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Nimble Fingers No Longer!

Women's Employment in Iran[*]

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Abstract

This paper reexamines the evolution of women's labor force participation (LFP) and employment in Iran in light of five decades of census data from 1956 to 2006. We show that changes in schooling and economic structure have fundamentally transformed the nature of female LFP and employment in the country. Although women's overall LFP rate was slow to recover following a sharp drop in the aftermath of the 1979 Revolution, it has gathered momentum in recent years. More importantly, an increasingly larger proportion of educated women aged 20-50 years are employed in the private sector in professional positions in urban areas. This is quite different from the expansion of female employment before the Revolution, which predominantly consisted of jobs for very young, uneducated women in rural areas mostly as unpaid family workers in producing carpets and handicraft. We argue that economic and political factors after the Revolution have played central roles in shaping the new trends and show that they are likely to have played a far more important part than ideological ones, particularly Islamization, did in reducing female LFP and employment during the first decade of the Revolution. The reduction in female employment during that decade was essentially due to declines of private sector jobs, particularly low skill ones in rural handicrafts, closely connected with the disruption of production and trade in the aftermath of Revolution and the Iran-Iraq War. In recent years, however, it is unemployment among educated women that has risen sharply because their entry into the labor force has significantly outpaced their ability of find jobs. Still, this problem may be temporary because the service sector where female employment is most common and where the value added per worker is greater than in the rest of the economy is growing faster than other sectors.

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1. Introduction

This paper re-examines the patterns of women's economic activity in Iran over the past half century in light of the country's 2006 census figures. Women's role in public life has long been a central social and political issue in Iran and gained particular prominence with the Islamic Revolution of 1979. The Revolution was followed by major changes in female employment and labor force participation (LFP), which became the subject of hot debates. Many scholars and other observers view Islamic religious rules as impediments to women's participation in the labor market, and find confirmation for that view in the decline and subsequent slow recovery of the female LFP rate in the wake of the Revolution (V. Moghadam, 1988, 1991; F. Moghadam, 1994; Moghissi, 1996; Afshar, 1997; Behdad and Nomani, 2006). Others, pointing to the massive expansion of female schooling and professional activity, argue that "Islamization" may have in fact facilitated education, mobilization, and participation in public life for most women by creating an environment acceptable to the culturally conservative majority of the population (Paidar, 1995; Kian, 1997; Hoodfar, 1999; Poya, 1999; Mehran, 2003; Bahramitash, 2007).[1] Meanwhile, many factors other than Islamization—e.g., demographic change, formation of new institutions, as well as internal and external shocks—have also been at work in complex and dynamic ways, influencing labor market conditions and interacting with the Islamization process. These complexities make it difficult to assess the full impact of the Revolution on women's role in the economy; hence the need to re-assess these hypotheses as new data become available and more long-term trends can be better mapped.

While the data from the first two decades of the Revolution seemed to suggest marginalization of women in the labor market, recent more detailed data and longer term trends point to a more nuanced picture. The role of Islamization appears to have been quite complex, especially beyond the chaotic first decade of the Revolution, and to have interacted with many other factors in shaping the labor market for Iranian women. Despite hindrances in some respects, Islamization along with other factors may have helped improve women's employment conditions in some other respects. Notably, the social and political environment after the Revolution was apparently consistent with the rapid extension of education beyond the modern middle and upper classes. Availability of substantial resource rents and the disposition of the government to distribute resources more equally have further supported the expansion of education and have helped drastically change the structure of women's labor force and the nature of the jobs available to them in Iran. The result has been an accelerated rise in the share of adult women in total employment after

[1] By "Islamization" we mean the effort by Islamists (i.e., those who view Islam not just as a voluntary religion, but also as a political and social system) to apply rules that they view as Islamic on society, groups, and individuals.

its drop in the 1980s, appreciably surpassing the pre-Revolution levels by 2006, at the same time that schooling and retirement options and the social safety nets have improved and expanded.

As we show in this paper, the mode of women's employment in Iran, which before the Revolution was low-pay or unpaid family work in the rural carpet industry for very young women with little education, has been shifting towards more professional service occupations for educated women aged 25-50 years. Employed women are also increasingly working in the private sector and taking on managerial and entrepreneurial roles. Young women in both rural and urban areas, attend school more often than joining the carpet and cottage industry workforce, which was the main source of increase in female employment in the 1960s and 1970s. Interestingly, the current pattern of economic development in Iran is also shifting the sources of growth towards services, especially professional services, which better match the growing education and job preferences of the new generations of women. These shifts are likely to have significant consequences for Iran's economic and political developments in the coming decades. Already it is tangible in daily activities across the country. One finds women more and more frequently in skilled and professional positions, from taxi driver, to real state developers to engineers. Also, a growing number of them have established their own businesses, some that have expended to other countries, ranging from central Asia to Africa. It is also notable that many rules advocated in the past as "Islamic", which emphasized gender segregation at the cost of professional merit, seem to be fading away in everyday practice. Going to clinics in Tehran or in provincial towns, it is no longer unusual to see female doctors attending male as well as female patients.

A downside of the shifts in the pattern of women's LFP has been a major rise in unemployment rates for women below 30 years. While the number of women participating in the labor force in their twenties went up almost 2.4 times between 1976 and 2006, the number of those holding jobs rose only 1.6 times, with the rest swelling the ranks of the unemployed. As a result, in that age group, women comprised 31.5 percent of all the unemployed in 2006, compared to 26 percent in 1976. Interestingly, exactly the opposite has happened for women in their thirties and over, whose share has gone down from 23.3 percent to 17.2 percent among the unemployed and up from 8.3 to 12.3 percent among the employed during the same period. This is particularly important because, as we ague below, it indicates that a substantial part of the high unemployment rate among young women is transitory.

The increase in women's labor market role in Iran is parallel to the situation in most other countries. However, there are also notable differences. In particular, a significant part of the increase in women's employment in many developing countries has been due to globalization and expansion of export zones where women are employed as cheap flexible labor (Standing, 1999; Elson, 1999; Elson and Cataway, 2000; Loutfi, 2001; Beneria, 2002; Beneria, 2003; Bahramitash, 2005). Those jobs, which are

mostly in manufacturing for export, rely on women's skills to perform menial jobs with their nimble fingers (Elson and Pearson, 1981; Safa, 1981; Beneria, 2003; Caraway 2005). In Iran, the trend has been the opposite: Women have increasingly left nimble-finger jobs in carpet industry to go to school and take on clerical, technical, and professional positions.

Our analysis in this paper is based on decennial census data from 1956 to 2006 available from the Statistical Center of Iran (SCI), www.sci.org.ir. A number of other studies of female LFP and employment in Iran also use census data, but cover only data until 1996 (e.g., Mehryar et al., 2004; Behdad and Nomani, 2006). A few studies have gone beyond the 1996 census, using Household Expenditure and Income Surveys (HEIS) and Socio-economic Characteristics of Households (SECH) datasets produced by SCI (e.g., Salehi-Isfahani, 2005b; Salehi-Isfahani and Marku. 2006). However, those surveys are available only for the years after 1984, precluding comparisons with pre-Revolution times. Also, the margins of error in those samples appear to be large because the statistical distributions concern the role of women in labor force are in some respects at variance with census results.[2]

Our analysis benefits from 2006 census data, which has been made available recently. These data enable us to better map labor market trends after the Revolution and to sketch the longitudinal profiles of labor market experience for various cohorts of Iranian women over the past half a century. We analyze these outcomes in the broader context of overall trends in the economy in order to better separate the role of different factors. The result is a much richer picture of the trends in the evolution of the female labor market.

The rest of this paper is organized as follows. Section 2 starts with a brief overview of the economic performance of Iran since the 1950s. Section 3 examines the aggregate trends in women's LFP and employment. Section 4 reviews the sectoral pattern of female employment and sections 5 and 6 analyze the role of the age structure and education. Section 7 deals with the trends in women's occupations and positions in the labor market. Finally, section 8 concludes with a discussion of likely opportunities and challenges for Iranian women in the coming decades.

2. Iran's Economy since the 1950s: An Overview

In order to understand female employment, it is important to place its trend within a larger frame of overall economic growth and structural transformation in Iran since the 1950s. Tables 1 and 2 present the basic data for the past five decades. As Table 1 shows, Iran's economy experienced a period of rapid

[2] For example, using the SECH data, Salehi-Isfahani (2005) finds the countrywide LFP rate for women aged 25-64 in 2001 to be 24.6 percent, which is far higher than the 14 percent one finds based on 2006 census data.

and stable growth from the mid-1950s until the mid-1970s. During that period, the population and labor force also grew rapidly and became urbanized at a fast pace. The share of agriculture as a source of value added and of employment sharply declined, while that of the service and especially the industrial sectors grew (Table 2). Though absolute labor productivity increased in all sectors of the economy, the process was much slower in agriculture and fastest in industry. Consequently, the process of economic growth and structural transformation in Iran was associated with a decline in the relative productivity of agricultural labor and a corresponding rise for industrial labor (Table 2). Interestingly, these productivity trends went against the normal pattern of structural transformation in developing countries, where labor productivity in agriculture is initially very low compared to industry and migration of labor out of agriculture tends to play an equalizing role (see World Bank, 2000: Chapter 9). The outcome in Iran was different for two reasons, both important for women's employment. First, until the 1950s, the non-oil industrial sector in Iran was dominated by carpet weaving and handicrafts, relatively low productivity cottage industries that relied largely on young female workers. On the other hand, the emerging industries were modern and highly productive, thus raising the average labor productivity in the sector as a whole (Karshenas, 1990). These industries employed mostly male labor. Second, government policy was far more supportive of capital formation in industry as compared to agriculture via its credit, trade, and public investment policies (Karshenas, 1990). These observations hold whether or not one includes the low-employment/high-value-added oil sector among the industries, as we do in Tables 1 and 2.

After the Revolution of 1979, especially during the Iran-Iraq War of 1980-1988, per capita GDP sharply declined and inflation accelerated (Table 1). Population and labor force growth rates increased, but urbanization proceeded at a somewhat slower pace. Disruptions in production and trade affected industry much more than agriculture and led to a notable increase in the share of agriculture (Mojtahed and Esfahani, 1989). The revolutionary government's concern about food security and self-sufficiency also contributed to the relatively better performance of agriculture, especially through increases in technical support, investment, and provision of inputs. However, employment in agriculture continued to decline, thus raising the relative labor productivity in the sector (Table 2). The opposite was the case for the service sector, which ended up absorbing large numbers of workers from agriculture and industry.

Iran's economic growth resumed after the end of Iran-Iraq war. But the recovery was cut short by the emergence of a balance of payments crisis in 1993, which substantially slowed economic growth and raised the inflation rate (Table 1). Growth gathered momentum and inflation subsided only after 2001 when oil prices increased. Meanwhile, urbanization proceeded at a steady pace and population growth rate dropped sharply. The impact of population growth on the labor force was delayed as the pre-1990 baby-boomers went through school and entered the market at very fast rates after 1996.

The boost in the relative standing of agriculture in the economy after the Revolution proved temporary. After 1990, agriculture's relative labor productivity and shares in value added and employment gradually fell, though not as fast as in the 1956-1976 period (Table 2). For industry, employment share steadily rose during 1986-2006, but the value added share and relative labor productivity declined during the last decade after some recovery between 1986 and 1996. Employment in the service sector has also continued to grow, though the behavior of its value added and employment shares have been the opposite of those in industry. Of particular significance for the role of women in the labor market is the recent rise in employment, value added share, and relative productivity in the service sector, where female employment has been rising fastest. We will explore this interaction in more detail below.

Services now form the most important non-oil sector of the Iranian economy by all measures. This is in some ways similar to the pattern of growth in many other developing countries. However, it is far more pronounced in Iran because of the large oil export revenues, which have allowed imports to rise and compete with agriculture and industrial production, but have boosted the demand for domestic services, which are largely non-tradable. As a result, the service sector has continued to increase its share of employment since the 1950s. The relative productivity in services has also been consistently higher than the other sectors, though it experienced a sharp drop in the first decade of the Revolution associated with a jump in its employment share. Relative labor productivity of the service secotr rose in the 1950s and 1960s, and again in the 1990s, as the economy grew and the government developed new institutions that boosted the opportunities for the expansion of modern services—education, medicine, finance, law, engineering, and the like.

To sum up, economic growth was high before the Revolution, declined sharply in the 1980s, and remained low during most of the 1990s. Population growth before 1990 brought large cohorts of young people to the labor market, with at an accelerated pace after 1996. The service sector has been the largest and most productive part of Iran's economy outside the oil industry, and remains the fastest growing sector with significant employment possibilities for women. Agriculture, on the other hand, has shrunk over the past decades, despite a temporary improvement in its relative position during the decade of economic decline after the Revolution. Industry has fared better than agriculture and has kept its relative position more or less constant since the 1970s.

