DECENT WORK ATTAINMENT AND LABOUR PRODUCTIVITY: A SAMPLE SURVEY OF TEXTILE FIRMS IN EGYPT

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Abstract

This study explores the effect of decent work attainment on labour productivity in Egypt, using a sample survey of 50 textile and apparel firms employing 50 or more persons. These firms belong to an industry that is a primary contributor to employment, exports, output and value added in the manufacturing sector at large. Closed questions, developed from a host of macro decent work indicators, are addressed to the employer and an employee in each of the sample firms. Questionnaire responses are descriptively analyzed and subsequently used in a cross section econometric estimation of labour productivity in relation to decent work pillars (rights at work and labour standards; employment and income opportunities, social protection and social dialogue), as well as their respective sub-pillars. Findings generally indicate that enhanced labour productivity is related to increased job satisfaction. Such satisfaction embraces the enjoyment of basic rights, assurance of non-discrimination, abolition of child labour, provision of a work environment conducive to health and safety, provision of benefits and incentives, provision of adequate pay and pension scheme, and the availability of an appropriate venue for voicing employee concerns. Firms, thus, have the potential to increase labour productivity through their awareness and identification of where they truly fall short of attaining decent work.

ملخص

تتناول هذه الدراسة بالبحث والتحليل تأثير العمل اللائق على إنتاجية العمالة في مصر، وذلك باستخدام مسح يشمل عينة مكونة من ٥٠ شركة (فئة ٥٠ عاملا فأكثر) تنتمي لقطاع المنسوجات والملابس جاهزة. ويرجع اختيار هذا القطاع إلى أهميته كمساهم رئيسي في التشغيل والصادرات والناتج، بل والقيمة المضافة لقطاع الصناعة التحويلية ككل. وفي إطار المسح تم توجيه أسئلة مغلقة، مستقاة من مجموعة من المؤشرات الكلية للعمل اللائق، إلى كل من صاحب العمل وعامل واحد بكل شركة من شركات العينة. وبعدها، تم إجراء تحليل وصفي لردود المجيبين على الاستبيان واستخدامها لاحقا في تقدير قياسي مقطعي يسعي لتحليل العلاقة بين إنتاجية العمالة وركائز العمل اللائق (حقوق العمالة ومعايير العمل، وفرص التشغيل والدخل، والحماية الاجتماعية والحوار الاجتماعي)، فضلا عن الركائز الفرعية الخاصة بكل منها.
وتشير النتائج بوجه عام إلى أن تعزيز إنتاجية العمالة يرتبط بزيادة مستوى الرضا الوظيفي، والذي يرتبط بدوره بمدى تمتع العمالة بالحقوق الأساسية وعدم التمييز، والقضاء على عمالة الأطفال، وتوفير بيئة عمل تراعي اعتبارات الصحة والسلامة، بالإضافة إلى الحصول على مزايا وحوافز ووجود أجر ونظام معاشات وافيين، فضلا عن إتاحة وسيلة جيدة للتعبير عما يهم العاملين ويشغلهم. وفي ضوء ما سبق، يمكن للشركات تحديد ومعالجة أوجه القصور في توفير شروط العمل اللائق بها ومن ثم زيادة إنتاجية العمالة لديها.

JEL Classifications: J50, L67, O15

Keywords: decent work, labour productivity, textile and apparel industry, sample survey, globalization, exports.

INTRODUCTION

In 1995, the World Summit on Social Development defined *core labour standards* as the "basic workers' rights" which relate to: the prohibition of forced and child labour; the freedom of association; the right to organize and bargain collectively; equal remuneration for men and women for work of equal value; the elimination of discrimination in employment and wages (Fields 2003, 241). Under the International Labour Organization (ILO)'s 1998 "Declaration on Fundamental Principles and Rights at Work," member states were committed to respect and promote the principles which come under the above standards.[1] A year later, the Director-General of the ILO coined the term 'decent work' (DW) to further encompass decent employment and income, social protection and social dialogue. Thus, DW rests on four pillars.[2] Literature has emphasized that the issue of 'worker security' lies at the heart of the respective pillars and bears directly on the enhancement of labour productivity. Hence, it stands to strengthen the prospects of firms for achieving economic and social upgrading.[3]

Using a sample survey of textile and apparel (T&A) firms in Egypt, the present study aims to assess the extent to which they are attaining DW, and to evaluate how such attainment affects labour productivity. It thus aims to contribute to the literature where such assessments are evidently lacking, particularly with reference to an industry that is focal to Egypt's manufacturing sector (in terms of employment intensity, value added and exports).

