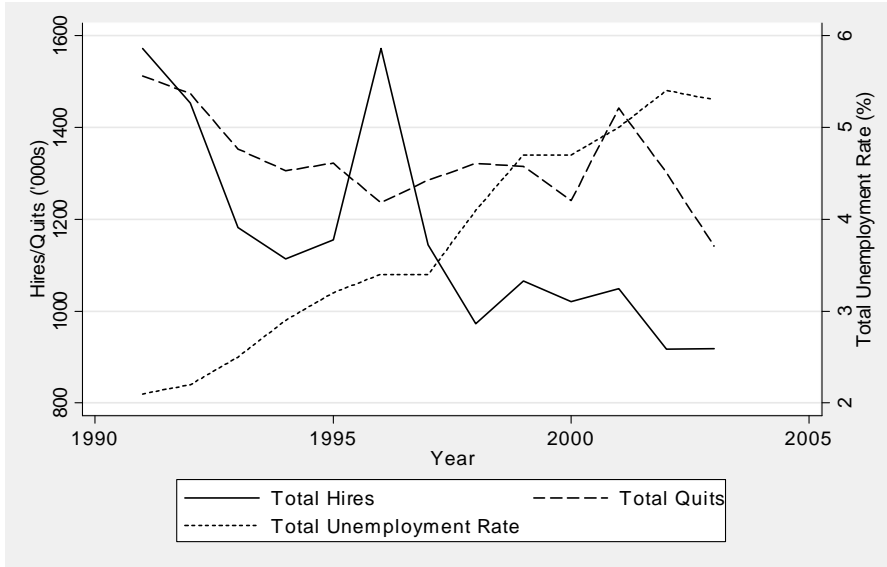
**Figure 4A: Hires and Quits (Construction): 1991 – 2003**



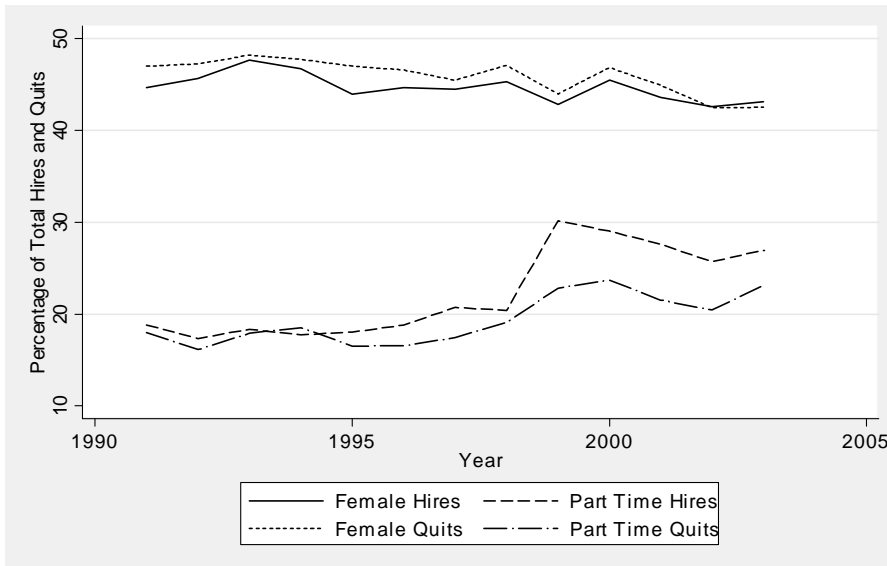
**Figure 4B: Quits and Hires (Construction): Female and Part Time Employees: 1991-2003**



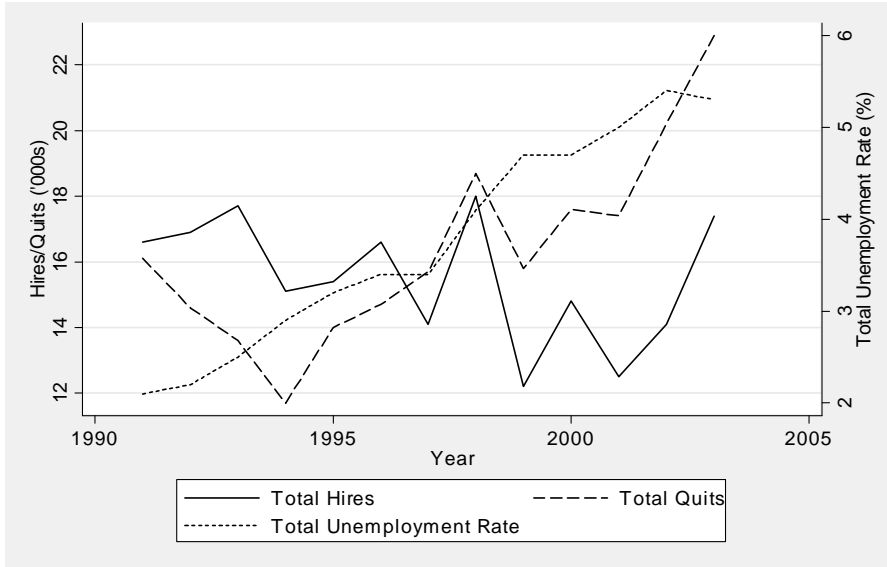
**Figure 5A: Hires and Quits (Manufacturing): 1991 – 2003**