3. Women's LFP and Employment in Iran: Aggregate Trends

The middle rows of Table 1 show that in 1956, Iran's labor force in the age range of 10 years and over consisted of about 0.6 million women and 5.5 million men. By 1976, the number of women had expanded by more than 150 percent to over 1.4 million, while the ranks of men had increased by only about 50 percent to 8.3 million. As a result, the share of women in labor force rose from 9.5 percent in

1956 to 14.8 percent in 1976. In the following decade the number of men in the labor force increased by another 38 percent, while that of women declined by 10 percent, bringing down the share of women to 10.2 percent in 1986. Since then, however, the size of female labor force has again grown much faster, by almost 180 percent growth to over 3.6 million in 2006 as compared about 70 percent for men to about 20 million. The share of women in the labor force reached 15.5 percent in 2006, going beyond the peak before the Revolution.

The evolution of women's share in Iran's LFP has been shaped by a host of factors—in particular, changes in age structure, urbanization and other social and economic trends, and political change and Islamization after the Revolution. As a starting point for the analysis of such factors, we examine the rural-urban break down of the LFP rate and the trends in employment for the population aged 10 years and over shown in Table 3. The first rows of the table show that the share of women in Iran's population has been well below 50 percent. The gap was larger in urban areas and became particularly visible during the 1960s and 1970s, when men comprised the absolute majority of rural-urban migrants. That trend was reversed after the 1980s, when migration of women increased and some rural areas gained urban status. These shifts have moved the mode of female employment from rural to urban areas.

Comparing women's share in total labor force in urban and rural areas quickly reveals that the rapid growth of female LFP before the Revolution and its decline and slow recovery afterwards have been largely rural phenomena. In urban areas, the share of women in labor force had actually started to decline before the Revolution and began to recover after the mid-1980s, surpassing its pre-Revolution peak by 1996 and reaching much higher levels by 2006. More importantly, most of the rise and decline of female share in labor force during 1956-1986 can be attributed to entry and exit of very young women aged 10-19 years, especially in rural areas. In the absence of that group, the picture changes more dramatically, as shown in Table 4, which reproduces the same indicators as in Table 3, but with a focus on the population aged 20 years and older. It is clear from the fifth row of Table 4 that among urban labor force participants beyond teenage years, the share of women has increased since 1956 almost without interruption. Interestingly, it has accelerated since the mid-1990s and is now at a level much higher than it was before the revolution. The main source of decline in the labor force share of women in this age group was the withdrawal of rural women from the labor market, which seems to have been mainly caused by disruptions in trade and production, as we show in the following section.

These observations challenge the presumed impact of Islamization on female employment because Islamization was essentially an urban issue. Indeed, much of Iran's rural areas had never been "Westernized" in the first place to require Islamization after the Revolution. While it is true that middle class and elite women who refused to wear the veil were forced or chose to leave their jobs (F.

Moghadam, 1985), that effect turns out to have been marginal compared to the overall picture of urban female labor force. This observation should not be viewed as minimizing or justifying the losses of a visible group of women who were driven out of labor market by the Islamization process. Rather, it should be treated as a quantitative indicator of the extent of the problem. It is, of course, possible that many secular middle class and elite women lost their jobs and were replaced by those who were more willing to conform to the rules of behavior after the Revolution. However, as we argue based on age and occupational structures of female employment after the Revolution, even that effect is unlikely to have been large in the context of the female labor market as a whole. (See also Salehi-Isfahani, 2005a).

In the literature on women and labor market in Iran, little attention has been paid to the role of youth aged 10-19 years in female labor force. To highlight that role further, in Table 5 we present data on the share of that group in female population, labor force, and employment. Between 1956 and1976, the share of this youth group in total female population aged 10 years and over rose from 25 percent to over 34 and remained in that range until recently when it returned to 25 percent. Their share in labor force initially rose from 27 percent in 1956 to almost 37 percent in 1966 and then declined somewhat to 34.5 percent in 1976. It is notable that over-representation of teenagers in female labor force was particularly high in rural areas, where their labor force share reached 132 percent of their population share in 1966. (See the top half of rows in Table 5.) As we will discuss later, the presence of this large and growing teenage labor force is closely connected with the expansion of carpet industry in Iran. The process was similar to the situation in many other developing countries where young women are employed in large numbers at low wages in export processing zones (Afshar 1991, Lim 1993 Beneria and Rodan 1987, Braunstein 2000, Caraway 2005, Bahramitash 2005). Rising oil revenues and incomes and expansion of education had started curbing such opportunities in Iran in the 1970s, especially in urban areas. However, after the Revolution the decline in the teenagers' labor force share accelerated and by 2006 dropped to one half of their population share. Interestingly, this happened even in the 1980s and 1990s when the economy was declining or stagnating, though education did increase, especially in rural areas (see below).

Participation in labor force does not necessarily translate into employment and the deviation between the two can be different for men and women. This has indeed been the case in Iran. The shares of women in employment, shown in the mid-rows of Tables 3 and 4, more or less follow the same trends as their shares in labor force do, except for the rise and decline of teenage employment (Table 5) and changes in unemployment. In most decades women's entry into the labor market has not been matched with sufficient job creation for them, especially for younger women (Table 5). As a result, female unemployment has been a major problem for women seeking jobs both before and after the Revolution, though it has grown more serious in recent years: In the unemployment pool, women are represented

almost twice as frequently as they are in the labor force. (See the bottom panels of Tables 3 and 4). Also, the locus of female unemployment problem has shifted from rural areas before the Revolution to urban areas since the 1980s. Although, as we will see below, skill structure and demographic factors explain a portion of the imbalances, another important part is likely to be due to discrimination and other social factors that work against women's employment. Islamization does not seem to be an important factor of this kind because the share of women in the unemployment pool had risen sharply before the Revolution and, in fact, fell during 1976-1986.

4. Sectoral Structure of Female Employment

As we have seen, the share of agricultural sector in total employment in Iran has had a systematic and sharp downward trend. However, when one focuses on the structure of female employment, that decline turns out to be less pronounced, with a temporary upturn during the 1980s (Figure 1). Indeed, women's share in agricultural employment has risen consistently over the past five decades (Table 6). This rise was rather sharp during 1956-1966 and slowed down afterwards until 1996, when it accelerated again. Though the share still remains relatively low (about 11 percent), this feminization of the agricultural sector is in line with the trends in other developing countries (Cagaty and Ozler 1995). Throughout much of the South, women tend to take over jobs in low productivity, low wage and declining sector as many men migrate to other activities where employment opportunities are far better (Beneria 2003). In Iran, however, this pattern seems to be limited to a small part of the economy and a declining share of the female labor force, primarily in the rural sector. Only about 15 percent of women work in agriculture nowadays, as opposed to about 25 percent two decades ago. Also, the share of age group 10-19 in female agricultural employment has declined at about the same pace, though slower than in other sectors (Table 5).

The manufacturing sector was the scene of a dramatic decline in female employment. As Figure 1 indicates, manufacturing was by far the largest source of employment for women before the 1980s. It started to decline after the mid-1960s, a process that sharply accelerated after the Revolution, with a temporary recovery between 1986 and 1996. The same pattern can be seen in the share of women in total manufacturing labor force (Table 6). A closer look at the situation captured in the census data reveals that between 80 and 90 percent of women's manufacturing employment in the past has consisted of very low paying jobs in rural areas for very young, uneducated women in the carpet and cottage industry textile production. Indeed, teenagers comprised a rising share of the manufacturing female employment until 1986, especially rural areas where it reached over 60 percent (see Table 5). However, there has been a sharp decline in teenage female employment from 55 percent of female manufacturing employees in 1986

to only 20 percent in 2006. This has been partly due to rural-urban and sectoral shifts in employment location as well as the downward trends in teenage employment in both rural and urban areas.

It is also notable that even the large increase of female employment in manufacturing between 1986 and 1996 was essentially due to such employment (accounting for almost 85 percent of the increase in total manufacturing employment for women from 216320 in 1986 to 583156 in 1996). Indeed, the ups and downs in women's manufacturing employment are closely correlated with carpet exports (see Figure 2). Both variables were on the rise, reached high levels in the 1960s, and then declined in the 1970s as oil revenues rose and the Iran's real exchange appreciated (i.e., wages and local costs increased relative to prices of tradable goods). After the Revolution, there was a sharp drop due to economic turmoil, restrictive policies, and foreign sanctions. The industry experienced some recovery in the early 1990s, but then started a process of slow decline as competition from other countries, especially China intensified.

As illustrated in Figure 1, it is the social, personal, and financial service activities (comprising about 50 percent of total service sector position) that provide the largest share of employment for women since 1986, reaching almost 50 percent of the total in 2006. Other services, especially sales and restaurants, have also been a rising source of employment for women, though their share still remains relatively small. As further shown in Table 6, the social, personal, and financial service sector had a declining female employment share during the two decades prior to the Revolution. The decline continued for another decade after the Revolution, but then it picked up and sharply increased. These processes have happened in both in rural and urban areas, though women have much greater presence in these services—almost twice in terms of employment share—in urban areas than in rural areas.

The service sector share of female employment is critical because it illustrates that although its relative productivity and value added share were high before the revolution, women's share of employment was declining. In the aftermath of the revolution and once its relative productivity dramatically decreased women's share in its employment increased. This seems typical of female labor, when a sector's productivity decreases women's employment gets clustered around it (Anker 1998). However, it is notable that since the mid-1980s, the rapid rise in the share of women in this sector has been associated with increased valued added share and an upward edge in relative factor productivity.

A key segment of the social, personal, and financial service sector where women's presence is particularly visible is education, healthcare, and social services. Indeed, jobs in these activities comprise 60-70 percent of all female employment in the service sector. As further shown in Table 6, the share of women in employment in those activities has been on the rise, except for a small drop after the Revolution. In recent years, that share has reached almost 50 percent in the economy as a whole. In urban areas, the share is even higher than 50 percent. Increased presence of female service providers in these

areas has had important consequences for their expansion, especially in rural and low-income urban areas. In particular, much of the rising education among girls has been because teachers are women and Islamization has made attending schools more acceptable to the socially conservative population. One example of this process is the nationwide literacy campaign, which was conceived as a "jihad" and in many cases its classes were held in mosques. These classes were extremely accessible to religious and low income women and since it was viewed as a religious duty, women were able to attend classes even when their families might have wanted to prevent them. As a result, basic literacy and educational programs for such groups became very successful in part because of sexual segregation (Poya, 1999, 2001; Bahramitash, 2003; Mehran, 2003). Islamization and segregation also facilitated the expansion women's employment in education, health, and social services. On the demand side, the government had to hire large numbers of women to implement the segregation policies. On the supply side, more women from conservative background could come forward because the work space could be confined to women and the professional positions were highly respected. Whether in the long run segregation will be sustained and will prove harmful for further progress in women's economic lives remains to be seen. However, there are already some signs that women's growing role as professionals is bringing down some barriers (e.g., female doctors attending male patients and rising number of women in traditionally male professions such as engineering). Interestingly, the new atmosphere has even enabled rural women to migrate to urban areas, seek employment in these professions, and live independently, as we have observed in our field observations in various cities in Iran. We will return to this issue below when we analyze the data on organizational positions and occupations of employed women.

5. The Age Structure of Female Labor Force and Differential Cohorts Experiences

In this section, we examine Iranian women's experiences with LFP, employment, and unemployment in more detail. Table 7 offers an overview of the situation for "working-age" women defined as those aged 10 years and over. It shows that, in line with the share of women in labor force examined earlier, female LFP rate (share of "working-age" women participating in the labor market, whether employed or unemployed) had risen from 9.2 percent in 1956 to 12.6 percent in 1966, but then grew more slowly to 12.9 in 1976. It declined sharply after the Revolution and bottomed around 8.2 percent in 1986 and started to gradually recover afterwards, reaching 8.7 percent in 1991, 9.1 percent in 1996 and rising to 12.5 in 2006. By this measure, the female LFP rate is still somewhat below its pre-Revolutionary peak. However, as we have seen earlier, the picture changes when we set aside women below 10 years of age. We will explore this issue in more detail below.

The situation appears even less favorable for women's employment if one looks at the share of those in working age who actually have found jobs. That share actually peaked at 11.5 percent in 1966

and then declined to 10.8 in 1976 before falling precipitously to 6.1 percent in 1986. Although the share of women with jobs has risen since the mid-1980s, it was still no more than 9.6 percent in 2006. The decline after Revolution was actually more drastic than these figures suggest because the census data for 1966 and 1976 classified seasonally unemployed workers who were not seeking jobs as unemployed, while in other census years they were listed as employed. As a result, the employment rates in 1966 and 1976 were in fact somewhat higher than those reported in Table 7. However, since data is collected in the fall of each census year, the problem largely pertains to agricultural worker in rural areas. In urban areas, there was not much unemployment before the Revolution anyway and one can say with great certainty that the share of women holding jobs in 2006 was higher than in 1976, particularly if the age group below 20 is left out. However, unemployment (the divergence between LFP rate and share of working-age women with employment), which had increased during 1956-1986 and declined between 1986 and 1996, has again risen sharply in the past decade. This, of course, reflects the many remaining difficulties that women face in finding jobs. But, it also suggests notably that despite those difficulties, more women demand employment for pay.

