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The Cost of Foreign Labor in the United Arab Emirates

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Abstract

The aims of this study are to estimate and analyze the labor cost and its distribution in the UAE and to decompose it to direct cost to firms (e.g., wages, non-wage benefits, recruitment costs, labor fees, insurance, end of services) and indirect costs (e.g., energy subsidies, use of public services and infrastructure, security and social risks, etc). Those costs are compared to and linked to productivity estimates of foreign workers to draw analysis of the impacts of these costs on several labor market issues and on the ability of the UAE economy to compete in international markets.

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Executive Summary

1. In the UAE, it is estimated that there are more than 4 million foreign laborers that work in around 260,000 private establishments. The large influx of foreign workers can be attributed to many factors, among them the high economic growth which is financed by the increasing oil revenue since the early seventies and which has led to excess demand for labor that cannot be met by domestic workers. However, over the years, this economic growth continues to rely largely in the non-oil sector on cheap foreign workers who have low reservation wages and coming especially from Asian countries which have excess supply of labor.

2. Compared to UAE nationals, the high economic rent associated with foreign workers and their ability to tolerate relatively poor working conditions and to work long hours have blown up the reliance on them until they dominated the private sector with more than 98% of overall laborers. However, the cheap cost to private sector companies may not be true for the society. The large presence of foreign workers (foreign population) demands amplification of the services provided by the government, including security and other measures, and they may threaten the national identity of the country.

3. The cost of employing foreign workers can be divided into the three types:
 - A. Administrative and recruitment costs: this type represents all kinds of fees that companies pay to different ministries and departments to import workers and giving them the legal status to work in the UAE, in addition to costs that are paid by those companies for human resources activities related to the employment of those workers.
 - B. Labor variable costs: they represent wages and salaries and all financial (monetary) and in-kind (non-monetary) benefits that are related to workers.

C. Social costs: they represent all direct and indirect costs that are borne by local and federal governments and society for the employment of workers.

4. The overall average annual administrative and recruitment costs per worker are estimated at around 2,674 AED in general, and at 3,404 AED for skilled workers and 2,296 AED for unskilled workers. Wages and cash and non-cash benefits are estimated at around 41,000 AED annually per workers in general. This cost for a skilled worker is close to 7 times that for an unskilled worker (129,302 AED to 18,925 AED annually). The overall social cost, which is assumed to be the same across skill levels, is estimated around 14,066 AED per foreigner. However, a foreigner pays around 2,507 AED annually in various fees to government departments on average. Therefore, the average annual social cost per foreigner (per foreign worker) can be estimated at around 11,559 AED after accounting for fees paid to the government. Overall, the total annual cost of labor is estimated at around 55,000 AED in general, and around 144,000 AED for a skilled worker and 33,000 AED for an unskilled worker.

5. Over the past years, many employers and other analysts of labor market have been arguing that the fees imposed by the government on importing foreign workers are high, especially those fees related to the ministry of labor. Our analysis shows that labor related fees that are paid to all government departments make only around 4% of overall cost of labor in general, and around 1% for skilled workers and around 6% for unskilled workers. Therefore, those costs, contrary to various claims, represent vary low percentage out of the total labor cost. The fees imposed only by the Ministry of Labor, on the other hand, represent around less than 1% (for skilled workers) to around 5% (for unskilled workers), or on average less than 3% of the overall labor cost of foreign workers.

6. Salaries make most of the cost of labor which is normal as they represent the price of the labor service in the production process. However, as percentage of the total cost, the price of this service is relatively high for skilled workers (90%) compared to unskilled workers (58%). This might point out to an exaggeration in the salaries given to skilled workers relative to unskilled workers due to their scarcity. Moreover, this gap might be attributed to the high competition over talents in contrast to the wider availability of large supply of unskilled and cheap workers especially from Asian countries.

7. The social cost, which makes around 21% of overall annual cost of labor in general, and 8% of the cost of skilled workers, and 35% of the total cost of unskilled workers, is a major component of the total cost, especially for unskilled workers. However, we may argue here that the social cost is under-estimated since we could include only items that can be valued in money terms. Other items such as the impact on culture and national identity, and on the causation of unemployment among UAE nationals, as a result of competition from relatively cheaper labor, are extremely hard to measure in monetary values, but as important as other included items.

8. Regardless of the estimation, the social cost of a worker represents an indirect government and social transfer to companies. Those private companies enjoy higher economic rents by employing foreign workers and they do not pay taxes to cover the cost incurred by the government and society as a result of the existence of those workers within the borders of the country. This indirect transfer implicitly benefits companies that employ more of unskilled workers as the share of total cost for them (35%) is higher than the share in total cost for skilled workers (8%). Therefore, because of the absence of a system that redirects all or part of the social cost of foreign workers to companies that employ them, the implicit indirect subsidy favors unskilled workers relative to skilled workers.

9. Depending on an estimated workforce of around 4.3 million (depending on records of the Ministry of Labor combined with estimates of the National Bureau of Statistics in various sectors), and a per worker social cost of 11,559 AED, the overall social cost to UAE government is estimated around 50 billion AED annually.

10. Productivity levels in the UAE show a clear decline over the years in the overall non-oil economy. The largest recent decreases can be observed in construction and real estate sectors. In terms of ranking, the construction sector is by far has the lowest levels of productivity, almost one-half the levels that are observed in the wholesale trade sector, which is also relatively has very low labor productivity. Other sectors that can be considered to be low in labor productivity are restaurants and hotels, and real estate and business services sectors. Sectors that can be considered as enjoying relatively high levels of labor productivity are financial corporations, manufacturing, electricity, gas and water and transportations sectors. However, overall non-oil productivity level in the UAE (212,162 AED in 2008) is competitive to international standards. In the Euro zone, total annual labor productivity in 2008 was around 74,261 USD (or 272,536 AED). In other countries, total labor productivity in 2008 ranged from around 129,000 and 137,000 AED in Mexico and Chile (labor-intensive countries) to around 392,000 and 435,000 AED in Norway and Luxembourg (capital-intensive countries).

11. Compared to costs of labor, productivity levels point out to very large economic rents that are enjoyed by private companies and by the UAE economy from using foreign workers. These rents are close to 170,000 AED annually per worker on average, around 360,000 AED annually on average for a skilled worker and around 121,000 AED for an unskilled worker. However, productivity levels for unskilled workers are close to seven folds compared to the cost of unskilled workers, while they are less than four folds for skilled workers.

12. Productivity-adjusted labor costs refer to the labor cost of producing one dirham worth of output. In general, one dirham of output costs in the UAE around 20 fils of labor cost excluding the social cost, and 26 fils of labor cost including the social cost. For skilled workers, one dirham worth of output costs around 27 fils worth of labor input (or 29 fils including the social cost). Unskilled workers can produce at a cheaper price: one dirham worth of output costs only 15 fils of cheap labor cost (or 23 fils including the social cost). Therefore, using unskilled workers the UAE economy may produce the same amount of output produced by skilled workers but at a significantly lower labor cost. In other words, competitiveness of the UAE economy might be linked strongly to the use of cheap and unskilled workers.

13. On the other hand, and in line with the UAE plan to move to a knowledge-based economy, a move from an unskilled-labor intensive to a system that relies less on cheap labor and more on skilled labor is very costly, taking into consideration the huge differences in average wages realized for the two groups and the difference in productivity-adjusted labor costs noted above. The non-oil UAE GDP in 2008 (924 billion AED) was produced by a mix of skilled workers (20%) and unskilled workers (80%). Using the productivity-adjusted labor cost figures above, the cost of producing this GDP level was around 161 billion AED¹. If the non-oil GDP was produced only by using unskilled labor, it would have cost around 139 billion AED. If it was produced only by using skilled labor it would have cost around 250 billion AED. Therefore, hypothetically, if the UAE moves to a labor market with only unskilled workers, it saves around 22 billion AED, and if it moves to a system with only skilled workers it loses 89 billion AED. Therefore, it is very costly to move from unskilled to skilled labor under the current system of production in the UAE.

¹ Here we exclude the social cost of our analysis, for simplicity.

14. The main policy recommendations of the paper include the following:
- A. Economic plans in the UAE must take into consideration the fact that the economy under the current system might be highly vulnerable to external or unexpected shocks in the labor market that may alter wages of unskilled workers.
 - B. In its plans to divert away from oil and move into a knowledge-based economy, the UAE economy needs to reorganize the labor market to meet future economic growth requirements in a way to enhance and support competitiveness power, to secure sustainable opportunities for nationals and to improve working conditions for the foreign labor force. New jobs have to be created in the more promising sectors that use advanced technologies or based on knowledge economy to immune the markets, including the labor market, from vulnerability to regional and international economic shocks.
 - C. The threat to national identity cannot be estimated in numbers within the social cost figures. This threat is amplified by the faster growth of foreigners relative to UAE nationals, and it requires difficult and hard measures to bring back these numbers into an acceptable range.
 - D. Skilled workers may have positive spillovers in terms of social benefits such as their transfer of knowledge and talents into other people in society. Therefore, a policy which impacts the cost of hiring unskilled workers relative to skilled workers, such as higher fees, may have a positive effect on social labor cost incurred by society.
 - E. The UAE economy should move away from its welfare orientation and should engage private companies in paying part of the social cost.
 - F. A carefully-set minimum wage specific to labor-intensive industries may be needed to protect foreign workers from exploitation of some employers and to discourage the employment of low-skilled workers. In the long run, minimum-wage policies increase productivity and competitiveness of the economy by moving into more sophisticated production technologies and higher quality products.
 - G. Thus, satisfying the future needs of the growing number of UAE nationals requires, on the supply side:

- a. Reforming the public education system to prepare UAE nationals to take medium and high skill jobs in the labor market supported by,
- b. A proper management of the flow of low skilled foreign workers into the country. One way to do this is to levy higher fees on the least skilled work categories to discourage the current over reliance on low-skilled, labor-intensive production of goods and services.

And on the demand side,

- c. Private companies should be encouraged to increase the use of technology and knowledge-based techniques to create jobs that are suitable to UAE nationals and can compete with government jobs.
- d. Most private companies enjoy large economic rents by employing foreign workers, and they should be encouraged, at least in the short run, to give up some of this economic rent to employ and train UAE nationals.
- e. Moreover, the UAE may consider wages policies that bring public sector wages for nationals and private sector wages into an acceptable range.