**Figure 5B: Quits and Hires (Manufacturing): Female and Part Time Employees: 1991-2003**



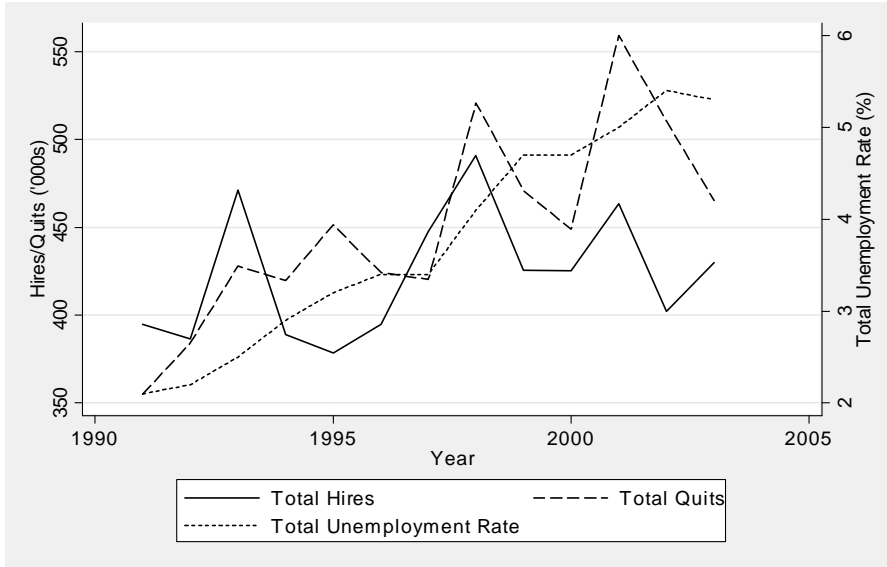
**Figure 6A: Hires and Quits (Electricity, Gas, Heat Supply and Water): 1991 – 2003**



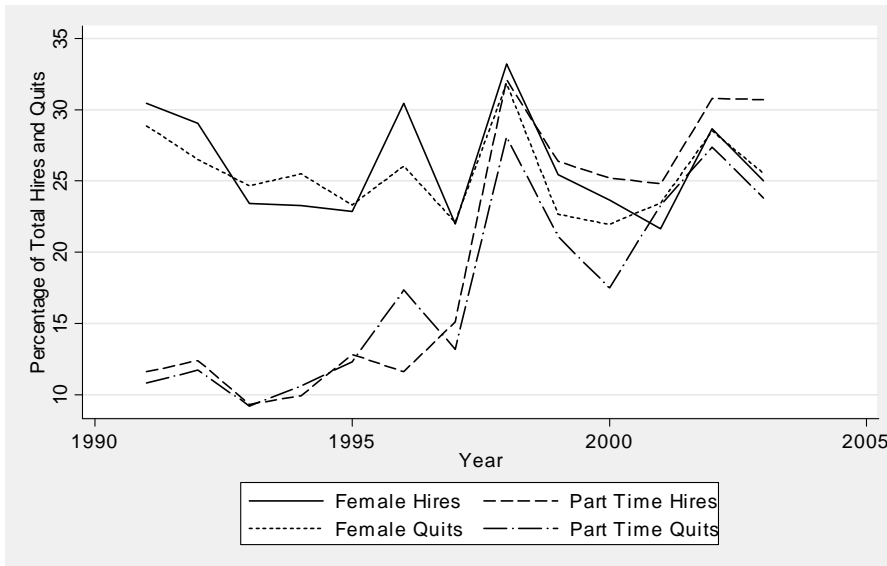
**Figure 6B: Quits and Hires (Electricity, Gas, Heat Supply and Water): Female and Part Time Employees: 1991-2003**