Table 7 presents the LPF rate, employment share, and unemployment rate for men as well as women to provide a source of comparison. Note that rates at which men participated in the labor market and held jobs had declined steadily until 1996. Unlike women's situation in 1986, their LFP rate did not decline much after the Revolution, though their unemployment did rise noticeably. Since 1996, as the post-Revolution baby boom generation had entered the labor market, men's LFP rate, share of population with jobs, and unemployment rate have increased similar to those of women, though they have lost their shares to women in both employment and unemployment pools.

To explore some of the key factors behind the LFP and employment trends, we start by examining the role of age structure in detail. In Figures 3 and 4, we graph the female LFP rate for various age groups in urban and rural areas. The graph for 1956 in Figure 3 shows that the LFP pattern in urban areas had started in the 1950s with LFP rate of around 8 percent for the age group less than 35 years and about 11.5 percent for those 35-60. In the 1960s, as the post-WWII baby boomers entered the labor market, the curve became flatters around 10 percent, shifting upward for women in their 20s and downward for those over 35, especially the older cohorts. These shifts became much more pronounced in 1976 and the curve took a full humped shape, peaking for the large cohort born in the 1950s, aging around 20-24 at the time, and dropped sharply for women above 40, who seem to have retired in large numbers. By the time of 1986 census, many more urban women over 45 had left the labor market and there was somewhat less participation among those in their 20s, but the participation rate had gone up for the 30-44 age groups. This is important because it shows that the drop in the overall urban female LPF

rate after the Revolution had come via retirement of women over 45 and schooling, childbearing, or discouragement of cohorts below 30. Part of the decline may be due to the fact that many women in the 1980s worked as volunteers, especially in urban areas (Poya, 1999; Paidar, 1995; Rostami 2001). The early retirements or discouragements may have had ideological or political causes, but there was also a seemingly unintended policy factor: The government wanted to provide better income security to families with only one breadwinner and offered them some benefits, thus creating a disincentive for married women to seek employment or to keep their jobs (F. Moghadam, 2004). It is possible that the 30-44 age groups might have participated more under different conditions. However, the observed increases in the LFP rates are still noteworthy. As we will see below, this pattern can be attributed to the education and work experience of 30-44 groups, which played an indispensable role in education, healthcare, and social service activities. In any event, ten years later, in 1996, there was somewhat less participation among those below 25, but a clear rise in the presence of those 30-55 years old.

From 1996 to 2006, women cohorts younger than 20 years did not increase their LFP rates by much, largely due to schooling. However, there were major increases in the rates for all urban age groups above 20, especially among the post-Revolution baby boomers who had reached their 20s and finished their schooling. Benefiting from their higher levels of education, women in that generation are entering the labor market in large numbers. In addition, there have been concomitant increases in marriage age and divorce rate, leading to a significant rise in the share of single women in the population and contributing to women's the incentives to join the labor market (Salehi-Isfahani, 2005). Census data shows that while in 1976 single women comprises 66.2 percent of the female cohort aged 15-19 and 22.5 percent of those aged 20-24, by 2006 those percentages had reached 82.6 and 50.2 percents, respectively. The increases for women in their 30s are even more striking: In 1976, 2 percent of women in that age group were never married and 0.8 percent were divorced, compared to 9 and 1.4 percents, respectively, in 2006. (See also Kazmipour, 2007). These changes are important because the LFP rates of never married and divorced women are higher than those of married women. In 2006, 11.3 percent of married women participate in the labor force compared to 14.8% for the never married group and 33 percent for divorced women.

In rural areas, as shown in Figure 4, the situation was quite different. Participation rates had started in the 1950 relatively flat around 10 percent, with a hump for the 15-19 years old age group. The curve shifted up in 1960s significantly for all age groups, particularly the younger cohorts. That process continued in the 1970s with the peak for ages 15-19 getting much more pronounced. The 1980s saw a major drop in LFP rate for all age groups, especially the younger ones. In fact, the participation curve fell entirely below its 1956 position. The difference between this pattern and the urban curve for the middle age groups is interesting and important. It shows that the decline in female LFP was a broad rural

phenomenon. Since Islamization was not much of an issue in rural production, it further indicates that economic conditions must have been the key factors. In particular, it seems to reflect the smaller role of education and experience in rural production and the impact of worsening conditions for the carpet and handicraft industries due to disruption of trade and shortage of raw materials during the Iran-Iraq War (Amuzegar, 1997). In this respect, it is notable that with economic recovery after the later 1980s, the process of increased participation resumed, though this time the rise was larger for the 20-34 age groups and the peak belonged to those 20-24 years old, as the younger cohort increased their school attendance.

Note that the highest LFP rate in any age group of women since the Revolution is about 23 percent for those 25-29 years old urban women in 2006. This is still relatively low compared to participation rates in many other countries. However, as will see below, it is much more concentrated around women with higher skills and education. The participation rates shown in Figures 3 and 4 are also much lower than those estimated based on SECH data by Salehi-Isfahani (2005b), who finds the countrywide LFP rate for women aged 25-64 to be 24.6 percent.

An alternative way of looking at the age-LPF relationship is to focus on the experience of various cohorts. We do this separately for urban and rural areas in Figures 5 and 6. Figure 5 shows that generation of urban women born in the 1920s had its peak participation rate in the 1960s, when the members of the cohort were in their 40s. The cohort born in the 1930s also peaked their LFP rate in the 1960s when they were in their 30s. In 1970s, they withdrew from the market at a much earlier age than those born in the 1920s. The 1930s cohort was much better off, but was not much more educated than its predecessor, partly because of the economic and educational disruption as it came of age in the 1940s due to WWI and political turmoil. The next cohort born in the 1940s took a higher path, but a more important change was coming with the cohort born in the 1950s. That generation's LFP is likely to have continued to rise like other cohorts reaching their 30s. But, the economic and cultural turmoil of the 1980s proved fateful for them, and their LFP rate dropped somewhat in that decade. Still, their presence in the labor market was responsible for the increase in the LFP rate of middle aged urban women in the 1980s and 1990s. For the following cohorts born after 1960s, the LFP rate has continuously declined in their teen years and has increased in their 20s. Perhaps the most promising observation in this graph is that the generation born in the 1980s, now being in its 20s, is participating in the labor market more than the 1950s generation did when it is the same age in the 1970s. It seems that the changes in education and social attitudes are enabling larger numbers of women to participate in markets and gain economic and personal independence.

Figure 6 shows the contrasting situation for rural cohorts of women born before the 1970s. Unlike their urban counterparts, they seem to have increased and decreased the LFP more or less together,

regardless of age, based on the economic conditions prevailing at the time. There were, of course, higher participation rates among younger generations during the boom years of 1960s and 1970s, but those same groups lowered their participation sharply during the 1980s and returned to the market, though in muted ways, in the following decades. For the cohorts born in the 1970s and especially in the 1980s, the situation seems to be different: They seem to be acting increasingly more similar to their urban peers, starting at lower rate of LFP when they are teenagers and entering at high rates when they reach their 20s. This may indicate a process of homogenization of the labor market for women as rural areas grow and gain access to better infrastructure and social services.

We now turn to the age structure of employment and unemployment among female labor force participants. As we have seen earlier, unemployment rate rose from very low levels in 1956 to relatively large levels in 1976. Part of this was due to mislabeling many seasonal workers, but correcting for that is still likely to show an increase in unemployment during 1966-1976. To explore this issue further and identify the role of age in female employment and unemployment, in Figures 7 and 8, we graph the shares of working age female population employed and in the labor force during 1966-1986 in urban and rural areas. The first notable fact in Figure 7 is that the distance between LFP and employment lines for urban areas in 1966 and 1976 was quite small except for those below 25, reflecting the tight labor market in those years. The larger and almost uniform distance between the corresponding lines for rural areas shown in Figure 8 is likely to be in part due to the inclusion of many seasonal workers among the unemployed. However, the increase in the distance for 1976 cannot be easily explained by this effect. Rather, it may have been caused by structural shifts induced by the oil boom that drastically lowered the prices of tradables and rendered agricultural and handicraft production unprofitable. In this regard, it is interesting to note that despite the tighter labor in 1976 in urban areas that ended up lowering the overall male unemployment rate compared to 1966 (see Table 7), rural male unemployment rate increased in that period from 11.2 to 12.6 percent. This increase was much smaller than the one experienced for rural women for two reasons. First, before the Revolution, rural men migrated out much more than rural women, thus escaping unemployment more often. Second, men move away from seasonal jobs in agriculture and left a bigger share of those jobs to be filled by women, leading to increased over-counting for unemployed women.

The examination of the LFP and employment curves for 1986 in Figures 7 and 8 adds two new insights. First, the increase in female unemployment rate in the 1980s was a problem mainly for the younger entrants to the labor market in both rural and urban areas. Women above 30 did not face much unemployment; many had retired and those had quitted or lost their jobs had left the labor market altogether. Second, for women below 30 years of age, the pattern of participation in 1986 was rather

similar to the 1976 pattern, but jobs had vanished in a major way and had led to high unemployment. In contrast, areas LFP and employment lines had shifted down more in tandem. In other words, compared to urban areas, female labor supply in rural areas seems to have been far more responsive to job availability. This is likely to be due to opportunities in rural areas for work around home and in the fields that make rural women flexible labor suppliers, but do not get captured as employment by census data. Since the move out of labor market was quite large in the 1980s, the low employment and LFP rates recorded in those years may be underestimates.

The LFP and employment patterns in urban and rural areas after the 1980s are depicted in Figures 9 and 10. A key observation in these figures is that since the 1980s in both urban and rural areas, unemployment has continued to be low for 30 years and over age groups. However, it has become an increasingly serious problem for the younger generations that have entered the market in large numbers. In urban areas, job opportunities have expanded at fast rates, though not enough to keep up with the mass of new entrants. In rural areas, job opportunities have in fact shrunk for the younger cohorts and, as a result, the ranks of unemployed young women have swelled tremendously. The reason for this phenomenon seems to be a combination of two sets of factors. One set is the rising real exchange rate and foreign competition, as in the 1970s, which has led to the decline of rural carpet and handicraft industries (see Figure 2). The other set of reasons is related to a growing mismatch between the education and skills of young women in rural areas and the job options available to them. While the jobs are still largely low-pay manufacturing and agriculture positions, female job market entrants are typically educated and seek more office work and service sector positions (F. Moghadam, 2007). This pattern seems to be driving a large migration of women from rural to urban areas, reversing the rise in the female-male ratio in rural areas that had been caused before the Revolution due to massive male migration to urban areas (see the top rows of Table 3). Interestingly, as we have noted earlier, Islamization seem to be facilitating this process, which should help lessen the mismatch problem in rural job markets for women.

A remarkable observation in the profiles examined above is that for women who participated in the labor force in the 1950s and 1960s, retirement came quite late and those in their 50s and 60s remained as active as the younger generations. This is likely to have been because older women who sought jobs in those years mostly came from very low income family and had to somehow support themselves. In the absence of adequate access to social security, pension, or safety nets, they had to continue working well into their old age. This situation began to change as the labor market participants became more educated and managed to secure better jobs, especially in the public sector. The expansion of social security and rising incomes also provided the option for women to withdraw from the labor market. However, the biggest change came after the Revolution when the government established especial programs for the

elderly, especially for women in rural areas, such as the Rajaii program that is funded by the government and managed by the Imam Khoemini Emdad Committee (F. Moghadam, 2004; Esfahani, 2006). Since the Revolution, for most female employees retirement seems to come when they are in the 45-55 age range, when they become eligible for retirement benefits and pensions.

To go beyond age structure and to control for some of the other factors affecting women's participation rates, we reconstruct LFP rate and employed share figures using as base population those identified in censuses as participants in the labor force or homemakers, thus leaving out the students, disabled, retired, etc. The result is shown in Table 8. The picture now changes, especially in light of 2006 census results. The new portrait shows that based on our new measure, which excludes the "non-working" population and focuses on work inside and outside home, female LFP rate had reached a high of 15.8 percent before the revolution. It fell to a low of 10.5 percent in 1986, but has now surpassed 18.5 percent and stands much higher than its pre-Revolution levels. In other words, part of the decline of female LFP rate after the Revolution and particularly its slow recovery are attributable to the female population's increased schooling and changes in the opportunities to retire or the inability to participate in the labor market. We examine the role of education in labor market trends for women's in the following section.