Introduction

The UAE economy is a transitional economy that attempts to diversify away from hydrocarbon-based to non-hydrocarbon-based economic growth. One of the main constraints during the transition is the scarcity of skilled knowledge workers from the local population while there is abundant supply of imported mostly unskilled foreign workers.

It is estimated that more than 4 million foreign laborers work in around 260,000 private establishments in addition to government and semi government departments and companies in the UAE. The large influx of foreign workers can be attributed to many factors, among them the high economic growth which is financed by the increasing oil revenue since the early seventies and which has led to excess demand for labor that cannot be met by domestic workers. However, over the years, this economic growth continues to rely largely in the non-oil sector on cheap foreign workers who have low reservation wages and coming especially from Asian countries which have excess of supply of labor.

Compared to UAE nationals, the high economic rent associated with foreign workers and their ability to tolerate relatively poor working conditions and to work long hours have blown up the reliance on them until they dominated the private sector with more than 98% of overall laborers. However, the cheap cost to private sector companies may not be true for the society. The large presence of foreign workers (foreign population) demands amplification of the services provided by the government, including security and other measures, and they may threaten the national identity of the country.

Understanding the costs of labor is the first step towards understanding the structural imbalance of the labor force in light of the new strategic development plan for the UAE economy. The importance of the labor cost emerges from the fact that it is the main cost within the production process and its effects on the ability of a country to compete in the international markets and to attract foreign direct investment are enormous.

The aims of this study are to estimate and analyze the labor cost and its distribution in the UAE and to decompose it to direct cost to firms (e.g., wages, non-wage benefits, recruitment costs, labor fees, insurance, end of services) and indirect costs (e.g., energy subsidies, use of public services and infrastructure, security and social risks, etc). Those costs are compared to and linked to productivity estimates of foreign workers to draw analysis of the impacts of these costs on several labor market issues and on the ability of the UAE economy to compete in international markets.

In our estimation and analysis, we use several sources of data including administrative data, the 2008 UAE Labor Force Surveys, the 2009 Dubai Economic Council (DEC) Labor Cost Survey and the Ministry of Labor's (MoL) Wage Protection System and Administrative Database.

Components of the Cost of Foreign Workers

The cost of employing those workers can be divided into the following types:

- A. Administrative and recruitment costs: this type represents all kinds of fees that companies pay to different ministries and departments to import workers and giving them the legal status to work in the UAE, in addition to costs that are paid by those companies for human resources activities related to the employment of those workers.
- B. Labor variable costs: they represent wages and salaries and all financial (monetary) and in-kind (non-monetary) benefits that are related to workers.
- C. Social costs: they represent all direct and indirect costs that are borne by local and federal governments and society for the employment of workers.

1. Administrative and Recruitment Costs:

The administrative cost can be tracked down by looking at the procedure of importing and employing foreign labor in the UAE. The procedure is not unified as it differs for workers in the private sector to those in local or federal governments or in the free zones. We will highlight here the procedure in the private sector as it contains the largest portion of workers in the country. We do not include sponsorship transfers for workers already inside the country or workers under a husband or a father sponsorship. We also ignore temporary and mission work permits. Finally, we assume that a worker spends on average six years in the country and then leaves the UAE².

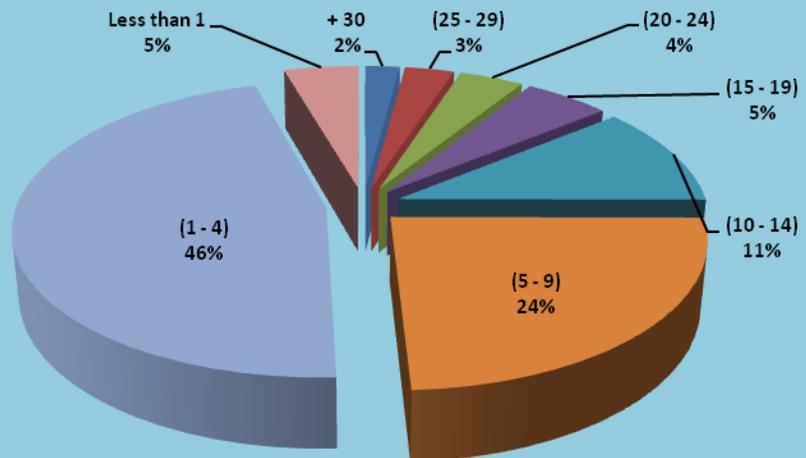
² See Box [1].

A. Firms have to get an approval from the Ministry of Labor to get foreign laborers into the UAE. This can be done by submitting a “Labor Permit” or a “Group Labor Permit” form for approval. Labor permits forms should include the number of workers, their nationalities, gender, and profession, along with the justifications for the needs for those workers. Acceptance of labor permits depends on the track record of labor violations in the company. The fee for this step is 200 AED per worker, plus a 40 AED as an application printing cost.

Box [1] Duration of Stay in the UAE

According to the 2005 Census, around 46% of the foreigners have been in the UAE for a period between one to 4 years, and around 24% of them have been in the country between 5 to 9 years. Only around 5% have been in the UAE for less than a year and around 25% for more than 10 years. The weighted average across all groups estimated the duration of stay for a foreigner in the UAE to around 7.4 years.

Non-Citizens by Duration in the Country, 2005 Census (Years)



By removing everyone who is above 60 years old, the weighted average is reduced to 7.3 years. However, it is expected that the duration of stay for employees in the government sector (and their families) is more than those who work in the private sector, and, in addition to the propose of simplifying our analysis, we assume that the average duration of stay for a worker in the private sector is six years.

B. Upon acceptance of the “group Labor Permit”, individual labor permits should be submitted. The fee paid for an approval of Group Labor Permit (or labor card) is 1000, 2000, or 3000 AED depending on the classification of the company³, then the ‘labor permit’ is obtained. According to Ministry of Labor figures, companies that are currently classified in category A employ around 21% of the workers, companies that are classified under category B employ around 52% of workers, while companies that are currently classified under category C employ around 27% of total workers in the Ministry’s database (see tables 8-11 in Appendix 1). Therefore, we use the above percentages as weights when calculating the various fees that are affected by those classifications. In the current case, the fee paid for an approval of Group Labor Permit (or labor card) is 2060 AED on average. The labor card is renewed every three years for a fee of 500, 1500, or 2500 AED according to the classification of the company, or on a weighted average at a fee of 1560 AED.

C. Firms also deposit a bank guarantee in the amount of 3000 AED per worker⁴. This amount represents a locked sum of money that cannot be invested in the companies’ activities. Therefore, the return on investment is lost on that amount. We assume here an investment return rate of 10%; therefore, the lost return per worker, during the assumed length of stay which is six years, is around 2,315 AED, or on annual basis 386 AED.

³ Companies are classified into the following categories according to the percentage of workers from one nationality in that company:

- (A) If the number of workers from one nationality is 29% or less.
- (B) If the number of workers of the same nationality is between 30% and 69%
- (C) If the number of workers of the same nationality is 70% or above.

Companies can improve their ranking by hiring UAE nationals.

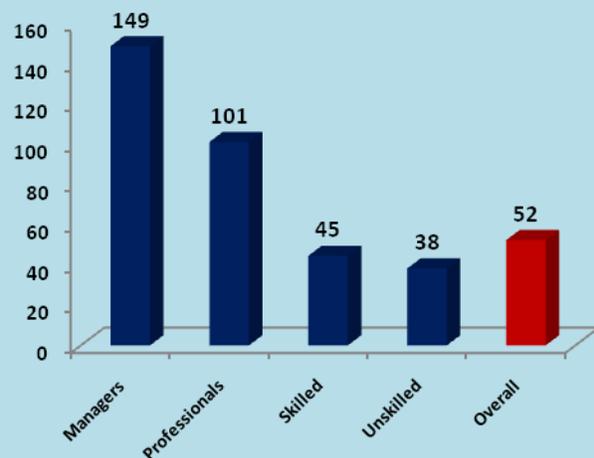
⁴ Some companies that have large number of workers may deposit a lump sum amount of money as a bank guarantee as per a prior agreement with the Ministry of Labor. In this case, the bank guarantee ends up at a smaller amount than 3000 AED per worker.

- D. Firms, then, apply for a labor entry visa for each worker at the Naturalization & Residency Directorate. Fees per application are either 250 AED for workers outside the country or 560 AED to workers already in the UAE (on a visit visa for example). We restrict our analysis for workers that come from other countries.
- E. Firms bring the workers to the country paying the corresponding airfares, and combined with all other HR and recruitment fees these costs sum up to around 7,824 AED (1304 AED annually) for a skilled worker, or 2,352 AED (196 AED annually) for an unskilled worker⁵. According to the distribution of workers in the private sector, 20% of total workforce can be classified as skilled and 80% as unskilled⁶. Therefore, the weighted average one-time cost of recruitment is around 3,446 AED or 574 AED annually.

Box [2] DEC Cost of Labor Survey in Dubai

This survey covered a sample of 500 companies that represent different sectors in Dubai and aimed to provide a general descriptive analysis of the cost of labor, and its components such as wages and benefits, cost of hiring and laying-off and fees. Although the survey suffered from many problems, among them is the inconsistency in recording the data, the data can be useful in highlighting some facts regarding the cost of labor.

Annual Cost of Labor in Dubai, 2008 (thousand AED)



Source based of DEC Cost of Labor Survey 2008

⁵ Estimates are from the cost of labor survey in Dubai which was conducted by the Dubai Economic Council in 2009. For a brief explanation of the survey, see Box [2].

⁶ Those estimates depend on the dominance of unskilled workers or skilled workers in each of the private sectors, as well as on the estimates in the 2005 Census (see Box [3]).