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[1] Whether or not they had ratified the relevant conventions (often referred as the *ILO labour conventions*). The principles are spelled out in the following eight conventions: 87 and 98 on the freedom of association and collective bargaining; 29 and 105 on the elimination of forced and compulsory labour; 138 and 182 on the abolition of child labour; 100 and 111 on the elimination of discrimination with respect to employment and occupation. All the above conventions were ratified by Egypt in the following dates (between brackets): 87 (1957); 98 (1954); 29 (1955); 105 (1958); 138 (1999); 182 (2002); 100 (1960); 111 (1960) (*Source*: http://webfusion.ilo.org/public/db/standards/normes/appl/appl-byCtry.cfm?lang=en&CTYCHOICE=0690)

[2] (1) *Fundamental principles and rights at work and international labour standards*: promotion and realization of standards and rights (highlighted above); (2) *employment and income opportunities*: creation of greater opportunities for men and women to secure decent employment and income; (3) *social protection*: the enhancement of the coverage and effectiveness of social protection for all; (4) *social dialogue and tripartism*: the strengthening of social dialogue in handling work-related issues.

[3] *Economic upgrading* relates to enhanced efficiency, and is mirrored in: "making better things" whereby the firm is able to move from producing low-value-added to more sophisticated ones entailing higher value added; "doing things better" through employment of technological innovations that aid flexibility of production and speed up the production process or reduce material waste. *Social upgrading* is defined as the process of improvement in the rights, capabilities and entitlements of workers as social actors by enhancing the conditions of their improvement (Nathan and Posthuma 2009, 559). The definition draws on the ILO definition of DW outlined above.

The paper is organized as follows: Section I briefly reviews the relevant literature; Section II highlights criteria for selection of firms from the T&A industry as a case for study, presents the survey methodology employed and *descriptively* analyses survey results; Section III spells out how survey data are employed in an *econometric* estimation of labour productivity in relation to DW, and subsequently discusses implications of estimation results (reported in Appendices 1 & 2); Section IV builds on the *descriptive* and *econometric* analyses to draw relevant policy implications for increased labour productivity and concludes.

I. LITERATURE REVIEW

DW literature can be broadly classified into: *scene-setting* literature highlighting conditions that prompted the adoption of core labour standards; literature dealing with DW concepts, indicators and measurements; DW from a globalization perspective; 'DW attainment-labour productivity' nexus. We address them in the respective order, and subsequently outline DW studies with relevance to Egypt's case.

Scene-setting Literature

Changes taking place at both the domestic and global levels may have motivated many countries to adopt core labour standards. Domestically, many governments headed for flexible labour markets, partly prompted to do so by the International Monetary Fund (IMF) and the World Bank (WB). Moreover, many such governments implemented structural adjustment programmes (accompanied by autonomous trade liberalization), which disrupted their domestic industries. Owing to an absence of developed safety nets or the adequate representation for the promotion of worker-management dialogue, coupled with the pressing need for employment creation (Busser 2006, 96), the adoption of core labour standards was a must. At the global level, changes to the scene varied from growing international interest in adopting a balanced approach to sustainable development, to the adoption of the Millennium Development Goals (MDGs), to the challenges posed by globalization to labour conditions— all against the backdrop of the ILO's conscious effort to advance DW. We briefly shed light on the above changes and their implications for labour.