6. Education and Female Labor Force

Schooling has been an important factor in the decline and slow recovery of women's LFP in the last three decades of 20th century. To demonstrate the significance of this factor, in Figure 11 we present the share of students in female population aged 10 years and over. This share had been on the rise since 1930s, but made a major jump and passed 10 percent in the 1970s largely because of expansion of education in urban areas. After the revolution, the rate of female school attendance experienced a decline in urban areas, rose strongly in rural areas such that the overall share of students to population increased. This is notable because, contrary to the observation made by Behdad and Nomani (2006: 130), it suggests that female schooling may have had an important impact on LFP rate in the 1980s, as it increased sharply in rural areas where the drop in LFP was particularly large.

The decline in urban schooling of women may be related to Iran-Iraq war during 1980-1988, when there were disruptions in the economy and many young women volunteered to support the effort. However, a more important factor seems to have been the closure of universities in the early 1980s because of the Islamic Cultural Revolution. This also explains why the drop in schooling had an urban focus because universities are located in urban areas and rural women's education was more concentrated in primary and secondary levels rather than tertiary. It is interesting to note that after the reopening of the universities and end of the war, the share of women attending school rapidly increased again in both rural and urban areas during the late 1980s and first half of 1990s. Of course, there was also a huge cohort of

baby boomers born after the Revolution that entered the school age at that time. As a result of these factors, the share of students in female population aged 10 years and over jumped from 16.6 percent in 1986 to 22.6 percent in 1996, offering an explanation for the slow rise of female LFP rate as well as the low their lower unemployment rate during the 1990s. This trend, however, has reversed in a major way since 1996 as those students have graduated and many of them are now seeking jobs, as we have seen in Figures 3 and 4.

The results of the female education effort in Iran can be seen in Table 9. The first two rows of the table show that female literacy rate has been rapidly increasing in Iran, especially among those employed. While almost 70 percent of employed women in 1976 were illiterate, the share had dropped by half in 1986 to about 36 percent, confirming our earlier claim that the female jobs lost during 1976-1986 were largely those that employed unskilled and uneducated young women. That share was cut by more than half again to just over 12 percent during 1986-2006.

Secondary and tertiary education have also been expanding in a parallel fashion, with the higher education in particular accelerating in the past decade. More importantly, female employment has increasingly shifted toward educated groups. As Table 9 shows, among employed women aged 10 years and over in 1976 only 17.5 percent had a secondary degree and 5.2 percent had higher education degrees. By 1986, those shares had more than doubled to 40.8 and 11.5 percents, and in 2006 they reached 60.4 and 36.7 percent. For ages 20 and over, the share of women with high degrees rose from about 8 in 1876 to 40.4 percent in 2006. By comparison, the corresponding shares for men have been much lower and have grown more slowly. Women now comprise well over 50 percent of university students, and have been quickly catching up with men in terms of educational attainment. (See the bottom rows of Table 9.) It is noteworthy that these census results are in sharp contrast with those derived by Salehi-Isfahani (2005b) from SECH data, suggesting that most of the increase in participation has come from the less educated women. However, our findings are consistent with his estimates of large positive effects of education on LFP among Iranian women.

The increased education of women and their increased entry into the labor force has also had a favorable interaction with a visible decline in their fertility rates since the late 1980s. As education and social services expanded, women lowered their fertility rates and found more time to attend school and join the labor force. Moreover, they have managed to help their children acquire better education, hence setting in motion a virtuous circle of increased human capital, low fertility, and high economic growth (Salehi-Isfahani, 2005a).

The above observations highlight the rising role of education in for female employment in Iran. They suggest that unlike the situation before the Revolution, schooling has become the key channel

towards employment for Iranian women. Of course, not all educated women find employment. In fact, as the last row of Table 9 indicates, the share of women with high degrees who have found employment has declined sharply between 1996 and 2006, as the mass of recent graduates have poured into the labor market. However, the facts that women's employment has been on the rise and the unemployment rate has been low for those over 30 suggests that it is likely to be only a matter time before the current cohort is placed. This outlook is further supported by the fact that the economy is shifting towards service activities, where educated women's skill and interests are more likely to match job possibilities and requirements. In the following section, we explore these issues further in the context of occupational characteristics of female employment in Iran.

7. Occupational Characteristics of Female Employment

Census data suggest that women in Iran are not joining the pool of world cheap "unskilled" labor. In fact, they are moving away from that pattern. But, in what types of work do they engage? To answer this question, we have compiled the relevant data in Tables 10 and 11.

The overall picture in Table 10 indicates that before the Revolution, employed women used to work mostly as industrial production and wage workers. Farming occupations came next and professional and technical positions were taking up the third position. That situation changed dramatically after the Revolution and in recent decades professional and technical jobs have come to dominate as main occupations where women find employment. For farming and industrial occupations, there was a switching of ranks, with farming jobs first becoming more important and then industrial ones. However, in the past decade, both occupations have lost their shares. As we have seen, this pattern is related to the temporary rise of agriculture in the 1980s and the decline of the carpet industry as a major employer of uneducated young women. It is also driven by the rise of female education and the expansion of the service sector where women find professional and technical occupations as educators and healthcare and social service professionals. Indeed, the share of women in such occupations has been relatively high over the past four decades, rising from about 32 percent in 1966 to over 34 percent in 2006. The overall picture shows that female education has translated into some improvement in their work position and percentage of female workers in professional and technical occupations has increased. The percentage of women in executive and managerial has also been on the rise, though it remains relatively low. By 2006, women still held only 15 percent of such occupations. Administrative, clerical, and sales occupations are also gaining ground among jobs taken by women, but their shares are still rather small.

As one may expect, there is a major difference between women's occupations in rural and urban areas (Table 10). In urban areas, concentration of women's employment in professional and technically related jobs is much higher than the national average. Rural women have been engaged far more in

farming and industrial job. However, a remarkable fact is the emergence of such occupations in rural areas since the Revolution. Indeed, the data shows a decline in the share of professional and technical occupations for urban women since 1986. But, that is more than compensated by the rise of such jobs for women in rural areas. This observation reflects the expansion of public services and the deeper penetration of the state in the rural areas after the Revolution (more on this below).

Table 11 produces a picture of relative positions of employed women in firms, by type ownership. The shares of women in total employment in each type of position are shown in Figure 12. The salient facts about these graphs can be summarized as follows:

Unpaid family worker as an occupation for women had been rising sharply before the Revolution and its share in total female employment had reached 40 percent in 1976. This pattern was particularly prevalent in rural areas. The trend has reversed since the Revolution and the share has continued to drop. It is notable that this observation contradicts the result of SECH data showing increases in unpaid family work in recent years (Salehi-Isfahani, 2005b). Although this type of employment remains relatively high in rural areas (over 30 percent), the massive urbanization of the labor force implies that relatively much fewer women are in that position nowadays than was the case even in the 1950s. Figure 12 further reveals that before the Revolution most of the increase in unpaid family tasks were given to women, as their share in that type of position rose from about 18 percent in 1956 to about 50 percent in 1976. After dropping during 1976-1986, that share has stabilized around 45 percent (in rural areas the share rose to 50 percent and in urban areas it dropped to about 30 percent).

Since the decline in unpaid family jobs was an important part of the decline in female LFP and employment after the Revolution, evaluating its costs and benefits warrants some attention. It is true that, as Behdad and Nomani (2006: 130) point out, unpaid family work is not unproductive, but its opportunity cost is not trivial either. Such positions are typically given to teenagers at the cost of their education, personal development, and independence. The work experience and contribution to the family may have been worthwhile when those teenagers did not have educational or other options. However, with the expansion of educational and other public services, the lifetime costs of unpaid family work in manual labor positions are likely to exceed the output be a wide margin.

The share of women with jobs acting as employers has been low but rising over the past five decades, especially in during 1996-2006, in both rural and urban areas. As Figure 12 shows, among all employers (male and female), the share of women had declined before the Revolution and stabilized the two decades after the Revolution at about 3 percent in urban areas and 5 percent in rural areas. However, the census in 2006 shows that the share of women among employers has jumped to about 7.5 percent in both rural and urban areas.

Women working as self-employed have comprised over a fifth of total female employment, except in 1986 when the share seemed to have gone down dramatically to about 10 percent. In the past, most of these jobs have been in agriculture and manufacturing. As a result, the share has been much higher for rural women (30-35 percent) than for urban women (10-17 percent). The share was declining before the Revolution, but increased afterwards in both rural and urban areas and reached its highest levels so far in 2006. The rise has been faster than the growth of total self-employment jobs in the country for both men and women. As a result, women's share in total self-employment positions has increased (see Figure 12). Salehi-Isfahani (1995) observes a similar trend using SECH data.

Women working as salary and wage employees in private firms had a shrinking share of total female employment before the Revolution. This trend was followed by a sharp drop in the share after the Revolution, but it has been rising steadily since 1986 in both rural and urban areas. This is in contrast to the implications of SECH data analyzed by Salehi-Isfahani (2005b). The share of women in total private employee positions has also been rising since the 1980s. However, it is still below its pre-Revolution peak in 1966 in both rural and urban areas.

Until the mid-1960s, employment in the public sector comprised no more than 7-8 percent of female employment in Iran, with about 90 percent of that type of employment being located in urban areas. At that time was, 99 percent of rural female employment was in the private sector. The situation changed during 1966-1976 and share of public sector in total female employment rose to over 20 percent in the mid-1970s. The change accelerated in a major way after the Revolution and the share went over 44 percent in 1986, reaching 77 percent in urban areas and 9 percent in rural areas. This is particularly notable because it indicates that the loss of female employment after the Revolution was largely a private sector phenomenon. Indeed, in 1986, there were 4.3 time more female public sector employees than in 1976 (246 thousand vs. 57 thousand), while total female employment had grown by only 33 percent (from 0.9 million to 1.2 million). There were significant decline in private sector positions for women: 34 percent in women's self-employment, 25 percent in private-sector employee position, and 7 percent in employer positions. The only rising job category for women in the private sector was unpaid family worker. However, it should also be noted that the first decade of the Revolution was a time of sharp decline in private sector employment and swelling of public sector ranks for men as well. In fact, the share of women in all public sector jobs declined from about 15 percent in 1976 to about 12 percent in 1986 (Figure 12).

Since 1986, the share of public sector position in total female employment has been gradually declining, reaching 38.5 in 2006. Interestingly, this has been only an urban phenomenon, where the share of public sector in female employment has drop to just below 50 percent in 2006. In rural areas, on the

contrary, the share has been on the increase, rising above 11 percent in 2006. However, in both rural and urban areas, women have been taking over a larger share of the public sector employment (Figure 12). In 2006, the proportion of women among public sector employees in urban, rural, and the economy as a whole stood at 22.5, 11, and 20.7 percents, respectively.

Despite the rise of the private sector share in total female employment since 1986, it still remains far below pre-Revolutionary levels. However, women have increased their presence among employers and the self-employed to levels far exceeding the pre-Revolution levels in both rural and urban areas.

8. Conclusion: Challenges and Opportunities

Several points can be drawn from our analysis of Iran's census data in this paper. First, there has been a gradual shift of female employment from agricultural and manufacturing sectors, especially the export-oriented carpet industry, to the service sector, particularly in education, and health, and social services. This trend seems to provide a good match between the economy's growth poles and women's growing education and job preferences. The trend is particularly notable because it is the opposite of the one in many developing countries, where economic growth has been brought about by channeling a cheap female labor force into manufacturing for exports. The contrary trend in Iran has been consistent with the economy's growth because of the constellation of a range of factors, particularly the presence of large oil revenues combined with demographic transition and rapid expansion of female education.

Second, there was a broad decline in female LFP and employment in the aftermath of the 1979 Islamic Revolution. In the literature, this has been widely attributed to the impact of Islamization. While it is true that many middle class and elite women in urban areas were either forced or chose to leave their jobs, the effect seems to have been quantitatively small relative to the impact of disruption in trade, which severely affected the industries that had served as main sources of employment for women before the Revolution. This view is supported by a host of evidence. In particular, the decline in female employment was much larger and broader in rural areas, especially in carpet and handicraft manufacturing activities, where Islamization was not as issue. Also, the reduction in female employment was entirely a private sector phenomenon. Public sector employment of women in fact increased more than four fold.

Third, expansion of education played a major role in the reduction of female LFP in the rural areas in 1980s and in both rural and urban areas in 1990s. Islamization facilitated that process, and in this way may have had an indirect effect on LFP as well. However, in that role, it only helped postpone the entry of women into the labor force, which is now being materialized. Rising education has effected women's employment and has increased their share of employment in professional and technical jobs. Women have also been rising in managerial and executive ranks, though their overall percentage in those

positions remains low. Some visible and some less visible, "glass-ceiling", social and cultural barriers to their progress in those directions still remain (Ghorbani and Tung 2007).

Fourth, although the rising education of women is providing unique opportunities for economic growth in Iran over the coming decades, at present their entry into the labor force offers many policy challenges as well. The economy has so far been slow to create jobs for the large cohorts of post-Revolution baby boomers. The private sector has been too week to take advantage of the opportunities and the government has lacked a coherent and effective policy to turn this potential source of rapid growth into an actual force. Increased oil revenues in the past several years have helped a great deal by allowing the government to spend more and finance both public and private investment. They have also shifted the economy in the direction service sector growth, which has helped reduce mismatches between the jobs being created and the education and aspirations of the labor market participants, especially educated women.