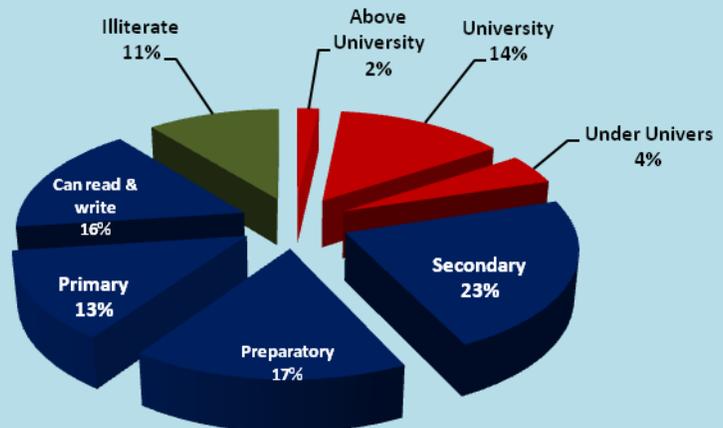
F. Firms apply for residency permits for their workers. To do so, a health check up is performed at public hospitals for a fee around 800 AED, and a permit fee of 475 AED per worker is paid to the Naturalization & Residency Directorate.

After these steps, foreign workers become legal residents in the UAE who are entitled to work in the country.

Box [3] Education of Foreign Employees in the UAE

According to the 2005 Census, around 11% of foreign workers are illiterates, 16% claim to be able to read and write and around 53% have a school degree between primary and secondary. Only around 20% have an educational degree above high school (diploma, university degree, masters' degree, or PhD.) If we assume that workers who have any degree above high school are skilled, then the breakdown between skilled to unskilled is 20% to 80%.

Foreign Employees by Education in the UAE, 2005 Census (%)



Now, we can estimate the overall average annual administrative and recruitment costs per worker to be around 2,674 AED (3,404 AED for skilled workers and 2,296 AED for unskilled workers)⁷. In the normal case and by existing laws, these costs are carried out by the employer firm. However, in some circumstances, workers may pay some amount of money to labor employment offices at their home country to be able to secure an opportunity to work in the UAE.

⁷ The end-of-service dues can be thought of as part of the administrative cost. However, since they depend on salaries, they will be included in variable costs.

Table (1): Average annual administrative and recruitment costs per foreign worker in the private sector in the UAE

Procedure Name	Duration	Average Cost	Per-year Cost
Labor permit	One Time	240	40
Labor Card	3 years	2060	687
Renew labor card	3 years	1560	520
Investment return lost on bank guarantee deposit	6 years	2315 ⁸	386
Labor entry visa	One time	250	42
HR and recruitment fees	One time	3,446	574
[Skilled]		[7,824]	[1304]
[Unskilled]		[2,352]	[196]
Health Check + Health Card	3 years	800 ⁹	267
Residency permit	3 years	475	158
Overall Cost	-	-	2,674
[Skilled]			[3,404]
[Unskilled]			[2,296]

⁸ We assume an annual investment return of 10%.

⁹ The cost for the health test is 450 AED, and the cost of the health card is 300 plus 50 AED the cost for printing.

2. Labor Variable Cost (Wages, Salaries, and Benefits)¹⁰:

We depend on the Ministry of Labor's Wage Protection System (WPS) for March 2010 to estimate average wages and salaries given to workers within the UAE. The system records actual salaries paid by private companies and it currently includes more than 1.7 million records.

According to the WPS system, the average realized monthly basic salary in the private sector is around 3,537 AED (annual 42,444 AED) and average monthly allowances is around 433 AED (annual 5,196 AED). Therefore, the average total monthly salary can be estimated at around 3,970 AED, or on annual basis, 47,640 AED. The median values are much less in comparison to average values. The median total annual basic salary is around 31,056 AED (monthly 2,588 AED) and the median annual total salary (including allowances) is around 34,414 AED (monthly 2,868 AED). As the median is less sensitive to outliers and extreme values in the dataset, we will be using median values in our analysis.

The difference in salaries between unskilled workers and skilled workers is very large. The median monthly basic salary for an unskilled worker is around 1,135 AED (annual 13,620 AED) and the median total monthly cash salary is around 1,327 AED (annual 15,924 AED), which means that the median allowance is estimated at around 192 AED (annual 2,304 AED). The median monthly salary of a skilled worker is around 8,400 AED (annual 100,800 AED) and the total monthly cash salary is around 9,031 AED (annual 108,372 AED) which puts median monthly allowances at around 631 AED (annual 7,572 AED).

¹⁰ For a complete analysis on wages and benefits, see Qingxia Tong, Wages Structure in the United Arab Emirates, ISER's Working Paper No. 2, July 2010..

The system does not provide information on the in-kind benefits; therefore, we depend on the labor force survey 2008 which is conducted by the National Bureau of Statistics, jointly with Abu Dhabi and Dubai Statistics Departments. The survey estimates the value of in-kind benefits to be around 13.5% of total cash salary. Therefore, annual in-kind benefits in general are estimated at around 4,646 AED (2,150 AED for an unskilled worker and 14,630 AED for a skilled worker).

According to the labor law in the UAE, the end-of-service dues in the private sector are calculated as the basic salaries of 21 days for each of the first five years of service and as the salary of one month on each of the remaining working years, taking into account that these dues should not exceed the combined salaries of two years. Here, to estimate the end-of-service dues, we use the monthly median fixed income that is realized from the Ministry of Labor's Wage Protection System. The median salary is around 8,400 AED for a skilled worker and 1,135 AED for an unskilled worker. The overall basic salary, then, can be estimated at around 2,588 AED¹¹. Therefore, for a worker who spends six years at service, on average, the end-of-service dues are estimated at around 37,800 AED for a skilled worker, 5,108 AED for an unskilled worker, and 11,646 AED in general. Then, the annual cost is estimated at around 6,300 AED, 851 AED, and 1,941 AED for the above mentioned categories, respectively.

Including all variables costs (cash and in-kind benefits), the median total variable cost for a worker in the private sector is estimated at around 41,001 AED annually. This cost for a skilled worker is close to 7 times that for an unskilled worker (129,302 AED to 18,925 AED annually).

¹¹ This is the weighted average of the skilled and unskilled using the percentages 20% and 80% respectively. The reason for not using the overall median is that it will be biased in our analysis as it falls in the unskilled category, the dominant category in the database.

Table (2): Median annual salaries and allowances for workers in the private sector in the UAE, March 2010 (AED)

	Cost Items	Median	Total Annual Variable Cost
Overall ¹²	Basic salary	31,056	41,001
	Allowances	3,358	
	Total cash salary	34,414	
	Estimated in-kind salary	4,646	
	End-of-service	1,941	
Unskilled	Basic salary	13,620	18,925
	Allowances	2,304 ¹³	
	Total cash salary	15,924	
	Estimated in-kind salary	2,150 ¹⁴	
	End-of-service	851	
Skilled	Basic salary	100,800	129,302
	Allowances	7,572	
	Total cash salary	108,372	
	Estimated in-kind salary	14,630	
	End-of-service	6,300	

The difference between skilled and unskilled salaries is very large and necessitates some attention. We refer to the historical analysis using contract wages in the Ministry of Labor’s database. Figure (1) shows the evolution of real contract wages for skilled and unskilled workers in the UAE from 1990 to 2010, in 2000 prices. In general, real contract wages decreased for skilled workers from 1991 onwards, and then started to increase after 2005. For unskilled workers, the drop in real wages continues until 2008, and started to increase in 2009. However, the drop in real wages among skilled workers between 1996 and 2001 was sharper; therefore, the gap in salaries between the two was shrinking during that period, and thereafter, started to widen again. This acceleration in the increase in the gap in salaries after 2001 could be attributed to the larger demand for talents in the region and internationally as a result of higher economic growth, which created more competition over skilled workers, and thus, they were offered higher salaries. For unskilled workers, the demand was also rising, but was easier

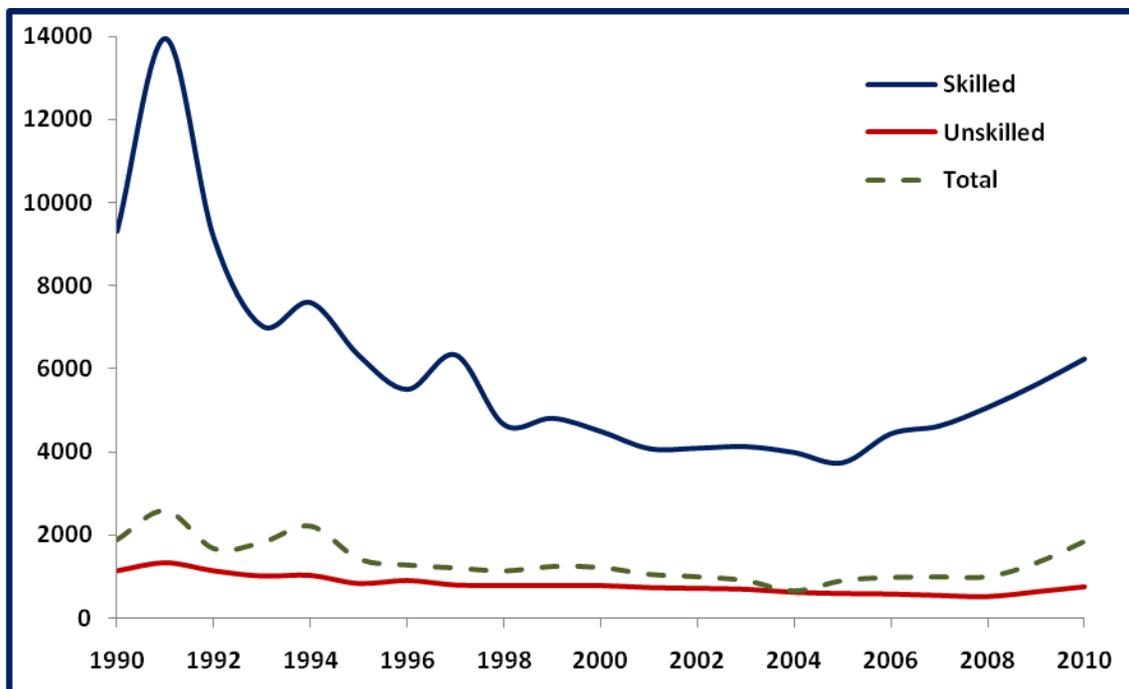
¹² Numbers are calculated as the weighted averages of skilled and unskilled salaries and benefits (see footnote 10 above).