As early as 1992, the Rio Declaration on Environment and Development[4] committed to protecting the environment and ensuring that sustainable development be anchored in both

[4] Which resulted from the 'United Nations Conference on Environment and Development' held in Rio de Janeiro June 1992.

social and economic development. These commitments were later underscored by the Johannesburg World Summit on Sustainable Development (2002) that stressed on the interdependence between social development, economic development and environmental protection, as well as their capacity for mutual reinforcement.[5] The decent work agenda (DWA) was endorsed by Heads of State in the 2005 World Summit.

In an effort to mainstream the DWA throughout the United Nations and the international trading system, the ILO targeted its advancement in individual country programmes.[6] ILO work also became part and parcel of the work directed towards the achievement of the MDGs, the first of which was the eradication of extreme poverty and hunger. Among its three targets, the latter includes the achievement of full and productive employment and DW for all. Regionally, to cite but one example, the European Commission issued its 2006 directive on "promoting DW for all." As such, DW was increasingly promoted by all bodies.

Measuring DW: Concepts and Indicators

There is a general consensus on the absence of a comprehensive indicator of DW, particularly of a DW index. This owes to the difficulty of assigning weights to the different pillars, or of identifying a formula that combines qualitative and quantitative dimensions together. As such, Ghai (2003) and Anker et al. (2003) have used a host of macro-level indicators to provide approximate measures of performance with respect to the four pillars of DW.[7] As such, literature still lacks micro-level indicators. This has prompted us to distill from the available macro level indicators a set of survey questions to be addressed at the firm level.

DW from a Globalization Perspective

Globalization brought about the engagement of many developing country firms in global value chains (GVCs) across various economic activities. This poses a series of challenges to all four pillars of DW in the respective countries. With reference to *pillar one*, such

[5] Moreover, the Summit incorporated the ILO "Declaration on Fundamental Principles and Rights at Work" in its plan of implementation.

[6] The advancement has been through expanding its work with the United Nations Development Programme, as well as working with the World Trade Organization, IMF and WB to generate an enabling framework for DW.

[7] To cite a few examples with reference to each of the pillars of DW: *pillar one (rights at work)* and *pillar four (social dialogue)*—economy-wide union density rate; *pillar two (employment and income opportunities)*—ratio of female employment to female working-age population and the labour force participation rate; *pillar three (social protection)*—the proportion of different categories of the labour force protected against different contingencies (old age hazards, disability, death, sickness, maternity).

engagement entails little national government control over the implementation of workers' rights, especially given the control that global buyers (GBs) exercise over these chains. Moreover, governments tend to relax the enforcement of labour legislations (more so in export processing zones) so as to attract foreign direct investment or to reduce costs facing GBs. In some cases trade union rights are also undermined.

Furthermore, under the impact of a constant change in trends, the push for shorter lead times, volatile ordering patterns and an inclination to cut costs, GBs tend to favour more flexible labour arrangements (relying on contract, or migrant, as opposed to regular labour) and to increase overtime for those engaged in their chains. Their drive for cost reduction is often associated with workers suffering lack of sanitation, poor ventilation, poor lighting or crammed workplaces—in short, "sweatshop conditions."[8] The above tendencies are thus believed to undermine employment opportunities and working conditions (*pillars two and three*).

However, the engagement of developing country firms in GVCs may not necessarily have negative implications for DW. In view of the fact that GBs are heavily subjected to pressure from civil society organizations at home regarding the labour conditions of their overseas suppliers, they increasingly adopt corporate codes of labour practice.[9] They also use labels that reflect compliance with the social or environmental standards surrounding the production of their goods, and strengthen their brand name by emphasizing 'responsible sourcing'—all actions bearing directly on labour conditions of their overseas suppliers. Moreover, as these suppliers experience economic upgrading, they may also experience social upgrading.

With reference to the challenge of globalization to social dialogue *(pillar four),* production undertaken by globally dispersed developing country firm makes it difficult to organize local workers. Without an independent representation and the collective power to negotiate with employers, government and other stakeholders, workers are unable to secure dialogue (Barrientos 2007,1–2). We note, however, that international trade unions and non-government organizations have truly promoted social dialogue at the global level. All in addition to several multi-stakeholder initiatives (e.g., "Ethical Trading Initiative" (U.K.)) that

[8] For a full discussion of sweatshop conditions in the global apparel industry, see Bonacich and Applebaum (2000).