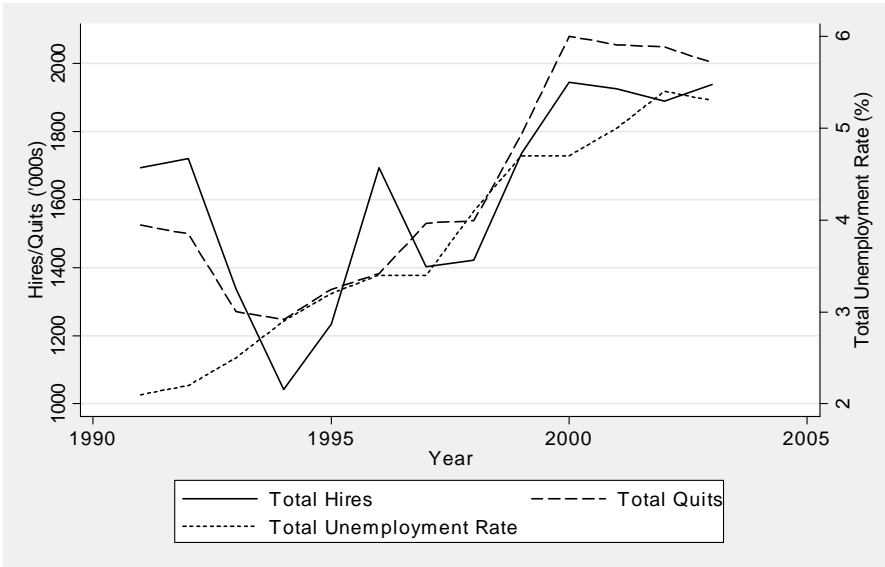
**Figure 7A: Hires and Quits (Transport and Communication): 1991 – 2003**



**Figure 7B: Quits and Hires (Transport and Communication): Female and Part Time Employees: 1991-2003**



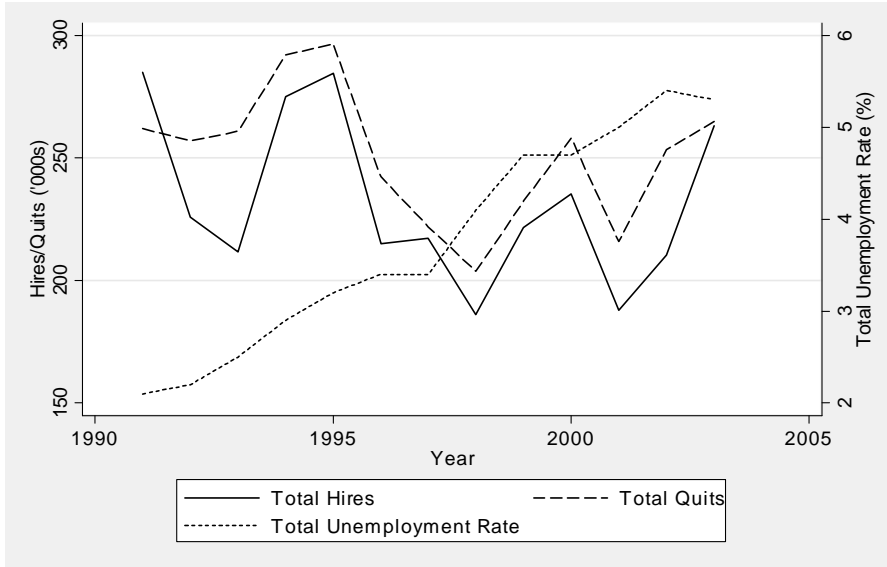
**Figure 8A: Hires and Quits (Wholesale and Retail Trade, Eating and Drinking Places): 1991 – 2003**



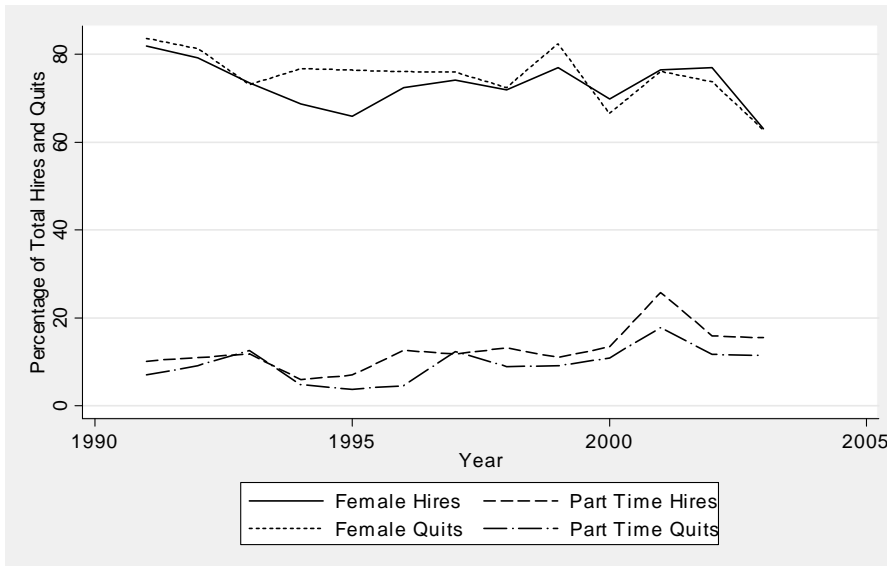
**Figure 8B: Quits and Hires (Wholesale and Retail Trade, Eating and Drinking Places): Female and Part Time Employees: 1991-2003**