¹³ Allowances are calculated as the difference between total and basic salaries.

¹⁴ It is estimated from the labor force survey of 2008 that salaries in kind are around 13.5% of total cash salaries on average.

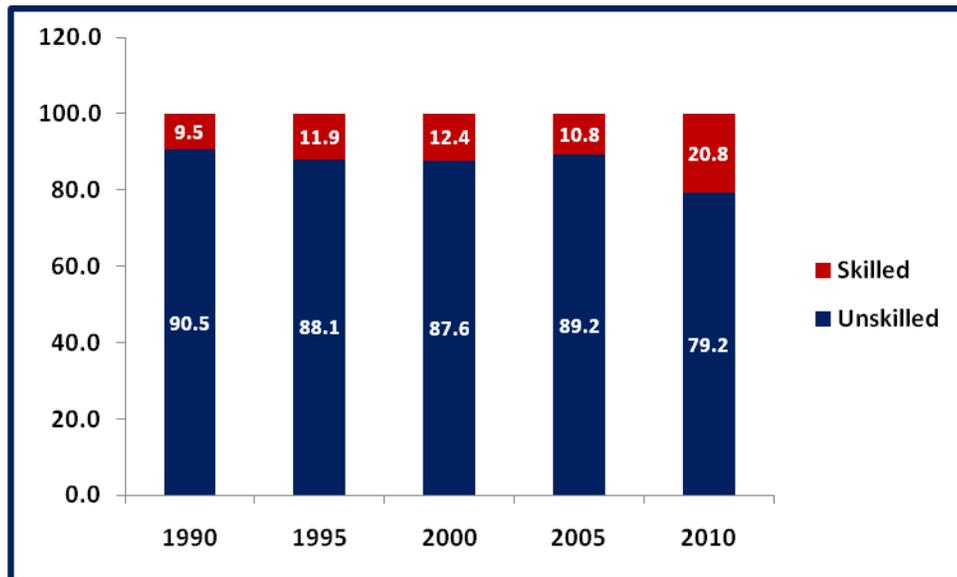
to satisfy as the supply of unskilled workers, especially from Asian countries, is very large. Moreover, the demand for skilled workers increased faster than the demand for unskilled workers as a result of the larger diversity of economic activities in the country. This is evident from figure (2) which shows the decomposition of skilled versus unskilled workers in the Ministry of Labor Database for selected years¹⁵. In 1990, unskilled workers made more than 90% of overall workers. In 2010, they made less than 80%.

Figure (1) Median monthly real contract wages in the UAE 1990-2010 (2000 prices)



¹⁵ Note here that the sample depends on the records that exist in the Wage Protection System (1.7 million records) which is a subset of the complete database (4.1 million records).

Figure (2) Decomposition of skilled vs. unskilled workers in the UAE private sector 1990-2010 (%)



The growth in real contract wages was fluctuating sharply for both skilled and unskilled workers. The overall average annual growth from 1990 until 2010 was around -0.4% for skilled workers and -1.5% for unskilled workers. However, from 2005 to 2010, the growth in real contract wages was large, reaching an annual average of around 8% for skilled workers and 4% for unskilled workers. In addition to the larger demand for skilled workers, the larger growth in real wages for skilled workers compared to unskilled may be attributed to several other factors such as the drop in price of dollar relative to other currencies such as the euro, which pushed Europeans (most of which are skilled) to press on for higher salaries, and to the sharp increase in the cost of living which affects skilled workers (who generally accompanied by families) more than unskilled workers.

Finally, regression results in ISER's working paper (2)¹⁶ show that real wage levels in the private sector in the UAE are very sensitive to educational levels (negative

¹⁶ SEE, Qingxia Tong, Wages Structure in the United Arab Emirates, ISER's Working Paper No. 2, July 2010.

coefficients up to high school and very large and negative for illiterates), and that the differences in salaries between ordinary (unskilled) workers and other categories of professional and managers are very large. Therefore, the gap in these wages might be also explained by the very low educational levels among the unskilled, and relatively, the high educational attainments among skilled workers in the UAE private sector.

3. Social Cost of Labor:

The benefits of using large numbers of foreign workers in the UAE can be proxied by productivity or the average contribution of a worker to total output. However, it is extremely difficult to estimate the cost to society from the existence of those foreign workers in the country. Foreign workers use infrastructure and public facilities, they add to the cost of maintaining security, they consume some of the subsidies, and they may impact cultural identity of the country; among many other things.

Here we will depend on average spending by local and federal governments on items that can be used by foreigners to get an estimate of the social cost of foreigners in the UAE. Needless to say that the estimated cost will never represent an accurate social cost to the UAE of those foreigners as the cost of many items cannot be converted into monetary values, one of those is the threat to the social identity of citizens in the country.

Table (3) presents an approximate of the social cost per foreigner in the UAE. The estimates of the different main items are calculated as follows¹⁷:

¹⁷ Some costs are calculated only for foreigners and other costs are related to items that are enjoyed by all people and thus their costs are calculated for the population as a whole. In all cases, the cost per foreigner is what we seek, which is the same as the cost per foreign worker in the analysis of this paper.

- A. For the internal security spending, federal spending (shown in Abu Dhabi budget) represents all emirates except for Dubai. The internal security budget for Dubai was 7.1 billion AED for 2009 while the budget for the other emirates was around 15.1 billion AED for the same year. This put the overall spending on internal security at around 22.2 billion AED for 2009. The UAE official population estimate for 2009 is around 5.066 million¹⁸. Therefore, the share of security spending per person for 2009 is around 4,382 AED.
- B. The roads and infrastructure spending for 2009 was around 12 billion AED in Dubai and 2.2 billion AED for Northern Emirates (Abu Dhabi spending on this item is not available). We assume that the expected life span of these projects is 20 years at a depreciation rate of 5%, which puts the cost per year in the UAE (excluding Abu Dhabi) at around 710 million AED. The UAE population in 2009 for the six included emirates is estimated at around 3.392 million (Abu Dhabi's population is estimated at around 1.674 million in 2009). Therefore, the annual share per person of government spending on roads and infrastructure is around 209 AED.
- C. The subsidy offered by the government on electricity is somehow difficult to estimate since no official estimates on the cost of producing electricity are available. However, unofficial estimates of the cost per KWh put it between 0.50 and 0.80 dirham, while each KWh is sold at around 0.25 AED on average; a subsidy between 0.25 and 0.55 AED per KWh. The average annual electric power consumption (KWh per capita) is 16,165¹⁹ in 2007 according to the World

¹⁸ A recent, unofficial, report issued by the National Bureau of Statistics in the UAE refers to a current population of 8.2 million depending on administrative and vital records. However, the official endorsed figure in the UAE is still substantially lower.

¹⁹ The number includes residential as well as all other kinds of use. One may argue that industrial consumption of electricity at subsidized prices results in an indirect subsidy to residents in the form of lower prices for goods and services. Moreover, residents get the benefits of the uses of electricity in streets and other infrastructures.

Bank WDI 2009. Therefore, the subsidy per person is estimated at around 4,041 to 8,891 AED annually, or taking the middle point, around 6,466 AED²⁰.

- D. According to the International Energy Agency, motor gasoline and Diesel consumption in the UAE in 2007 were 3,573,000 and 4,183,000 tones, or 4.8 and 4.9 billion liters, respectively²¹. The value in current prices in the UAE (1.5 AED per liter for gasoline and 2.1 AED per liter for diesel) of this consumption is around 17.5 billion AED. According to the World Bank, these current prices are 35% less than average international prices. Therefore, the overall subsidy of fuel can be estimated to be roughly around 6.1 billion AED, or 1,204 AED per person depending on the official estimate of UAE population.
- E. Public education spending in general goes to UAE nationals. However, some foreigners enjoy a form of free public education at schools and universities. For universities, the number of students at Zayed University, United Arab Emirates University, and the Higher Colleges of Technology for 2009/2010 is around 18,943. The number of foreign students at the United Arab Emirates University (the only university that welcomed foreigners in 2009/2010 academic year) is 2,380. Therefore, the percentage of foreign students at public universities is around 12.6%. At public schools the number of students for the 2008/2009 academic year was around 262,373; out of those 48,162 were foreigners (18.4%). The federal education budget for 2009 was around 9.7 billion AED, around 5 billion AED were allocated to public schools, and 4.7 billion AED allocate to public universities. Therefore, the share of foreigners from this spending was around 920 million AED in public schools and 592.2 million AED in public universities. Thus, in total, the share of spending in public education on foreigners was around 1.512 billion AED, or per one foreigner it can be estimated at around 378 AED annually (depending on an estimate of foreign population at around 4 million for 2009).

²⁰ Calculations for water subsidies came out to be minimal and therefore are ignored in the analysis.

²¹ One ton of gasoline equals to 1.356 liters and one ton of diesel equals to 1,177 liters.

- F. For health spending, according to the Ministry of Health in its 2007 report, the numbers of public hospital services to outpatients were around 1.4 million to citizens, and 651 thousand to non-citizens. Non-citizens currently pay for health services at public hospitals in most cases. However, these payments are significantly lower than those in private hospital for up to 50%. Therefore, we may assume that the use of free public health services by non-citizens can be estimated at around 16% (which is one-half of the percentage of visits to public hospitals by non-citizens). The public health cost per person is estimated at around 4,600 AED, which makes the overall public health appending at around 23.3 billion AED in 2009. The share for non-citizens of free public health service is around 3.728 billion AED (16% of the total). Therefore, depending on an estimated population of expats around 4 million in 2009, the share per one foreigner of free public health service is around 932 AED annually.
- G. Remittances by foreign workers to their home countries are withdrawn from the economic cycle, and thus, they have an indirect cost to the UAE which can be thought of as an opportunity lost for investment. According to the balance of payments for the UAE published by the IMF's article IV, private remittances are estimated at around \$9.5 billion (34.9 billion AED) in 2009. Most of these remittances are sent abroad by foreigners who are estimated at around 4 million. Therefore, the share per foreigner of remittances is around 8,725 AED annually. If we assume that the amount can be saved for six years (the assumed duration of stay in this study) at an investment return of 5% (realized investment return on the UAE national bonds – Al Sukuk Al Wataniya²²), the accumulated return will be around 2,967 AED. This means that the annual loss of investment return per foreigner is around 495 AED.