[9] These are codes which the corporation *voluntarily* adopts, thereby pledging to observe the ILO core labour standards (conventions highlighted in footnote 1).

have established comprehensive international codes of labour practice. Such initiatives suggest that global social dialogue may complement national-level ones.

DW-Labour Productivity Nexus

Many empirical studies linked DW pillars to labour productivity. Along *pillar one*, freedom of association, the right to collective bargaining, as well as the firm providing an internal mechanism for dispute resolution—all serve as viable channels for employees to voice work-related concerns, hence positively impacting their productivity. Similar effects result from the elimination of child labour (often found to crowd out adult employment) and the elimination of forced labour (perceived as a form of coercion). Discrimination (whether practiced on the basis of gender, physical disability or otherwise), places a barrier against free competition among individuals. Its elimination permits: better matching of individuals and jobs; improved career prospects for those previously discriminated against thus promoting worker longevity and furthering capacity-building; gaining access to rewarding/challenging job assignments that trigger creativity; greater sense of fairness; lower stress from perceived discrimination at work (Pérotin and Robinson 2000,560–1)—all with implications for productivity enhancement. Moreover, the adoption of corporate codes of labour practice is often found to be associated with improvements in worker health and safety, in the provision of health insurance, and in more benefits and legal employment entitlements.

Along *pillar two*, wage adequacy underpins 'worker security' (as highlighted earlier). On-the-job-training enhances worker skills, thus serving as a tool for raising future earnings. Finally, the formality of employment provides the stability required to guarantee knowledge/skill accumulation, and avoids the disrupted access to benefits.

Along *pillar three*, social protection, via safe and healthy work environment, permits employees to exploit their full capacity and their potential for creativity and innovation. It also preempts risks of stoppage and of high employee turnover. Along the dimension of effective pension and health insurance coverage, employees are provided with security against old age hazard which helps lower absenteeism. It may also motivate workers to increase productivity, having realized that their contribution to social protection constitutes good investment towards a healthier life and better future.

Along *pillar four*, dialogue enhances workers' commitment to their firm, hence facilitating the introduction of new technologies and redesigning of the firm's organization to

the mutual benefit of both workers and entrepreneurs, and, therefore, tends to affect both labour and total factor productivity in a positive manner (Freeman and Medoff 1984).

Literature with Relevance to Egypt's Case

There is no dearth of labour market studies in Egypt. In fact, various studies have handled aspects of the four pillars of DW but none have attempted an assessment of their attainment or relation to labour productivity. As such, we briefly review some of these studies, meanwhile revealing the need for further contributions in this area.

With respect to pillars one and two, and particularly in relation to informality (under employment conditions of pillar 2), McCormick and Wahba (2004) address whether informal employment is a step in the direction of semi-formal/formal employment, concluding that it may be more of a stepping stone for male workers of a higher level of education vis-à-vis their female counterparts. Wahba (2009a,b)[10] point to high informal employment resulting from Egypt's Economic Reform and Structural Adjustment Programme, as well as a high probability of new labour force entrants (especially females) joining informal employment. With respect to the flexibility permitted by Law 12/2003,[11] the latter study concludes that flexibility has in fact increased formal employment in the private non-agricultural waged sector and that this should be a step in the direction of achieving decent employment (Wahba 2009b, 29).

Hassan and Sassanpour (2008)[12] highlight issues of labour market flexibility indicating that Labour Law 12/2003 aimed at striking a balance between labour market flexibility and the protection of labour rights. The study also highlighted issues related to the unionized sector and unionized activities, describing it as 'small' and 'limited,' respectively, despite the fact that Law 12/2003 has allowed employees the right to strike and to engage in collective bargaining (for firms of more than 50 employees) (Hassan and Sassanpour 2008,12).