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Table 1

Iran's Aggregate Economic Indicators, 1956-2006

Year	1956	1966	1976	1986	1996	2006
Population (in millions)	19.0	25.8	33.7	49.4	60.1	70.5
Growth Rate of Population in Prior Decade	*2.9%*	*3.1%*	*2.7%*	*3.9%*	*2.0%*	*1.6%*
Labor Force (10 years and over, in millions)	6.1	7.8	9.8	12.8	16.0	23.5
Growth Rate of Labor Force in Prior Decade	*n.a.*	*2.6%*	*2.2%*	*2.7%*	*2.2%*	*3.8%*
Female Labor Force (10 years and over, in millions)	0.6	1.0	1.4	1.3	2.0	3.6
Growth Rate of Female Labor Force in Prior Decade	*n.a.*	*5.8%*	*3.4%*	*-1.0%*	*4.4%*	*5.8%*
Share of Women in Labor Force (10 years and over)	9.5%	13.2%	14.8%	10.2%	12.7%	15.5%
Share of Urban Population	31.4%	37.3%	47.3%	53.3%	60.8%	68.5%
Per Capita PPP GDP in 2000 Constant US Dollars	1823	3409	7959	4876	5987	8089
Average Annual Growth Rate of per Capita PPP GDP in Prior Decade	*3.6%*	*6.3%*	*8.5%*	*–4.9%*	*2.1%*	*3.0%*
Per Capita PPP Non-Oil GDP in 2000 Constant US Dollars	1712	2933	5107	4662	5068	6307
Average Annual Growth Rate of per Capita PPP Non-Oil GDP in Prior Decade	*4.1%*	*5.4%*	*5.5%*	*–0.9%*	*0.8%*	*2.2%*
Consumer Price Index Inflation Rate	*4.9%*	*3.5%*	*6.3%*	*15.4%*	*22.9%*	*14.1%*

Source: Statistical Center of Iran.

Table 2

Employment and Value Added Shares and the Relative Labor Productivity of the Main Sectors in Non-Oil GDP

Census Year	1956	1966	1976	1986	1996	2006
Employment Shares (Percent)						
Agriculture	56.3	46.2	34.0	29.1	23.0	18.0
Industrial	20.1	27.1	34.2	25.3	30.7	31.7
Services	23.6	26.7	32.1	45.9	46.3	50.3
Sectoral Value Added Shares (Percent)						
Agriculture	47.6	31.4	15.2	23.5	17.5	12.5
Industrial	7.4	15.7	27.2	17.3	25.0	21.6
Services	45.0	52.9	57.7	59.2	57.5	65.9
Sectoral Relative Productivity						
Agriculture	0.85	0.68	0.45	0.81	0.76	0.69
Industrial	0.37	0.58	0.79	0.69	0.81	0.68
Services	1.91	1.98	1.80	1.29	1.24	1.31

Source: Statistical Center of Iran.

Table 3
Share of Women in Population, Labor Force, Employment, and Unemployment for Population Aged 10 Years and Over
(Percent)

Census Year	1956	1966	1976	1986	1996	2006
Population						
All Country	48.8	48.3	48.7	48.8	49.3	49.1
Urban	48.1	47.6	47.3	48.5	48.9	49.1
Rural	49.2	48.7	50.1	49.1	49.9	49.3
Labor Force						
All Country	9.5	13.2	14.8	10.2	12.7	15.5
Urban	9.9	11.5	11.3	10.5	11.7	15.8
Rural	9.3	14.1	17.6	9.8	14.2	14.7
Employment						
All Country	9.7	13.3	13.8	8.9	12.1	13.6
Urban	10.3	11.8	11.2	8.8	11.3	13.9
Rural	9.4	14.1	16.0	8.9	13.4	12.8
Unemployment						
All Country	1.3	12.4	23.8	18.3	18.7	28.3
Urban	1.2	7.6	13.0	20.1	16.6	30.0
Rural	1.4	13.7	26.9	15.7	21.5	25.4

Source: Statistical Center of Iran.

Table 4
Share of Women in Population, Labor Force, Employment, and Unemployment for Population Aged 20 Years and Over
(Percent)

Census Year	1956	1966	1976	1986	1996	2006
Population						
All Country	49.1	48.3	48.9	48.9	49.3	49.3
Urban	48.2	47.4	47.7	48.6	48.8	49.2
Rural	49.5	48.8	50.0	49.3	50.0	49.5
Labor Force						
All Country	8.3	10.7	12.0	8.8	11.3	14.8
Urban	8.6	9.5	10.2	9.8	11.4	15.6
Rural	8.2	11.4	13.7	7.3	11.2	12.9
Employment						
All Country	8.4	10.7	10.9	8.1	11.1	13.3
Urban	8.8	9.7	10.0	8.9	11.3	14.0
Rural	8.3	11.4	11.7	7.1	10.9	11.5
Unemployment						
All Country	1.5	10.4	24.2	14.5	14.3	27.6
Urban	1.6	5.4	13.1	16.7	13.8	30.0
Rural	1.5	11.7	27.0	10.1	15.3	22.8

Source: Statistical Center of Iran.

Table 5
Share of Women Aged 10-19 in Population, Labor Force, Employment, and Unemployment
(Percent)

Census Year	1956	1966	1976	1986	1996	2006
Share of Women Aged 10-19 in …						
Female Population Aged 10 and Over						
Total Country	*25.0*	*31.2*	*34.1*	*33.6*	*35.7*	*25.8*
Urban	27.4	33.1	34.4	31.2	34.6	24.4
Rural	23.8	29.9	33.9	36.5	37.6	28.9
Female Labor Force Aged 10 and Over						
Total Country	*27.1*	*36.8*	*34.5*	*28.0*	*21.4*	*12.9*
Urban	26.3	30.9	21.9	18.1	10.4	7.7
Rural	27.5	39.6	41.0	40.9	35.1	24.7
Labor Force Relative to the Population Share of 10-19 Group						
Total Country	*109*	*118*	*101*	*83*	*60*	*50*
Urban	96	93	64	58	30	32
Rural	115	132	121	112	93	86
Total Female Employment						
Total Country	*27.0*	*36.0*	*35.2*	*20.4*	*17.3*	*9.2*
Urban	26.3	30.0	20.8	8.7	6.6	4.4
Rural	27.4	39.0	44.1	34.0	30.9	20.4
Female Agricultural Employment						
Total Country	*25.8*	*37.1*	*34.0*	*23.0*	*17.6*	*15.9*
Urban	n.a.	28.4	25.9	15.1	10.0	7.1
Rural	n.a.	37.5	34.4	23.2	17.8	16.1
Female Manufacturing Employment						
Total Country	*29.9*	*41.3*	*48.7*	*52.9*	*38.8*	*20.6*
Urban	n.a.	43.6	44.2	34.2	24.5	11.0
Rural	n.a.	40.4	50.0	60.7	45.7	29.8
Female Service Employment						
Total Country	*23.3*	*20.0*	*10.4*	*4.5*	*2.2*	*4.2*
Urban	n.a.	17.6	9.3	3.8	1.8	3.7
Rural	n.a.	31.0	21.1	12.1	6.3	8.2
Female Unemployed						
Total Country	24.6	44.9	30.8	50.4	48.1	25.3
Urban	4.6	54.8	38.9	40.8	37.0	19.2
Rural	44.5	43.4	29.6	67.8	59.7	37.5

Source: Statistical Center of Iran.

Table 6
Women's Share in Aggregate and Sectoral Employment of Population Aged 10 Years and Over
(Percent)

Census Year	1956	1966	1976	1986	1996	2006
Total Economy	**9.7**	**13.3**	**13.8**	**8.9**	**12.1**	**13.6**
Agriculture	4.3	6.4	7.6	8.2	8.8	10.9
Manufacturing	34.1	40.1	38.2	14.8	22.8	18.7
Social, Personal, and Financial Services	21.5	18.3	18.3	13.4	21.0	28.2
Education, Healthcare, and Social Services		*27.9*	*39.5*	*37.5*	*43.0*	*48.6*
Urban	**10.3**	**11.8**	**11.2**	**8.8**	**11.3**	**13.9**
Agriculture	3.5	4.8	4.6	4.1	4.6	5.7
Manufacturing	15.6	19.4	16.2	6.4	11.3	13.5
Social, Personal, and Financial Services	22.7	19.6	19.2	15.9	23.8	30.2
Education, Healthcare, and Social Services			*43.1*	*41.2*	*46.7*	*50.6*
Rural	**9.4**	**14.2**	**16.0**	**9.1**	**13.4**	**12.8**
Agriculture	4.4	6.5	7.9	8.7	9.4	12.0
Manufacturing	59.6	67.6	63.3	31.3	45.2	35.1
Social, Personal, and Financial Services	19.0	13.9	12.5	5.0	9.7	15.9
Education, Healthcare, and Social Services			*22.2*	*18.8*	*24.4*	*33.3*

Source: Statistical Center of Iran.

Table 7
Labor Force Participation Rate, Share of Population Employed, and Unemployment Rate
Population Aged 10 Years and Over
(Percent)

Census Year	1956	1966	1976	1986	1996	2006
Labor Force Participation Rate						
All Country – Female	9.2	12.6	12.9	8.2	9.1	12.5
Urban Areas – Female	9.3	9.9	9.0	8.4	8.1	12.6
Rural Areas – Female	9.2	14.3	16.6	7.9	10.7	12.3
All Country - Male	*83.9*	*77.4*	*70.8*	*68.4*	*60.8*	*66.1*
Share of Population Holding Jobs						
All Country - Female	9.2	11.5	10.8	6.1	7.9	9.6
Urban Areas - Female	9.2	9.6	8.5	5.9	7.1	9.8
Rural Areas - Female	9.2	12.7	13.0	6.3	9.2	9.2
All Country - Male	*81.5*	*70.2*	*64.3*	*59.5*	*55.6*	*58.9*
Unemployment rate						
All Country - Female	0.3	8.7	16.4	25.5	13.4	23.3
Urban Areas - Female	0.5	3.8	5.9	29.1	12.5	22.5
Rural Areas - Female	0.3	10.9	21.7	20.6	14.3	25.5
All Country - Male	*2.9*	*9.3*	*9.1*	*12.9*	*8.5*	*10.8*

Source: Statistical Center of Iran.

Table 8
Female Labor Force Participation vs. Homemaking
(Percent)

Census Year	1956	1966	1976	1986	1996	2006
All Country						
Share of Labor Force Participants and Homemakers in Population	*88.8*	*85.9*	*81.7*	*77.6*	*68.5*	*67.7*
Participation Rate	10.4	14.7	15.8	10.5	13.3	18.5
Share of Working Age Population Employed	10.3	13.4	13.2	7.8	11.5	14.2
Unemployment rate	0.3	8.7	16.4	25.5	13.4	23.3
Urban Areas						
Share of Labor Force Participants and Homemakers in Population	*86.3*	*78.0*	*73.2*	*75.6*	*65.4*	*66.3*
Participation Rate	10.8	12.7	12.3	11.0	12.4	19.0
Share of Working Age Population Employed	10.7	12.3	11.6	7.8	10.9	14.7
Unemployment rate	0.5	3.8	5.9	29.1	12.5	22.5
Rural Areas						
Share of Labor Force Participants and Homemakers in Population	*89.9*	*91.0*	*89.6*	*79.9*	*73.5*	*70.7*
Participation Rate	10.2	15.7	18.5	9.9	14.6	17.4
Share of Working Age Population Employed	10.2	14.0	14.5	7.9	12.5	12.9
Unemployment rate	0.3	10.9	21.7	20.6	14.3	25.5

Source: Statistical Center of Iran.

Table 9

Iranian Women's Educational Attainment and Employment

Census Year	1956	1966	1976	1986	1996	2006
Literacy Rate						
Female Population 10 Years and Over	7.3	16.1	30.9	47.6	71.7	80.3
Employed Female Population 10 Years and Over	n.a.	11.5	31.2	63.9	79.9	87.7
Share of Women with Secondary Degree in						
Female Population 10 Years and Over	0.2	1.1	2.9	7.0	12.1	16.8
Employed Female Population 10 Years and Over	n.a.	3.6	17.5	40.8	43.2	60.4
Share of Women with Higher Education Degree in						
Female Population 10 Years and Over	0.03	0.21	0.67	0.99	2.21	6.24
Employed Female Population 10 Years and Over	n.a.	0.9	5.7	11.5	22.0	36.7
Female Population 20 Years and Over	0.04	0.3	1.0	1.5	3.4	8.3
Employed Female Population 20 Years and Over	n.a.	1.5	8.0	14.6	26.6	40.4
Share of Men with Higher Education Degree in						
Male Population 20 Years and Over	*0.6*	*1.6*	*2.7*	*3.9*	*6.8*	*11.3*
Employed Male Population 20 Years and Over	*n.a.*	*1.3*	*3.2*	*4.7*	*8.9*	*13.9*
Share of Women with Higher Education Holding Jobs	**n.a.**	**49.0**	**83.5**	**71.1**	**78.6**	**56.4**

Source: Statistical Center of Iran.