²² This percentage is taken from a speech to Al Bayan Newspaper in April 4, 2010 by the CEO of the National Bonds Company. The reason for using the return on the national bonds is that they are suitable for people with small installments of money to invest; such as foreign workers in the UAE.

The overall social cost depending on the six main items listed above is then around 14,066 AED per foreigner. However, UAE nationals and foreigners pay different kinds of fees to the government when they seek some services. The consolidated UAE budget estimate the overall fees and charges that are collected in 2009 at 12.7 billion AED, therefore, the per person annual fees are around 2,507 AED. Therefore, the average annual social cost per foreigner (per foreign worker) can be estimated at around 11,559 AED after accounting for fees paid to the government.

Table (3): Average annual social cost estimation per one foreigner in the UAE

No.	Cost Items	Annual Cost
1	Internal Security Spending	4,382
2	Roads and infrastructure	209
3	Subsidy - Electricity	6,466
4	Subsidy - Fuel	1,204
5	Education	378
6	Health	932
7	Remittances	495
8	(-) Fees per person	(-) 2,507
	Overall Cost	11,559

Our estimates are much larger than those listed in a recent, unpublished work by the Emirates Competitiveness Council (ECC). The ECC estimates the total cost to government per expat to be around 516 AED annually (179 AED for public works, 159 AED for electricity and water, 130 AED for internal security, 33 AED for health and 15 AED for education). Moreover, the ECC estimates the current permit fee paid by employer per expat to be around 84 AED, which puts the net cost of an expat to the UAE government to be around 432 AED annually.

The differences between our estimates and the ECC estimates are very large. However, the ECC work depends on calculations on the micro levels (personal consumption of government goods) and involves large number of hypothetical

assumption, while most of our estimates depend on actual costs paid by the government on the macro levels.

4. The Overall Cost of Labor:

Combining all kinds of costs, the annual cost for a foreign worker in the UAE is around 55,234 AED. 5% of this cost is attributed to recruitment and administrative activities, 74% to wages and salaries and other in-kind benefits, and 21% is the monetary value of the indirect cost to society.

For unskilled workers, the overall annual cost is around 32,780 AED per worker. This is about 23% of the overall annual cost of a skilled worker which is around 144,265 AED. Society's cost is around 35% of the total cost of an unskilled worker compared to around 8% of the total cost of a skilled worker. However, wages and benefits of a skilled worker make about 90% of its total cost compared to around 58% only for an unskilled worker.

Table (4): Estimated annual average cost of a foreign worker in the UAE (in AED)

		%		%		%
Administrative and Recruitment Costs	2,674	5%	2,296	7%	3,404	2%
Total Wages and Benefits	41,001	74%	18,925	58%	129,302	90%
Social Cost	11,559	21%	11,559	35%	11,559	8%
Total	55,234	100%	32,780	100%	144,265	100%

Over the past years, many employers and other analysts of labor market have been arguing that the fees imposed by the government on importing foreign workers are high, especially those fees related to the ministry of labor. Our analysis shows that apart from HR and recruitment costs, labor related fees that are paid to all government departments make only around 4% of overall cost of labor in general, and around 1% for skilled workers and around 6% for unskilled workers (see figures 3-5).

The fees collected by the Ministry of Labor, although larger than the costs related to residency, make around 3% of overall annual labor cost on average, and around 1% of the annual cost of skilled workers and 5% of the cost of unskilled workers. These percentages are very small compared to other types of cost including HR costs, wages and salaries, and social cost. Therefore, it is not expected that a moderate alteration of the fees imposed by the ministry of labor will have a strong impact on the cost of labor; and in return, on the demand for foreign workers. However, the impact on the cost of labor, if any, will be stronger on the unskilled workers side rather than on the demand for skilled workers. The same can be said on the fees imposed by the Naturalization & Residency Directorates.

Figure (3): Components of the cost of labor (all workers, %)

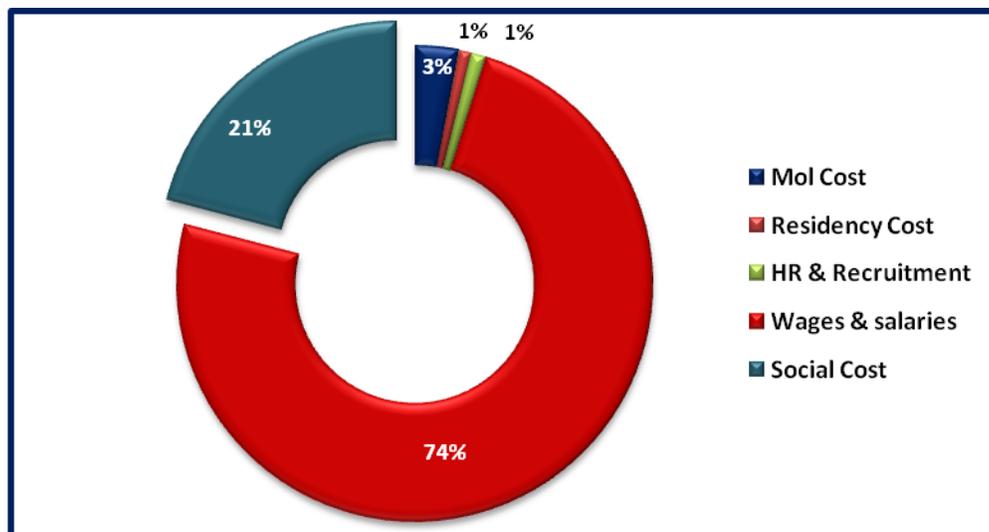


Figure (4): Components of the cost of labor (skilled workers, %)

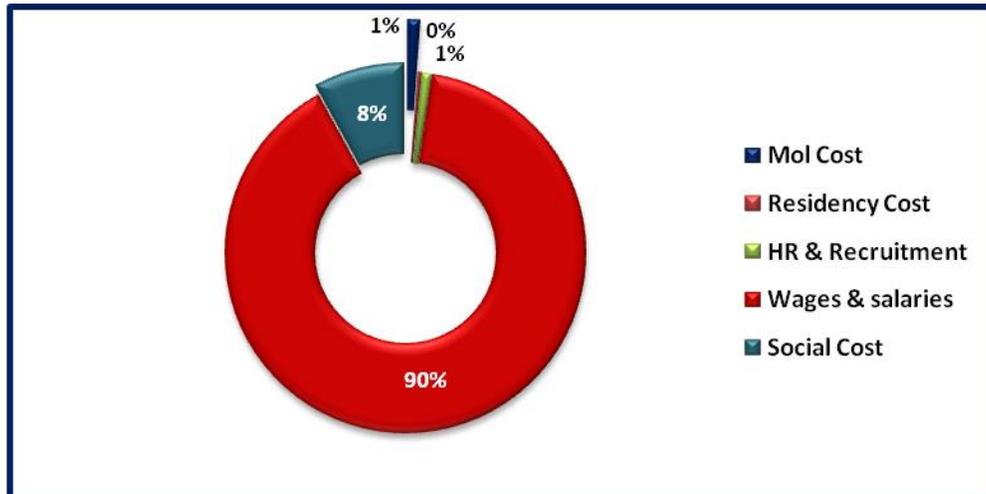
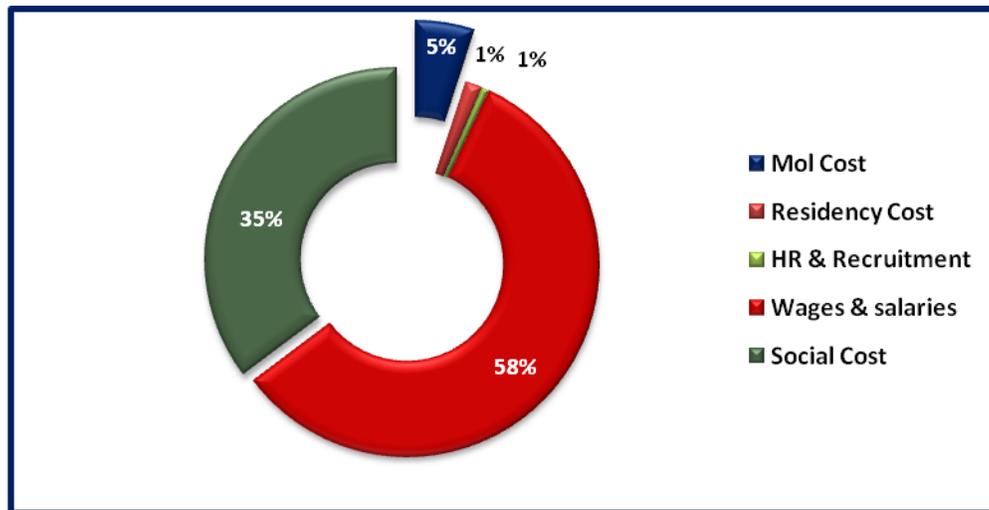


Figure (5): Components of the cost of labor (unskilled workers, %)



As expected, annual human resources and recruitment costs are also relatively low in the overall cost of labor, around 1% across skill levels, as the job market in the UAE is very attractive, which reduces the cost of hiring. The existence of large number of recruitment agencies, especially for unskilled workers, may also have an impact on the low cost of hiring for private companies.

Salaries make most of the cost of labor which is normal as they represent the price of the labor service in the production process. However, as part of the total cost, the price of this service is relatively high for skilled workers (90%) compared to unskilled workers (58%). This might point out to an exaggeration in the salaries given to skilled workers relative to unskilled workers due to their scarcity. Moreover, this gap might be attributed to the high competition over talents in contrast to the wider availability of large supply of unskilled and cheap workers especially from Asian countries.