[10] For a comprehensive overview of the current legislative/institutional framework of the Egyptian labour market, see Wahba (2010).

[11] The law emphasizes the flexibility of firms with respect to the hiring/firing process, allowing private sector employers to renew a temporary contract without transforming it into a permanent status as stipulated in the preceding law, allowing employers to terminate a contract more easily and to lay off workers on the pretext of difficult employment conditions, and allowing workers the right to appeal a dismissal (Wahba 2009b,7–8).

[12] The study also highlighted the wage setting mechanism in the private sector and the social security benefits. The former is described as being of an adequate wage differentiation across sectors and skill levels. It is subject to Law 12/2003 which established the National Council of Wages responsible for setting the minimum wage. However, the Council has not issued any decisions since its inception, with wages in the private sector set largely by the interplay of supply and demand for labour.

With respect to pillars one and four, Ghoneim (2010) briefly touches on the implications of Egypt-EU Association Agreement and the European Neighbourhood Policy for equal treatment and social security of migrant Egyptian workers. The author indicates that both the agreement and the policy deal with either pillar very broadly, thus not giving them due attention in the negotiations with the EU. In its focus on migrant workers, however, the study was not geared to DW attainment domestically in any specific sector. Also under pillar one, El-Haddad (2009) indicates that although the labour law stipulates equal pay for equal work, yet gender discrimination (under *pillar one*) remains evident in entry points into the labour market and in job titles and ranks as well as in pay scales. The study concludes that it may be important to pass an equal pay act that addresses these issues.

Although both Solidarity Center (2010) and El-Ehwany (2007) stand out as being pertinent to DW in Egypt, yet neither work targets an assessment of its attainment. The former study is based on interviews with worker activists and trade unionists across various economic activities, non-government organizations, and a variety of secondary sources (e.g., the media). It remains of a sociological nature. It discusses only pillar one at length (freedom of association, discrimination, child and forced labour) while making passing reference to the remaining pillars. It can, therefore, serve as a tool for generating increased awareness of DW issues. El-Ehwany (2007), on the other hand, lucidly establishes the link between the poverty of workers and their deprivation of rights to appropriate working conditions and time, social protection and representation. Poverty is aggravated not only by workers having only their labour time to deliver as output, but also by the heavy employment concentration in the informal sector across both rural and urban areas. The paper further relates the possible attainment of the various DW dimensions to the required changes in the legislative framework,[13] which may foster the legal empowerment of workers.

Hence, there remains an evident need for further works that attempt to address DW attainment in greater detail. The present paper aims to contribute to the literature on that front. It also does so with application to an industry that is focal to Egypt's manufacturing sector (see selection criteria below).

[13] Law 12/2003 on all four pillars, Law 47/1978 regulating employment of civil servants, Law 53/1983 and subsequently Law 12/2003 on minimum wages, Laws 35/1976, 1/1981 and 12/1995 regulating the operation of trade unions.

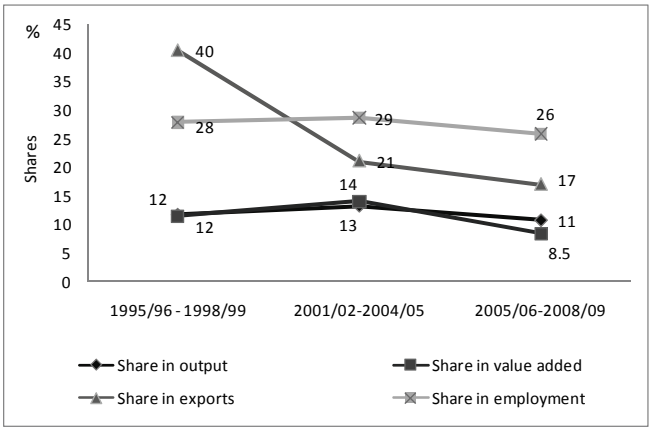
II. SAMPLE SURVEY

This section reviews the criteria for selecting firms from Egypt's T&A industry as a case for study, presents the survey methodology employed and *descriptively* analyses survey results so as to give an overview of DW attainment in the sample firms.