Table 10

Distribution of Female Employment by Occupation

Census Year	1956	1966	1976	1986	1996	2006
All Country	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Executive, Administrative, and Managerial Occupations	0.00	0.05	0.11	0.16	2.35	3.36
Professional, Technical and Related Occupations	3.2	5.4	15.5	34.8	32.1	37.2
Administrative Support Occupations, Including Clerical	1.3	1.4	5.2	4.7	5.9	8.6
Service and Sales Occupations	19.9	0.6	6.2	4.4	4.4	8.4
Farming, Forestry, and Fishing Occupations	27.4	20.6	18.7	26.7	14.4	11.6
Industrial Production and Transportation Workers and Simple Laborers	47.6	63.6	52.9	23.4	37.2	26.9
Other, Unspecified	0.7	1.7	1.4	5.9	3.6	3.8
Urban Areas	**n.a.**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Executive, Administrative, and Managerial Occupations	n.a.	0.12	0.28	0.27	3.87	4.55
Professional, Technical and Related Occupations	n.a.	13.2	36.9	59.9	52.8	49.3
Administrative Support Occupations, Including Clerical	n.a.	3.7	13.5	8.6	10.0	11.5
Service and Sales Occupations	n.a.	1.0	1.2	7.2	5.9	10.3
Farming, Forestry, and Fishing Occupations	n.a.	2.3	2.2	2.4	1.7	1.2
Industrial Production and Transportation Workers and Simple Laborers	n.a.	60.7	30.6	13.5	21.7	19.3
Other, Unspecified	n.a.	2.3	2.5	8.2	4.0	3.9
Rural Areas	**n.a.**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Executive, Administrative, and Managerial Occupations	n.a.	0.00	0.01	0.02	0.40	0.57
Professional, Technical and Related Occupations	n.a.	0.6	2.4	6.1	5.6	9.0
Administrative Support Occupations, Including Clerical	n.a.	0.0	0.2	0.3	0.6	1.7
Service and Sales Occupations	n.a.	0.3	0.3	1.2	2.5	4.0
Farming, Forestry, and Fishing Occupations	n.a.	31.7	28.8	54.3	30.7	35.8
Industrial Production and Transportation Workers and Simple Laborers	n.a.	65.4	66.5	34.8	57.0	45.1
Other, Unspecified	n.a.	1.3	0.7	3.3	3.2	3.8

Source: Statistical Center of Iran.

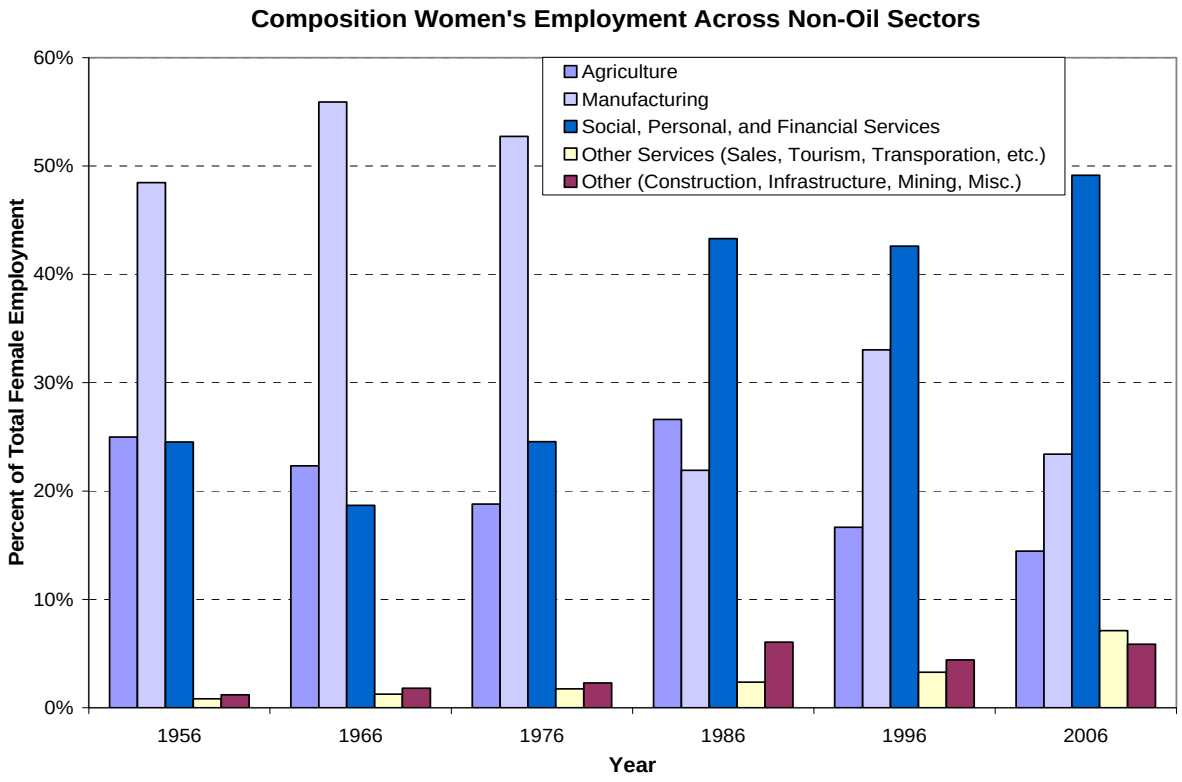
Table 11

Distribution of Female Employment by Position Categories

Census Year	1956	1966	1976	1986	1996	2006
Total Country	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Employers	0.63	0.63	0.44	1.39	0.92	4.07
Self-Employed	22.8	21.7	10.8	18.4	19.7	21.9
Private Employees	53.3	47.2	26.6	10.1	14.1	22.5
Unpaid Family Workers	17.8	21.8	40.9	21.7	20.8	11.2
Total Private	94.5	91.3	78.7	51.5	55.5	59.7
Public Employees	5.4	6.2	20.3	41.3	39.6	37.3
Unspecified	0.1	1.0	1.0	7.2	4.5	3.0
Urban Areas	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Employers	0.8	1.01	0.59	1.04	0.92	4.61
Self-Employed	10.9	12.8	8.7	9.2	12.7	16.6
Private Employees	72.5	59.5	29.8	7.8	13.1	25.3
Unpaid Family Workers	2.1	5.6	11.0	2.4	4.4	2.3
Total Private	86.3	78.9	50.0	20.4	31.2	48.8
Public Employees	13.5	17.6	48.6	70.0	63.2	48.6
Unspecified	0.2	1.2	1.4	9.6	5.2	2.6
Rural Areas	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Employers	0.5	0.44	0.35	1.79	0.92	2.82
Self-Employed	28.5	26.5	12.1	28.8	28.6	34.6
Private Employees	44.1	41.3	24.6	12.8	15.6	15.9
Unpaid Family Workers	25.4	30.3	59.2	43.8	41.5	31.9
Total Private	98.5	98.6	96.2	87.1	86.5	85.2
Public Employees	1.4	0.5	3.0	8.5	9.3	10.9
Unspecified	0.1	1.0	0.8	4.4	3.5	3.9

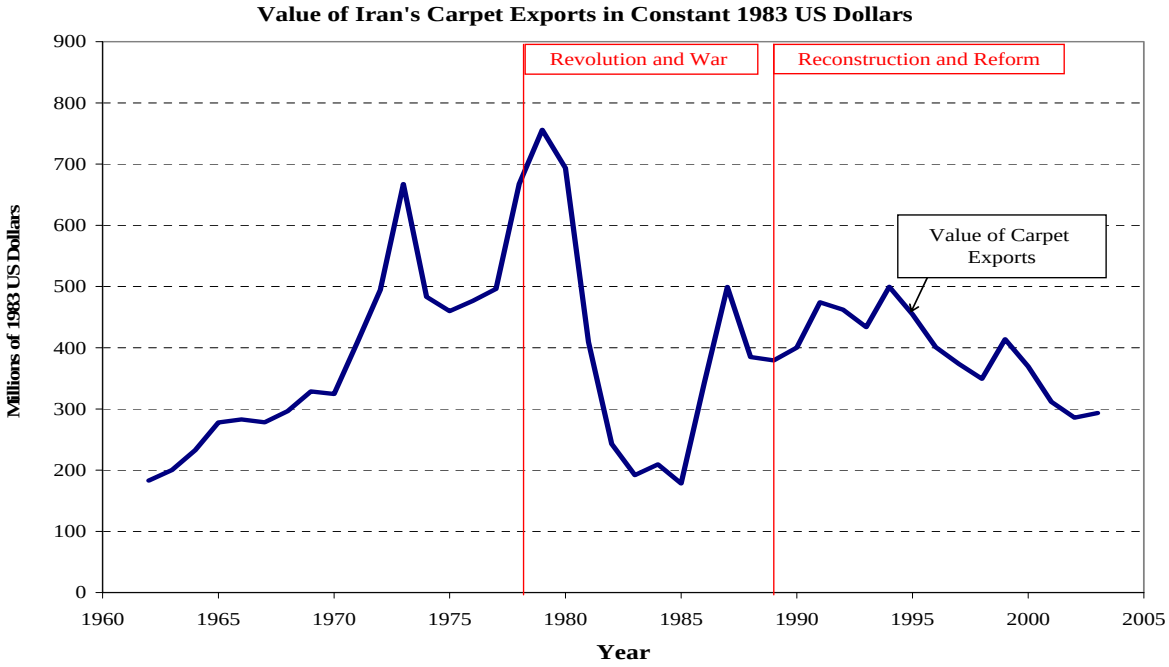
Source: Statistical Center of Iran.

Figure 1



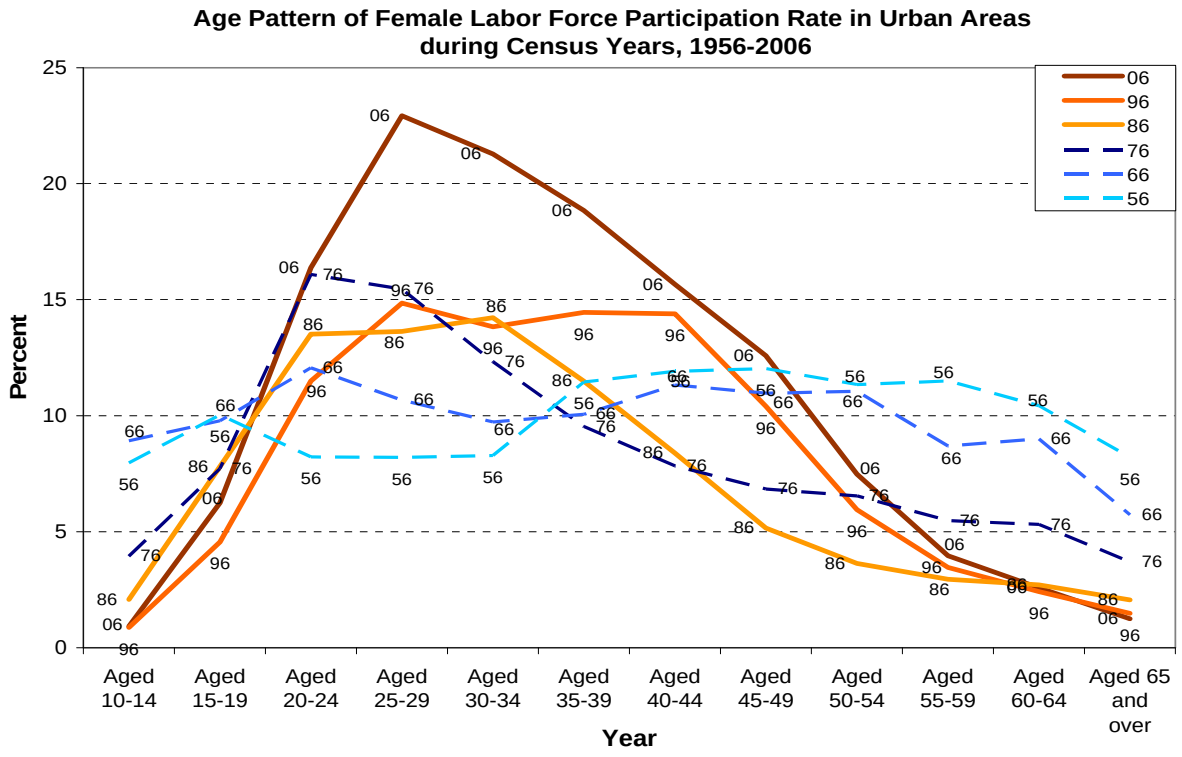
Source: Statistical Center of Iran.