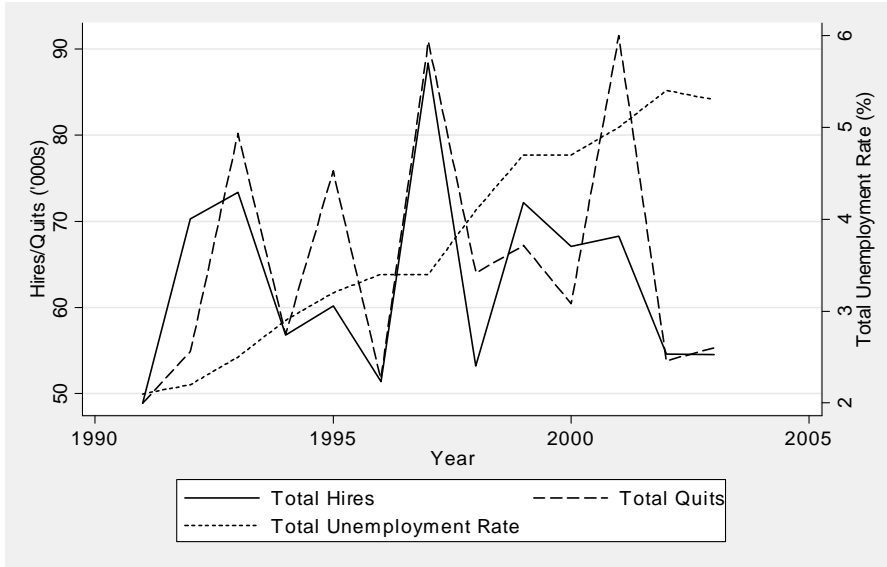
**Figure 9A: Hires and Quits (Financing and Insurance): 1991 – 2003**



**Figure 9B: Quits and Hires (Financing and Insurance): Female and Part Time Employees: 1991-2003**



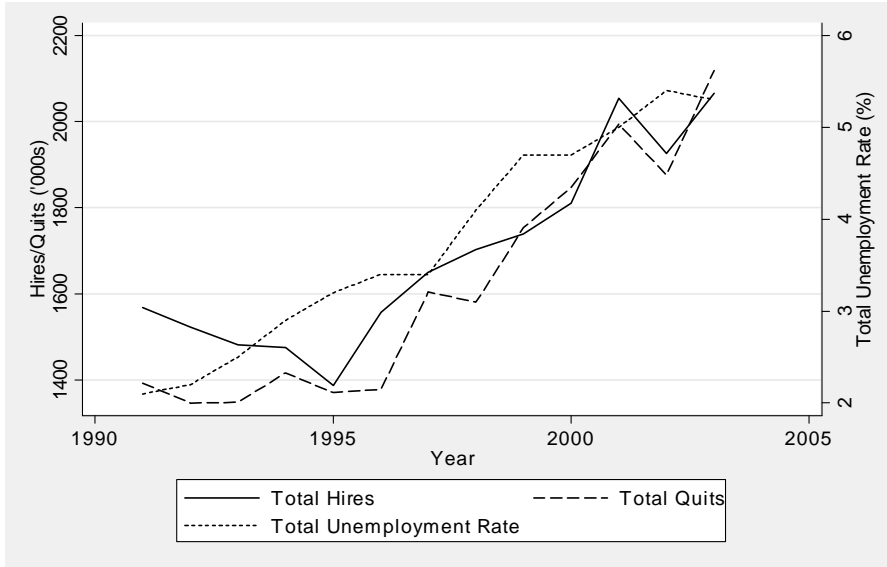
**Figure 10A: Hires and Quits (Real Estate): 1991 – 2003**



**Figure 10B: Quits and Hires (Real Estate): Female and Part Time Employees: 1991-2003**



**Figure 11A: Hires and Quits (Services): 1991 – 2003**



**Figure 11B: Quits and Hires (Services): Female and Part Time Employees: 1991-2003**