II.1. Criteria for Selecting Egypt's T&A Industry

Selecting Egypt's T&A industry as a case for study was partly driven by the fact that many of its firms are engaged in GVCs. Such chains are governed by GBs who impose stringent labour requirements on their suppliers, thus bearing on the latter's attainment of DW. Selection was also driven by the T&A industry's share in the employment, output, value added and exports of the manufacturing industry (shown in Figure 1):

Figure 1. Average T&A Share in Employment, Output, Value Added and Exports of the Manufacturing Industry (%), 1995/96 -1998/99, 2001/02-2004/05 and 2005/06-2008/09



Sources: Calculated from CAPMAS annual industrial survey, various issues.

As evident from Figure 1, T&A contributes, on average over the period spanning 1995-2009, more than one quarter of manufacturing employment, one quarter of exports, and one tenth of output and value added, respectively, further underscoring its relevance as a case for study.

II.2. Methodology

We use a sample survey of 50 T&A firms in Egypt each employing 50 or more persons. Selection was driven by our belief that medium-to-large firms, as opposed to micro-to-small

ones, are the ones more likely to seek DW attainment.[14] With the objective of eliciting both employers' and employees' views on the different DW pillars, a total of 100 questionnaires was equally divided between the two in the sample firms. Accordingly, two separate questionnaires were addressed to the employer and an employee in each firm (for details of either questionnaire see the version of this paper posted on the ECES website).

Sample firms were selected from a sample frame of 398[15] firms (*Source*: CAPMAS Annual Industrial Survey 2009 and 2008/09 (for private and public sector firms, respectively)). The sample was stratified so as to reflect the geographical distribution of firms across the governorates of Egypt, as well as the public/private sector contribution to employment and value added in each governorate.[16] The level of confidence was 95 percent with a 14 percent sampling error for each of the two groups in the sample.

The survey procedure was to train interviewers on DW issues and then contact sample firms through a written questionnaire. The latter contained questions covering a general profile of the firm[17] and questions pertaining to DW, firm's export performance, quality- and labour-specific certification/accreditation. Responses came in three forms: number/value/percentage; "yes/no" category; scales. Scaled responses were either *interval* scales reflecting the range of options available to the respondent,[18] or *ordinal* scales rating

[14] We note that, as per EU criteria for classification of enterprises according to 'staff headcount', large firms are those employing more than 250 employees, medium less than 250, small less than 50 and micro less than 10. *Source:* European Commission Enterprise and Industry Online < http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm> Accessed (06/01/2011).

[15] Representing 34 percent of a total of 1179 T&A firms.

[16] For perspective, data revealed a high concentration of T&A firms in: the Delta region (of which, the sample included firms from Gharbia and Sharqia); Alexandria; Greater Cairo (of which, the sample included firms Cairo, October 6th, Giza). The following is the total number of public and private firms sampled from each governorate: Cairo (3 public, 4 private); Giza (1 public, 2 private); October 6th (5 private); Sharqia (24 private); Gharbia (4 public, 3 private); Alexandria (1 public; 3 private). Overall sample was composed of 9 public and 41 private firms (of which: 36 domestic private ownership, 3 joint ventures, 2 full foreign ventures).

[17] Geographical location; specific activity (textile or apparel manufacturing, or both); total number of employees in the years 2007, 2008 and 2009; value of output at selling price in the years 2007, 2008 and 2009; value of investment in the years 2007, 2008 and 2009; legal status; ownership structure (percent of foreign ownership, where applicable); firm's workforce broken down by level of education (preparatory, secondary (general certificate, commercial, industrial) and university).

[18] For example, the scaled response on 'whether lighting conditions are suitable for carrying out the job task' ranged from 'not at all suitable' to 'moderately suitable' to 'highly suitable,' thus reflecting respondent's assessment of this aspect of their working conditions.

the respondent's assessment of a particular dimension of DW.[19] Although most of the survey questions were addressed to employers and employees alike, those requiring knowledge of firm specifics were addressed to employers only.[20] Moreover, one question exclusively asked employees to subjectively assess those dimensions of each DW pillar that they perceived as key drivers of their productivity. We used the percentage of total employees giving each of the responses along the scale to calculate a weighted average response for each dimension. We could then rank the dimensions of each pillar as per employee priority.