The social cost, which makes around 21% of overall annual cost of labor in general, and 8% of the cost of skilled workers, and 35% of the total cost of unskilled workers, is a major component of the total cost, especially for unskilled workers. However, we may argue here that the social cost is under-estimated since we could include only items that can be valued in money terms. Other items such as the impact on culture and national identity, and on the causation of unemployment among UAE nationals, as a result of competition from relatively cheaper labor, are extremely hard to measure in monetary values, but as important as other included items.

Moreover, we should stress the fact that the social cost is not expected to be the same across all skill levels. Highly educated persons are expected to have some positive impact and spillover affect though the transfer of their knowledge and experience to other workers, including UAE nationals. Also, educated people are expected to impose fewer threats to security and to the environment compared to relatively less educated people. Furthermore, contrary to uneducated people, most highly educated people come to the UAE in families and they are more involved in economic, cultural and social life, and they positively impact economic growth through their higher spending in the country compared to uneducated and unskilled workers. Therefore, the calculations for the social cost may be relatively over-estimated for skilled workers compared to unskilled workers.

Regardless of the estimation, the social cost of a worker represents an indirect government and social transfer to companies. Those private companies enjoy higher economic rents by employing foreign workers and they do not pay taxes to cover the cost incurred by the government and society as a result of the existence of those workers within the borders of the country. This indirect transfer implicitly benefits companies that employ more of unskilled workers as the share of total cost for them (35%) is higher than the share in total cost for skilled workers (8%). Therefore, because of the absence of a system that redirects all or part of the social cost of foreign workers to companies that employ them, the implicit indirect subsidy favors unskilled workers relative to skilled workers.

Relatively speaking, the social cost of foreign workers should increase as the educational level of the worker decreases, although our calculations equate the social cost across skill levels. Therefore, a policy that impacts the cost of hiring unskilled workers, such as higher fees, may have a positive effect on labor cost incurred by society. However, the economic impacts of such policies might be different and will be discussed in the following section.

Finally, it is worth to estimate the overall social cost of foreign labor in the country. Depending on an estimated workforce of around 4.3 million, and a per worker social cost of 11,559 AED, the overall social cost is around 50 billion AED annually, most of which can be thought of as indirect transfers to private sector companies as discussed above.

The values of the total cost (and their components) and the differences in these costs between skilled and unskilled workers by themselves cannot point to the value added to society by employing more of one type of workers relative to the other. To be able to understand the value added from each type of workers, we need to introduce

productivity of each type of workers to our analysis, which is discussed in the following section.

Labor Productivity

There is no easy way to estimate labor productivity in any given market. However, on the macroeconomic level, labor productivity can be approximated by the average real wage or by the share of total production per worker. Here, we will be comparing productivity of workers to their wages. Therefore, we will depend on the value added and the number of workers in each sector to approximate the productivity of labor in the UAE economy.

1. The evolution of labor productivity in the UAE economy:

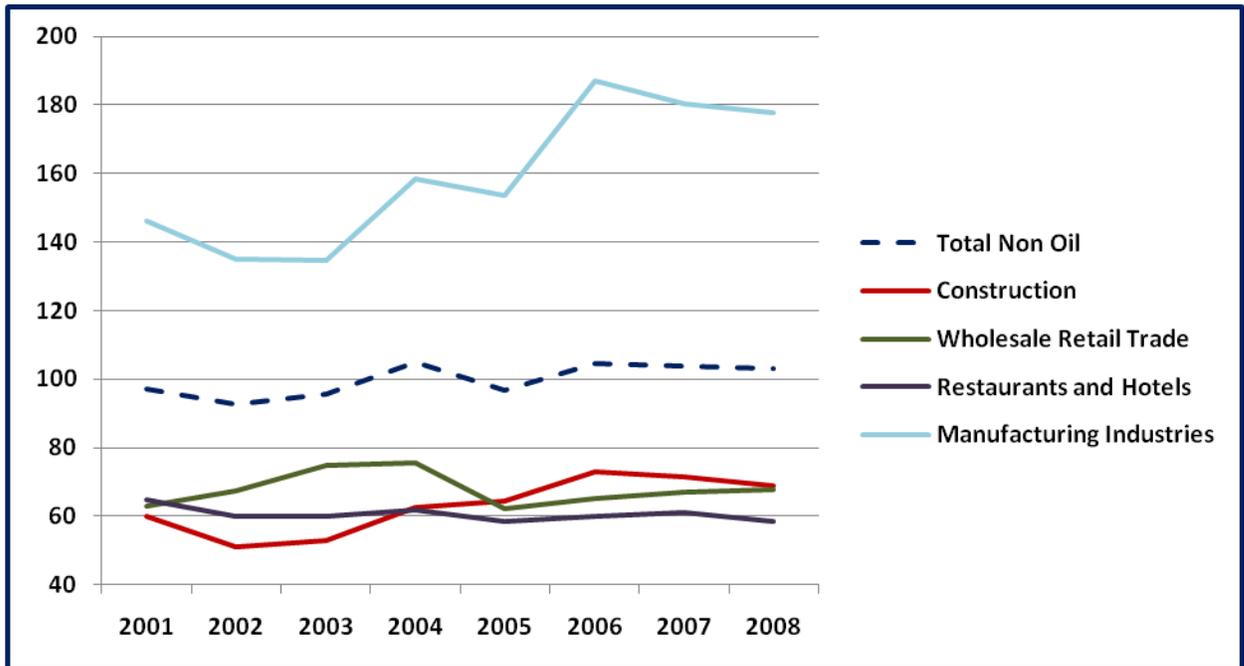
Figure (6) shows the evolution of total labor productivity and productivity in selected sectors in the UAE for the period 2001 to 2008, and tables (12) and (13) in Appendix (2) show productivity levels for all sectors²³. It is evident that labor productivity in general started to deteriorate since 2006 in many sectors, and that there is an evidence of a decrease in total non-oil labor productivity in the country. In those years, non oil GDP was growing at around 5.4 to 6.3% in real terms, and workers in non oil sectors grew at faster rates between 6.4 to 6.9%, which resulted in a decline in overall nonoil productivity at a percentage between 0.5% to 1%.

As expected, in sectors that are heavily labor-intensive and dominated by unskilled workers such as construction, trade, and restaurant & hotels, labor productivity

²³ We are using here the estimates of workers from the Ministry of Economy (the National Bureau of Statistics) which is around 3.3 million workers in 2008. The estimates for the number of workers in the Ministry of Labor is more than 4 million in the private sector alone, not taking into account the government and semi-government sectors, the free zone and house maids. Therefore, the above analysis focuses on evolution of productivity rather than discussing levels in money terms compared to wages for example, which will follow later after adjusting for the number of workers.

is significantly lower than that in other sectors which are less dependent on labor and dominated by relatively more skilled workers such as manufacturing and financial sectors. Moreover, differences in productivity levels between the two types of sectors started to widen farther since 2003, which might be attributed, at least in part, to the increase of the quality of workers in the sectors that are not heavily labor-intensive. Furthermore, it is easily observed that before 2004, productivity levels were at their lowest values in the construction sector, but after 2004, they bypassed both the hotels and restaurants and the wholesale retail trade sectors in terms of productivity.

Figure (6): Productivity of labor in the UAE for selected sectors 2001 - 2008, in 2000 Prices (thousand AED)



However, a proper analysis of productivity should take into account the fact that according to the Ministry of Labor’s database, the number of workers reported by the Ministry of Economy (the National Bureau of Statistics) might be underestimated, at least

in some sectors. Therefore, we calculate productivity levels for 2006- 2008²⁴ depending on modified numbers that take into account the records in the Ministry of Labor's database for selected sectors²⁵.

Table (5) and figure (7) show productivity of selected sectors using the modified labor data which take into account the reported numbers of workers by the Ministry of Labor. Again, productivity levels show a clear decline over those three years except for the government sector which is almost flat. Productivity in the overall non-oil economy shows a sharp decrease by around 12% between 2006 and 2007 and 17% between 2007 and 2008. The largest decreases can be observed in construction and real estate sectors.

In terms of ranking, the construction sector is by far has the lowest levels of productivity, almost one-half the levels that are observed in the wholesale trade sector, which is also relatively has very low labor productivity. Other sectors that can be considered to be low in labor productivity are restaurants and hotels, and real estate and business services sectors. Sectors that can be considered as enjoying relatively high levels of labor productivity are financial corporations, manufacturing, electricity, gas and water and transportations sectors.

²⁴ 2008 is the last year for which we can obtain final numbers for the value added levels of economic sectors in the UAE.

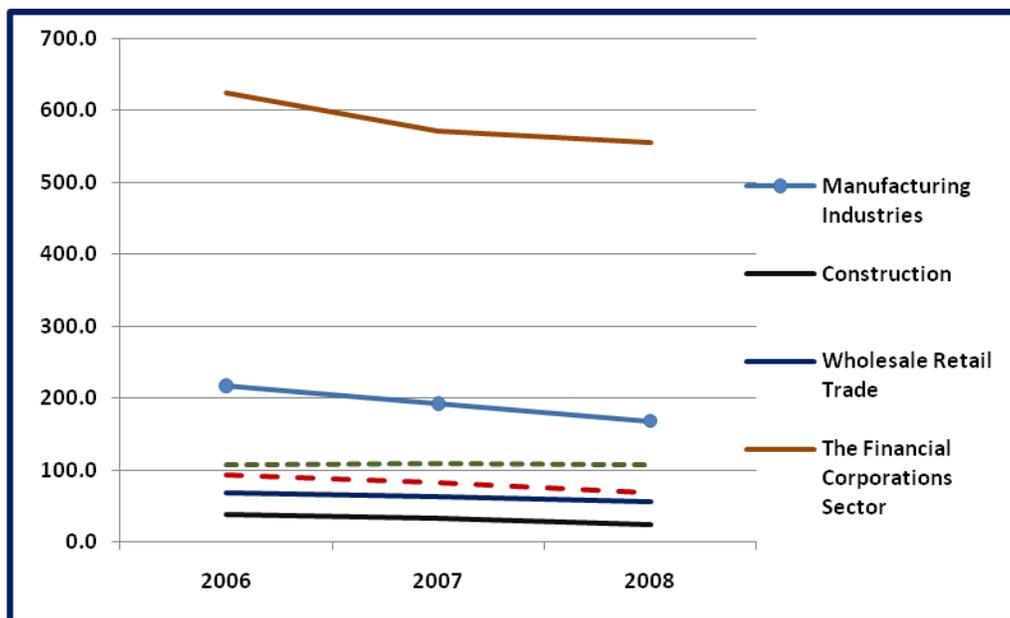
²⁵ The overall number of workers in these sectors after modification is around 4.3 million.