Figure 2



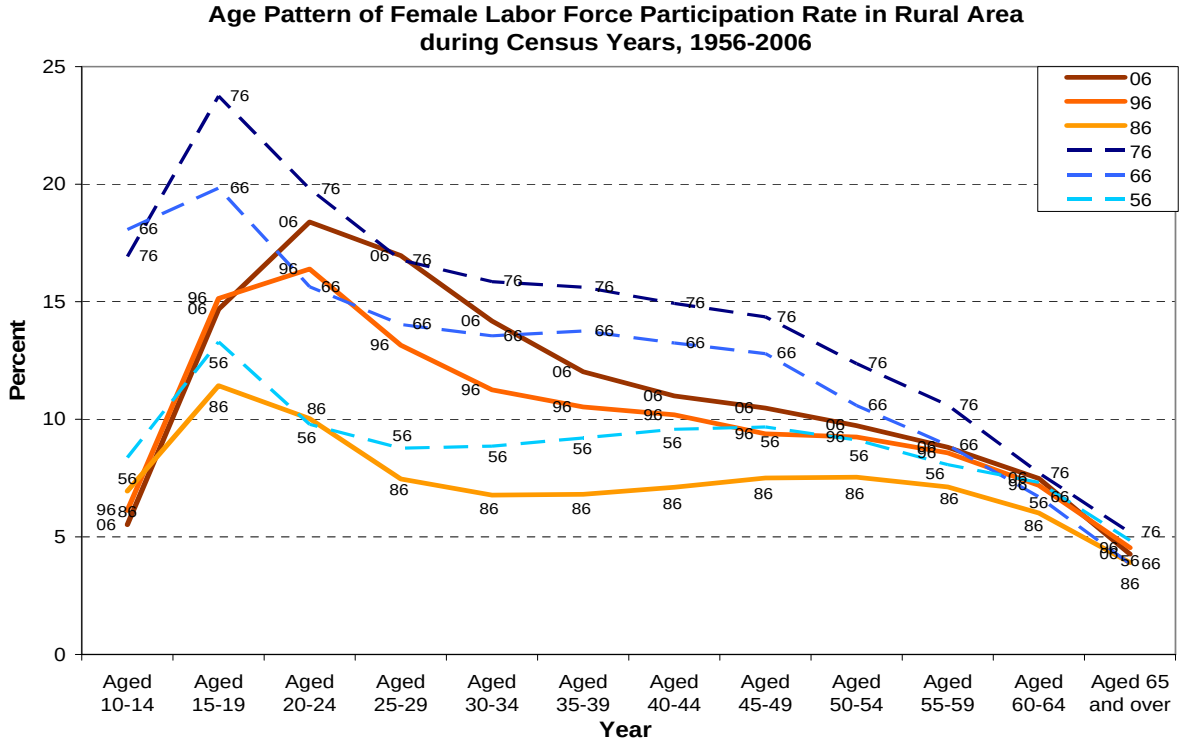
Source: NBER-United Nations Trade Data; Customs Administration, Islamic Republic of Iran.

Figure 3



Source: Statistical Center of Iran.

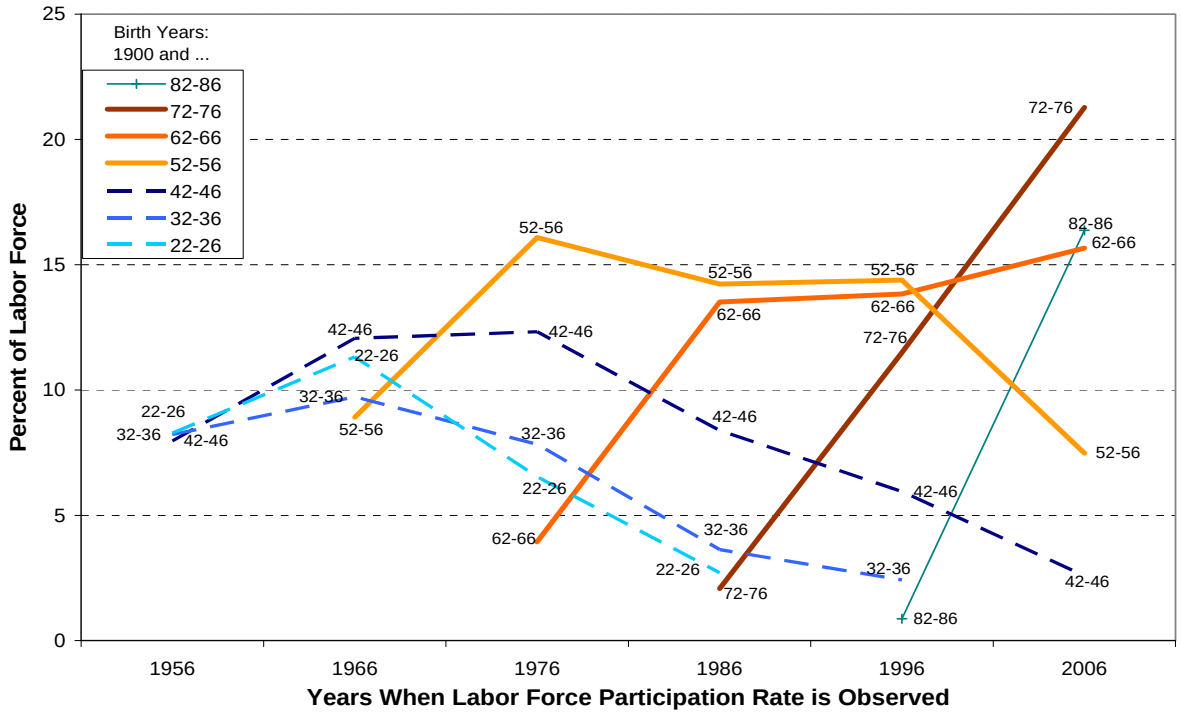
Figure 4



Source: Statistical Center of Iran.

Figure 5

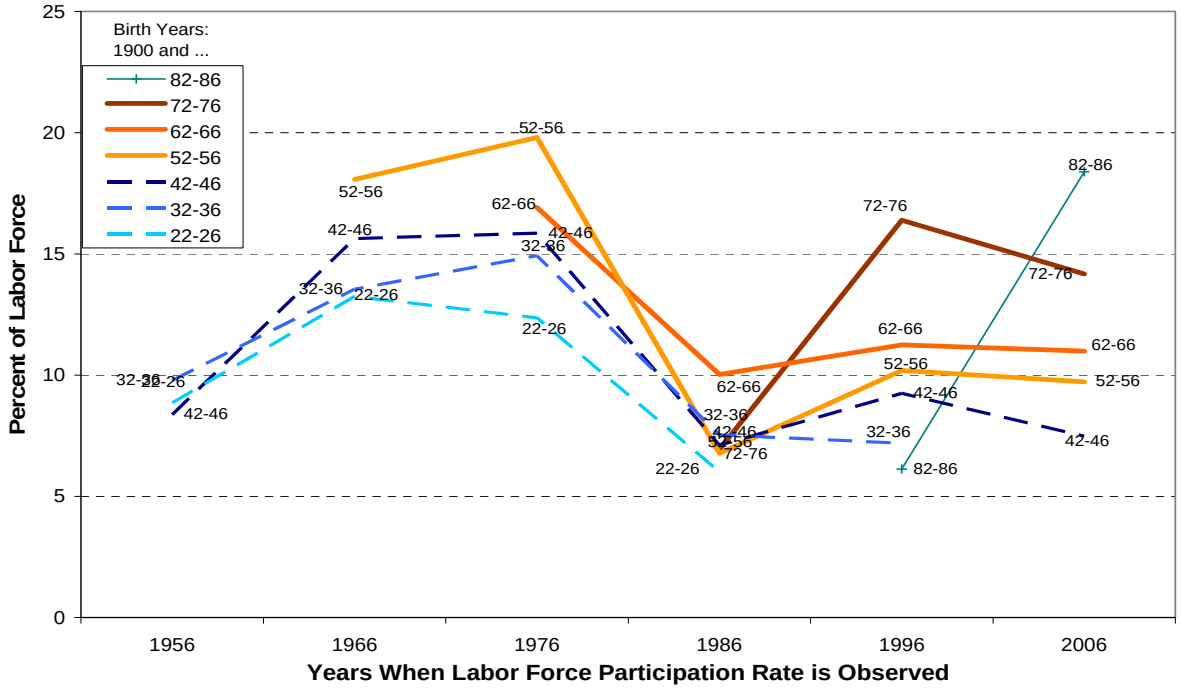
Profiles of Labor Force Participation Rates of Urban Women Cohorts Born in Different Decades



Source: Statistical Center of Iran.

Figure 6

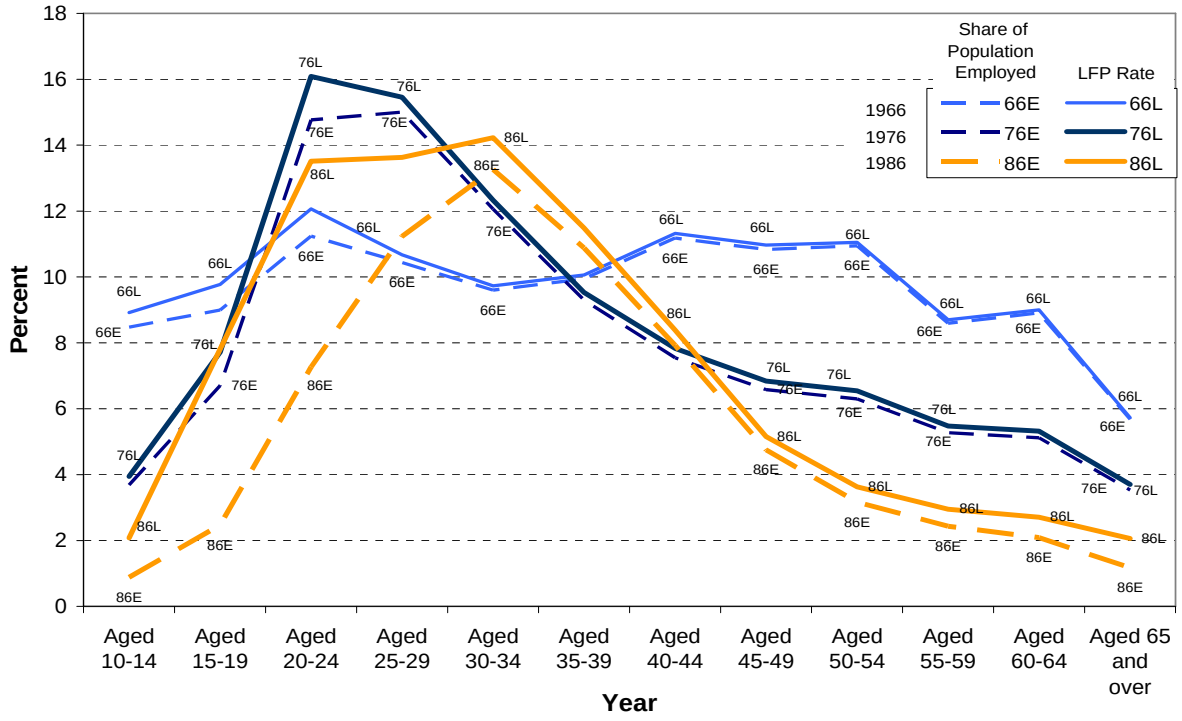
Profiles of Labor Force Participation Rates of Rural Women Cohorts Born in Different Decades



Source: Statistical Center of Iran.