II.3. Descriptive Analysis of Survey Results

This analysis gives an overview of employer and employee responses. For each group, 'value responses' are reported as the average across sample firms, 'yes/no' category responses are reported as percent of total sample who responded 'positively,' and scaled responses are reported as weighted averages. We give employers and employees' responses by pillar, meanwhile exploring the relevant dimensions of each.

II.3.a. Pillar one (rights at work and labour standards)

Along *pillar one,* we asked employers and employees to assess: if workers are permitted to participate in trade unions (with or without prior authorization); if the firm has an internal mechanism for dispute resolution in place; if male and female employees were equally compensated for work of equal value, and if they enjoyed equal access to holding top management positions (equality in occupation); if there is evidence of bias based on gender, religion or physical disabilities; if there are incidents of child or forced labour; if firm adopts international codes of labour practice.[21]

The weighted average of either employers' and employees' responses was 2.68 on the *permission to participate in trade union*, indicating that the two groups were both inclined to believe that workers were "almost always" permitted to do so. Moreover, on average, only 20 and 29 percent of employees and employers, respectively, confirmed that participation

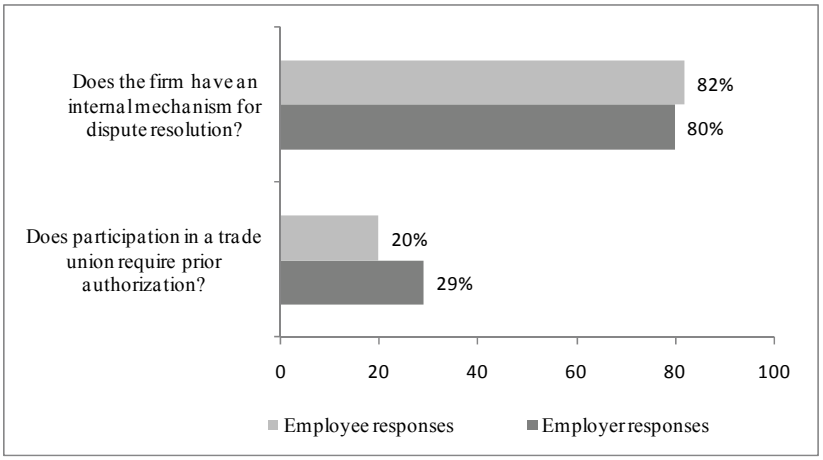
[19] For example, the responses on the "effect of various dimensions of each DW pillar on labour productivity" (question exclusively addressed to employees) ranged from "absolutely no effect" to "slight effect" to "moderate effects (i.e., sometimes affecting)" to "large effect" to "severe effect."

[20] For example, data on employment statistics by age category.

[21] To ensure that respondents were clear on the meaning and implications of such codes, interviewers were asked to define such codes as: "codes involving *voluntarily-adopted* policies and procedures relating to labour practices, working conditions and rights at work which are consistent with the ILO conventions pertinent to DW dimensions."

requires prior authorization (see Figure 2).[22] As for *having an internal mechanism for dispute resolution,* around 80 percent of either group responded positively to having one in their firms (Figure 2). Such a mechanism provides a medium for voicing and resolving employee complaints and helps eliminate the cost and time associated with resorting to external mediation in case of worker grievance.

Figure 2. Percentage of Positive Responses to Questions on Union Membership and Dispute Resolution



Source: Survey results.