Table (5): Productivity of labor in the UAE for selected sectors 2006 - 2008, in 2000 Prices, using Ministry of Labor database (thousand AED)

Sectors	2006	2007	% Change	2008	% Change
Manufacturing Industries	217.4	193.0	-11.2%	168.5	-12.7%
Electricity, Gas and Water ⁺	200.1	198.0	-1.0%	194.2	-1.9%
Construction	39.4	33.2	-15.9%	25.3	-23.6%
Wholesale Retail Trade	69.4	63.4	-8.7%	56.0	-11.7%
Restaurants and Hotels	79.2	75.6	-4.5%	65.8	-13.0%
Transports, Storage and Communication	174.8	161.6	-7.6%	132.6	-17.9%
Real Estate and Business Services	49.2	37.5	-23.7%	28.7	-23.5%
The Financial Corporations Sector ⁺	624.5	571.4	-8.5%	555.3	-2.8%
Government Services Sector ⁺	108.5	109.9	1.3%	107.3	-2.3%
Overall non oil	94.5	83.0	-12.1%	68.1	-17.9%

⁺ using the Ministry of Economy data.

Figure (7): Productivity of labor in the UAE for selected sectors 2006 - 2008, in 2000 Prices, using Ministry of Labor database (thousand AED)



2. Labor productivity and labor cost:

In theory, productivity and wages are very close in value as a result of the competition over workers. Workers with higher productivity move to companies that offer higher wages, and companies employ them as long as their productivity levels are higher than their wages. However, in the UAE, like in other GCC markets, companies have access to almost unlimited supply of foreign workers, especially for the low-skilled. Therefore, it is expected that productivity is much higher than wages (and labor costs) and that, changes in wages do not follow changes in productivity. Nevertheless, wages may increase faster than productivity merely because they started at very low levels or when they are no longer suitable to attract foreign workers into the country.

To compare productivity levels to labor cost, we need to deflate some parts of the labor cost to bring them to their values in 2008 prices^{26,27}. Moreover, to be able to link productivity to skills, we classify sectors into those which are dominated by skilled workers (financial corporations, manufacturing, electricity, gas and water and transportations sectors) and those which are dominated by unskilled workers (construction, wholesale trade, restaurants and hotels, and real estate sectors)²⁸.

Table (6) summarizes labor cost and productivity figures by skill levels. Using fixed prices of 2008, annual productivity of a foreign worker in the private sector is around 212,000 AED on average, while the cost of the worker is around 43,000 AED to

²⁶ Some values in the labor cost do not change over the years such as administrative costs.

²⁷ Here we assume that the base year is 2008. Therefore, nominal productivity levels in 2008 are the same as real levels for that year. However, we have wages that represent 2010, so that we deflate them to their 2008 levels using the CPI values that are published by the National Bureau of Statistics. The CPI for March 2010 is 114.13 (2007=100), the 2008 CPI is 112.25; therefore, the index for March 2010 in 2008 prices is 101.68.

²⁸ The government sector is left out as our analysis of cost is limited to the private sector. Also, the percentage of workers in skilled-workers dominated sectors came out to be 20% compared to 80% in unskilled-workers dominated sectors, similar to the ratios found in 2005 census and the current WPS of the MoL.

private sector companies, and more than 54,500 AED when including the social cost. Compared to costs of labor, productivity levels are four to five folds and they point out to very large economic rents that are enjoyed by private companies and by the UAE economy from using foreign workers. These rents are close to 170,000 AED annually per worker on average, and more than 11,500 AED of the average economic rent is coming from the social cost that is not paid, but enjoyed by those private companies.

Economic rent for a skilled worker is around 360,000 AED annually on average and it is much larger than that for an unskilled worker which is estimated around 121,000 AED. However, productivity levels for unskilled workers are close to seven folds compared to the cost of unskilled workers, while they are less than four folds for skilled workers.

Table (6): Estimated annual average cost of a foreign worker in the UAE and labor cost (in AED and 2008 prices)

Overall	212,162	42,998	54,557
Skilled	490,792	130,570	142,129
Unskilled	141,831	20,908	32,467

It is important to note here that overall non-oil productivity level in the UAE (212,162 AED in 2008) is competitive to international standards. In the Euro zone, total annual labor productivity in 2008 was around 74,261 USD (or 272,536 AED). In other countries, total labor productivity in 2008 ranged from around 129,000 and 137,000 AED

in Mexico and Chile (labor-intensive countries) to around 392,000 and 435,000 AED in Norway and Luxembourg (capital-intensive countries)²⁹.

3. Labor productivity and competitiveness:

Goods and services produced with relatively cheaper inputs imply lower final product prices and therefore are more competitive in world markets. However, if productivity in a country is very low and if the company is dominated by cheap labor, then this cheap labor does not increase the competitiveness power compared to another country with cheap labor and relatively higher productivity rates. Therefore, we should argue that competitiveness depends on productivity-adjusted labor costs rather than on pure labor costs. An increase in productivity-adjusted labor costs implies a decline in the competitiveness power in the country.

One way to measure the productivity-adjusted labor cost is to calculate the worker's labor cost of producing one unit of the final product (unit labor cost). This can be done; alternatively, by dividing the average labor cost by the average productivity level (both measured in dirham) and, productivity-adjusted labor cost can be thought of as the labor cost of producing one dirham worth of the final product.

Table (7) shows the productivity-adjusted labor costs levels for skilled versus unskilled labor. In general, one dirham of output costs around 0.20 dirham of labor cost excluding the social cost, and 0.26 dirham of labor cost including the social cost. For skilled workers, one dirham worth of output costs around 0.27 dirham worth of labor

²⁹ These figures for productivity are calculated as the share of output (GDP) per worker from the statistical database of OECD countries: OECD Stats Extracts.

input (or 0.29 AED including the social cost). Unskilled workers can produce at a cheaper price: one dirham worth of output costs only 0.15 dirham of cheap labor cost (or 0.23 AED including the social cost). Therefore, using unskilled workers the UAE economy may produce the same amount of output produced by skilled workers but at one-half the labor cost of skilled workers. In other words, competitiveness of the UAE economy might be linked strongly to the use of cheap and unskilled workers.

Table (7): Productivity-Adjusted Labor Costs

Overall	0.20	0.26
Skilled	0.27	0.29
Unskilled	0.15	0.23

However, productivity that is dependent on cheap and unskilled workers is difficult to be sustainable. It is expected that the effect of an increase in productivity-adjusted labor costs in unskilled labor-dominated economies is much larger than those in skilled labor-dominated economies. There are at least two reasons for that: first, in economies that rely heavily on cheap unskilled labor, the number of workers is very large which makes labor-intensive industries that dominate the economy more sensitive to increases in labor costs, which in turns affects their productivity and competitiveness, and thus, the overall economy's productivity and competitiveness. Second, unskilled workers usually have low educational levels and therefore, when enjoying higher wages for any reason, they are unlikely be able to acquire more skills to increase their productivity. In other words, the productivity-wages link at the lowest skills level is very weak, and any impact on wages, such as a minimum wage law or demands for increasing wages or improving work conditions that may come internally from the UAE or externally from the labor exporting country or the international community, will have very little effect in terms of increasing productivity levels.

On the other hand, a move from an unskilled-labor intensive to a system that relies less on cheap labor and more on skilled labor is very costly, taking into consideration the huge differences in average wages realized for the two groups and the difference in productivity-adjusted labor costs noted above. The non-oil UAE GDP in 2008 (924 billion AED) was produced by a mix of skilled workers (20%) and unskilled workers (80%). Using the productivity-adjusted labor cost figures above, the cost of producing this GDP level was around 161 billion AED³⁰. If the non-oil GDP was produced only by using unskilled labor, it would have cost around 139 billion AED. If it was produced only by using skilled labor it would have cost around 250 billion AED. Therefore, hypothetically, if the UAE moves to a labor market with only unskilled workers, it saves around 22 billion AED, and if it moves to a system with only skilled workers it loses 89 billion AED. Therefore, it is very costly to move from unskilled to skilled labor under the current system of production in the UAE.

We can use the above analysis to calculate the cost of a more realistic policy that encourages a better mix of labor in favor of skilled labor, such as 40% skilled vs. 60% unskilled. Producing the level of non-oil GDP for 2008 under this mix will cost around 183 billion AED. Therefore, the cost of such policy to the UAE economy is around 22 billion AED. Under this cost, some inefficient firms will not be able to cope with system and may be forced out of the market. However, the system will be able to be more competitive and sustainable, and will create better jobs that may suit more educated workers, including UAE nationals.

³⁰ Here we exclude the social cost of our analysis, for simplicity.

Policy Implications and Recommendations:

Competitiveness of the UAE is linked to the heavy reliance on cheap and unskilled workers. The difference between productivity levels of workers and their costs is very large which results in high economic rents. However, this model is not expected to be sustainable. The economy is expected to be very sensitive to the effects of an increase in the productivity-adjusted labor. If the labor cost of cheap labor increases due to international factors such as a higher economic growth in labor exporting countries that result in higher per capita income, then many companies who operate on the margin in terms of labor-productivity linkages will not be able to cope with the increase in labor costs. Moreover, it is not expected that productivity levels will increase as the cost of labor (wages) increases since those workers usually have low educational attainments and mostly unable to acquire more skills to increase their productivity. Therefore,

- 1. Economic plans in the UAE must take into consideration the fact that the economy under the current system might be highly vulnerable to external or unexpected shocks in the labor market that may alter wages of unskilled workers.**
- 2. The UAE economy needs to reorganize the labor market to meet future economic growth requirements in a way to enhance and support competitiveness power, to secure sustainable opportunities for nationals and to improve working conditions for the foreign labor force. New jobs have to be created in the more promising sectors that use advanced technologies or based on knowledge economy to immune the markets, including the labor market, from vulnerability to regional and international economic shocks.**

The social cost of a worker represents an indirect government and social transfer to private companies in the UAE. This indirect transfer implicitly favors companies that rely on cheap labor relative to those who rely more on skilled, more expensive workers.