Figure 7

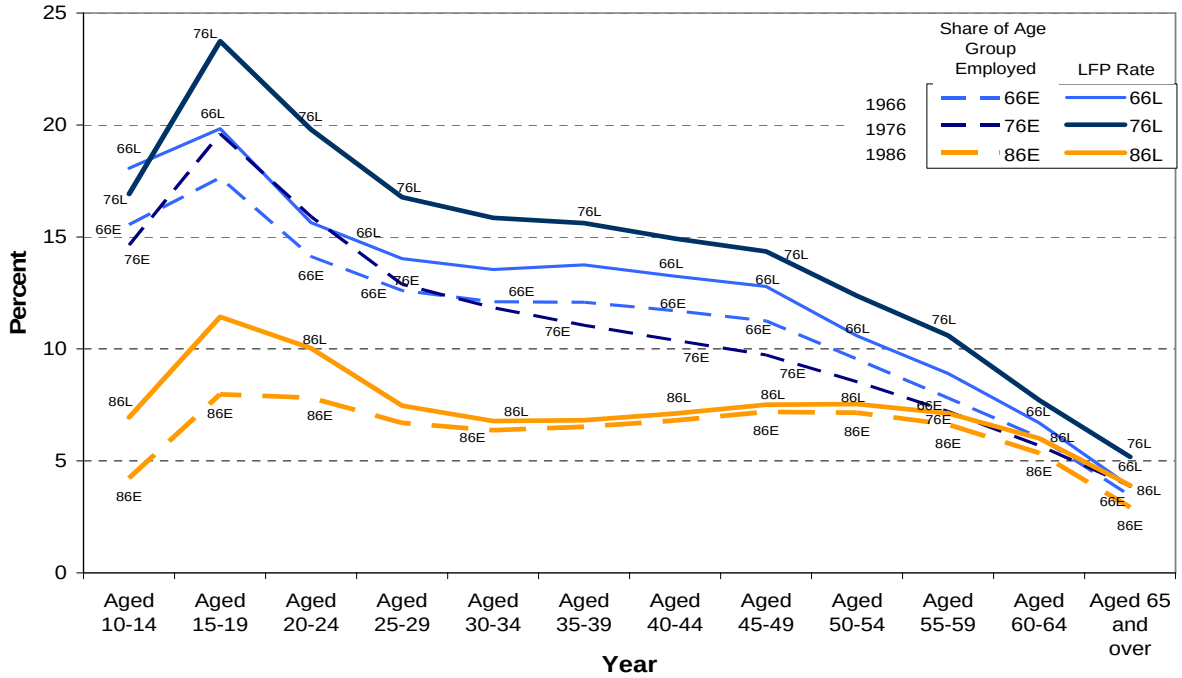
Age Pattern of Female Employment and Labor Force Participation Rate during Census Years, 1966-1986



Source: Statistical Center of Iran.

Figure 8

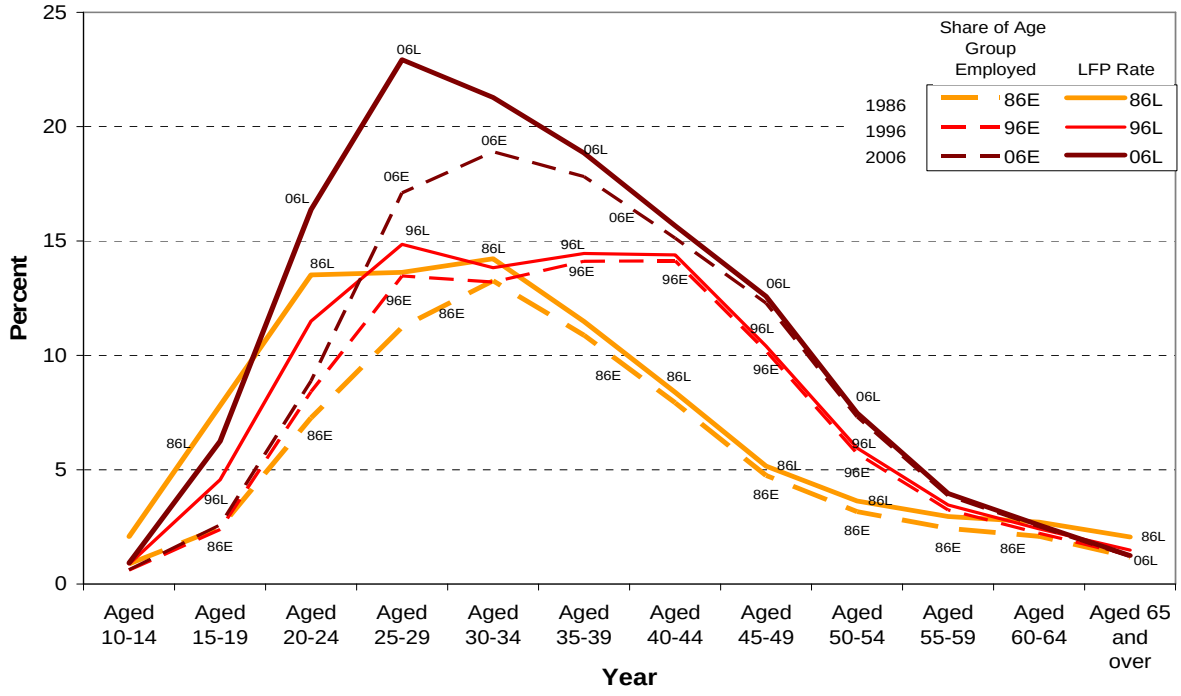
Age Pattern of Female Employment and Labor Force Participation Rate Rural Areas, Census Years 1966-1986



Source: Statistical Center of Iran.

Figure 9

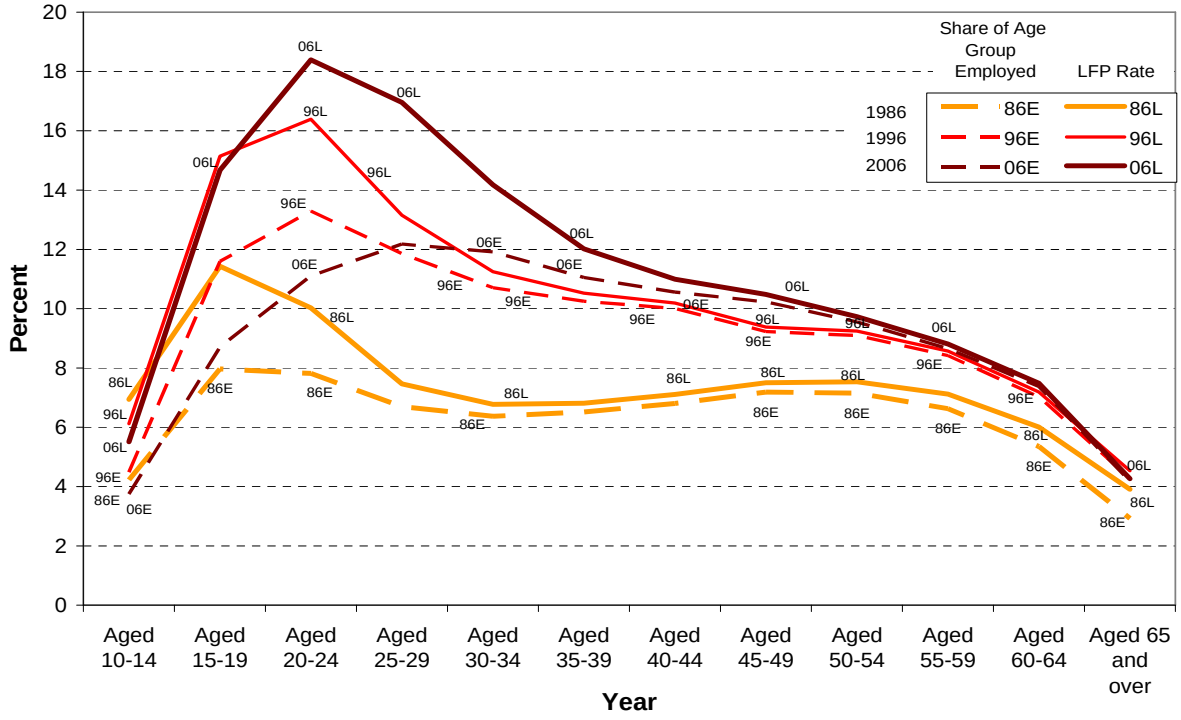
Age Pattern of Female Employment and Labor Force Participation Rate
Urban Areas, Census Years 1986-2006



Source: Statistical Center of Iran.

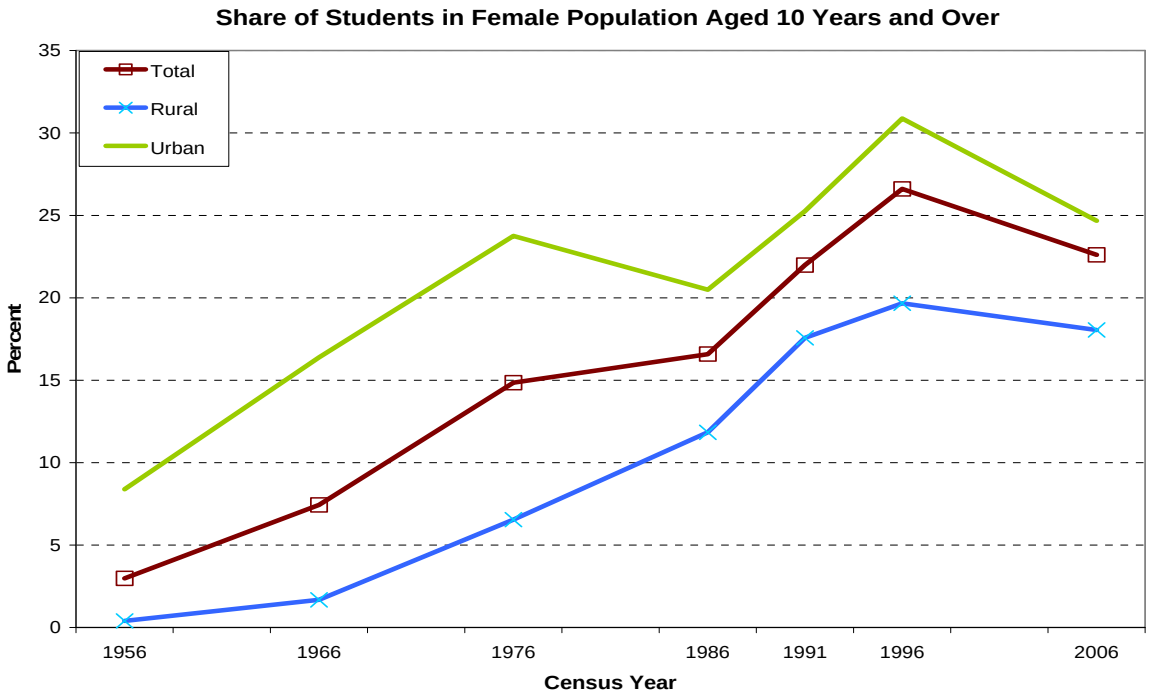
Figure 10

Age Pattern of Female Employment and Labor Force Participation Rate
Rural Areas, Census Years 1986-2006



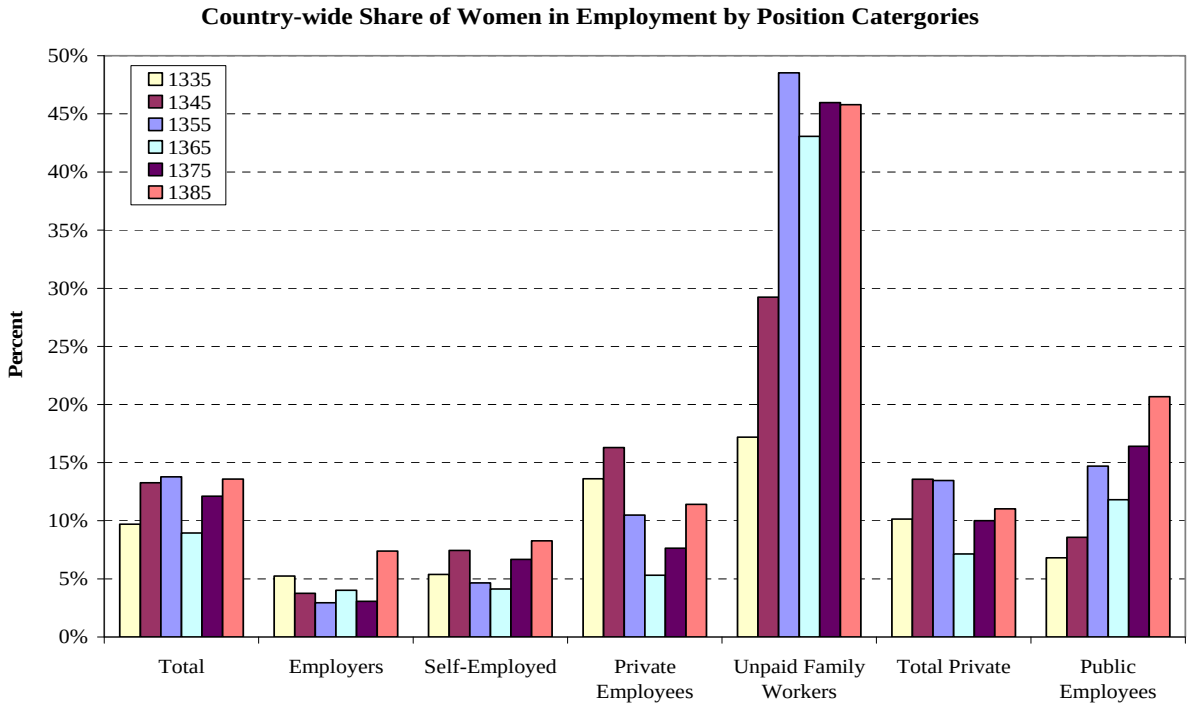
Source: Statistical Center of Iran.

Figure 11



Source: Statistical Center of Iran.

Figure 12



Source: Statistical Center of Iran.