Therefore, this heavy reliance on cheap labor in the country requires large numbers of them to produce the current levels of GDP.

- 3. The threat to national identity which is amplified by the faster growth of foreigners relative to UAE nationals requires difficult and hard measures to bring back these numbers into an acceptable range.**

However, any policy that is directed towards decreasing the number of foreigners in the labor market will have negative effects economic growth in the short run. However, in the long run, those policies may have larger positive effects on economic growth and development compared to the current system. Moreover, since the expected social cost from a highly educated foreigner is less than that for a less educated foreigner, then

- 4. A policy which impacts the cost of hiring unskilled workers, such as higher fees, may have a positive effect on labor cost incurred by society.**

Private sector companies are enjoying high economic rents coming from the low wages offered to cheap workers compared to their productivity levels and, indirectly from the social cost of foreign workers which is paid by the government.

- 5. The UAE economy should move away from its welfare orientation and should engage private companies in paying part of the social cost.**
- 6. The policy can be engineered in a way to target an appropriate skills mix in the labor market that leads into a robust economic growth which is increasingly based on knowledge economic and modern technologies.**

Such a policy may increase the cost paid by private companies (to cover social cost) for using cheap labor and reduce it for skilled workers, and should be executed in a way move gradually towards less dependence on low-skilled labor force.

Minimum wages are usually set by government to secure a minimum living standard for workers. Minimum wages laws increase the cost of labor, and if productivity levels are at the lowest skilled pool of workers, then it becomes unprofitable to employ very low skilled workers. This in turn decreases the dependence on labor intensive techniques and causes many companies that are working on the margin and cannot move to more sophisticated production technologies to leave the market. All of these effects imply a decrease in the number of workers employed in the country³¹. In the UAE, minimum wage laws, even if they do not exceed the levels of productivity, will negatively alter the competitiveness power of the country in the short run as they decrease profit margins of private companies and may result in higher prices of final products. Moreover, although a minimum wage policy is not an ideal option in wage-setting mechanisms,

- 7. A carefully-set minimum wage specific to labor-intensive industries may be needed to protect foreign workers from exploitation of some employers and to discourage the employment of low-skilled workers.**
- 8. In the long run, minimum-wage policies increase productivity and competitiveness of the economy by moving into more sophisticated production technologies and higher quality products.**

Most unemployment among UAE nationals is created by choice, as salaries and working conditions do not meet the expectations of the UAE youth. Those expectations are not backed up by the required skills and other requirements of the labor market. And taking into account the “unlimited” supply of relatively cheap foreign labor, those high expectations of wages by UAE nationals are amplified the by provision of high wages and generous benefits to nationals in the public sector. The high reservation wages induced UAE nationals to queue for public sector jobs. Moreover, the high economic growth rates that were enjoyed in the country in recent years increased public sector salaries dramatically, especially for UAE nationals, which may have led to an

³¹ Other laws that are related to health insurance, housing, and poor working conditions may have similar effects to minimum wages on the cost of labor.

aggravation of the problem of matching private sector jobs to unemployed UAE national youth.

9. Thus, satisfying the future needs of the growing number of UAE nationals requires, on the supply side:

- f. Reforming the public education system to prepare UAE nationals to take medium and high skill jobs in the labor market supported by,**
- g. A proper management of the flow of low skilled foreign workers into the country. One way to do this is to levy higher fees on the least skilled work categories to discourage the current over reliance on low-skilled, labor-intensive production of goods and services.**

10. And on the demand side,

- h. Private companies should be encouraged to increase the use of technology and knowledge-based techniques to create jobs that are suitable to UAE nationals and can compete with government jobs.**
- i. Most private companies enjoy large economic rents by employing foreign workers, and they should be encouraged, at least in the short run, to give up some of this economic rent to employ and train UAE nationals.**
- j. Moreover, the UAE may consider wages policies that bring public sector wages for nationals and private sector wages into an acceptable range.**

Finally, the fees collected by the Ministry of Labor and other government departments, are very small compared to other types of labor costs. Therefore, it is not expected that a moderate alteration of the fees imposed by the ministry of labor will have a strong impact on the cost of labor; and in return, on the demand for foreign workers. However, the impact on the cost of labor, if any, will be stronger on the unskilled workers side rather than on the demand for skilled workers.

Appendix (1) - Classification of companies in the Ministry of Labor's database

Companies are classified into the following categories according to the percentage of workers from one nationality in that company:

- (A) If the number of workers from one nationality is 29% or less.
- (B) If the number of workers of the same nationality is between 30% and 69%
- (C) If the number of workers of the same nationality is 70% or above.

Companies can improve their ranking by hiring UAE nationals or by improving the mix of nationalities of the employed foreign workers.

Table (8): Classification of companies in the MoL's database 2010: All Firms

Category	No. of Companies	No. of Companies more than 3	No. of Employees	No. of Employees more than 3
A	170,592	29,870	980,400	708,966
B	47,544	47,520	2,455,707	2,455,659
C	71,595	71,276	1,284,651	1,284,015
Total All	289,731	148,666	4,720,758	4,448,640

Table (9): Classification of companies in the MoL's database 2010: Construction Sector

Category	No. of Companies	No. of Companies more than 3	No. of Employees	No. of Employees more than 3
A	17,522	5,984	242,065	217,397
B	14,070	14,062	1,309,736	1,309,718
C	17,724	17,678	599,671	599,578
Total Construction	49,316	37,724	2,151,472	2,126,693

Table (10): Classification of companies in the MoL's database 2010: Trade Sector

Category	No. of Companies	No. of Companies more than 3	No. of Employees	No. of Employees more than 3
A	73,438	10,574	292,381	162,116
B	16,260	16,253	387,796	387,783
C	26,054	25,909	258,605	258,326
Total Trade	73,438	10,574	292,381	162,116

Table (11): Classification of companies in the MoL's database 2010: Other Sectors

Category	No. of Companies	No. of Companies more than 3	No. of Employees	No. of Employees more than 3
A	79,632	13,312	445,954	329,453
B	17,214	17,205	758,175	758,158
C	27,817	27,689	426,375	426,111
Total Others	124,663	58,206	1,630,504	1,513,722

Appendix (2) Labor Productivity by Sectors in the UAE

Table (12): Productivity of labor in the UAE by economic sector (2001 - 2008), in 2000 Prices, (thousand AED)

Sectors	2001	2002	2003	2004	2005	2006	2007	2008
The Non Financial Corporations Sector	156	141	146	160	152	168	169	169
Agriculture, Live stock and Fishing	63	60	59	65	56	53	53	53
Mining and Quarrying	3180	2807	3073	3295	3337	3752	3809	3957
Crude Oil and Natural Gas	3725	3285	3622	3927	3986	4498	4531	4719
Quarrying	167	163	156	169	171	201	208	210
Manufacturing Industries	146	135	135	159	154	187	180	178
Electricity, Gas and Water	165	195	216	240	200	200	198	194
Construction	60	51	53	63	64	73	71	69
Wholesale Retail Trade and Repairing Services	63	67	75	76	62	65	67	68
Restaurants and Hotels	65	60	60	62	58	60	61	59
Transports, Storage and Communication	150	156	154	167	146	157	165	160
Real Estate and Business Services	359	354	363	384	345	355	340	355
Social and Personal Services	46	60	63	63	56	60	58	56
The Financial Corporations Sector	699	681	746	805	632	625	571	555
Government Services Sector	132	117	121	121	109	108	110	107
Domestic Services of Households	10	10	10	11	11	11	10	10
TOTAL	143	130	136	149	141	153	153	154
Total Non Oil	97	93	96	105	97	105	104	103

Calculations are based on the Ministry of Economy (the National Bureau of Statistics) data which put the number of workers in the UAE at 3.3 million workers in 2008.

Table (13): Percentage Change in Productivity of labor in the UAE by economic sector (2002 - 2008), in 2000 Prices (%)

Sectors	2002	2003	2004	2005	2006	2007	2008
The Non Financial Corporations Sector	-10.0	3.3	10.1	-4.9	10.3	0.4	0.5
Agriculture, Live stock and Fishing	-4.6	-1.7	10.6	-14.4	-3.9	-0.5	0.2
Mining and Quarrying	-11.7	9.5	7.2	1.3	12.4	1.5	3.9
Crude Oil and Natural Gas	-11.8	10.3	8.4	1.5	12.9	0.7	4.2
Quarrying	-2.3	-4.3	8.2	1.1	17.8	3.3	1.0
Manufacturing Industries	-7.6	-0.2	17.7	-3.1	21.7	-3.6	-1.4
Electricity, Gas and Water	17.7	10.7	11.4	-17.0	0.2	-1.0	-1.9
Construction	-14.7	3.8	18.0	2.9	13.7	-2.5	-3.2
Wholesale Retail Trade and Repairing Services	7.0	10.7	1.1	-17.8	5.0	2.6	1.0
Restaurants and Hotels	-7.4	0.3	2.6	-5.2	2.8	1.9	-4.2
Transports, Storage and Communication	4.1	-1.2	8.5	-12.9	7.6	5.1	-3.1
Real Estate and Business Services	-1.3	2.5	5.8	-10.1	2.7	-4.1	4.3
Social and Personal Services	32.1	3.7	0.5	-10.9	7.3	-4.1	-2.8
The Financial Corporations Sector	-2.6	9.6	7.9	-21.5	-1.1	-8.5	-2.8
Government Services Sector	-11.1	2.9	0.3	-9.4	-0.9	1.3	-2.3
Domestic Services of Households	0.0	-0.1	8.8	-6.6	0.2	-3.3	-0.5
TOTAL	-9.2	4.2	9.7	-5.5	8.8	-0.2	0.5
Total Non Oil	-4.8	3.5	9.5	-7.9	8.3	-0.9	-0.5

Calculations are based on the Ministry of Economy (the National Bureau of Statistics) data.