In reference to *gender bias*, employer responses on "equal pay for work of equal value"[23] gave a weighted average of 2.84 indicating near equality albeit with a slight tendency for males to be paid higher than females. However, on average across sample firms, employers reported an 81:19 male-to-female ratio for "occupying top management positions." However, it would be impossible to conclude from this ratio whether there is evidence of gender bias for two reasons: *one*, it may reflect gender differences in skills, technical expertise, educational attainment, years of work experience (Wright and Ermisch 1991,513–515); *two*, on average across sample firms, overall male-to-female employment ratio was 68:32 which is in line with the overall T&A industry male-to-female employment ratio of 70:30 in 2009 (*Source*: CAPMAS 2008/2009 and 2009).

Also in reference to *biases*, on average, employers reported a Muslim: Christian employee ratio of 90:10 in their firms. This comes in line with the distribution of Egypt's total

[22] The Egyptian constitution grants workers the right to join a trade union of their choice. However, neither Labour Law (12/2003) nor Trade Union Law (12/1995) has any specific stipulations that workers should declare their intention to join a trade union or be authorized to do so prior to joining.

[23] Questions on 'male and female pay and access to top management positions,' 'composition of workforce by religion' and 'political party affiliation' were addressed to employers only.

population among the two religious groups (*Source*: CIA Factbook for Egypt), thus reflecting no *religious bias*.[24] However, there may be some degree of bias against *workers with physical disabilities*. On average, only 78 percent and 66 percent of employers and employees, respectively, reported that their firm does hire workers with physical disabilities. It is worth noting that the Labour Law (12/2003) permits the employer to hire any disabled person of their choice, provided that such person is registered with the Ministry of Manpower and that, as stipulated by Law 39/1975 on the rehabilitation of disabled persons, disabled employees constitute 5 percent of the firm's workforce.[25] We further note, however, that the law sets no penalty on employers failing to hire within that percentage.

DW literature defines forced labour as that which takes place under compulsory circumstances that may be of slavery-type situations, bonded labour, or prison labour (Ghai 2003,125). We addressed a question on forced labour in its bondage form, specifically 'debt bondage.' The latter arises when a worker accepts credit from his employer and repays the amount in the form of working time.[26] On average, 20 percent and 22 percent of employers and employees, respectively, confirmed such practice in their firms, thus indicating that these firms were not perfectly free of forced labour.

To probe whether sample firms showed evidence of child labour, employers were asked to provide information on the composition of their workforce by age category,[27] as shown in Figure 3.

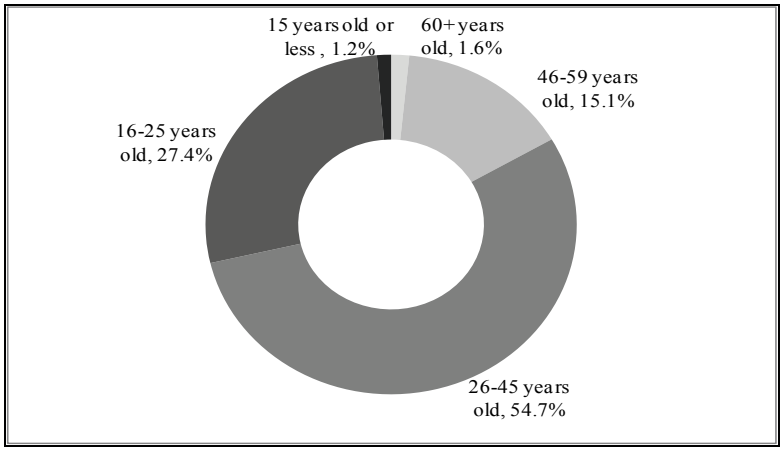
[24] Perhaps bias may be detected in unequal access of employees of either religion to top management positions. However, this was beyond the scope of our questionnaire which primarily focused on exploring the primary dimensions without over extending the questionnaire in a way that may jeopardize the clarity and accuracy of respondents' feedback.

[25] We further note that our survey questions do not include a question related to the percentage of disabled workers relative to the total firm's workforce since our primary concern was to identify whether or not there was any bias against disabled workers.

[26] Egypt's Labour Law (12/2003) stipulates that the employer may grant a loan to the employee against interest, or he may deduct the value of the loan from the employee's compensation on the condition that deductions do not exceed 10 percent of the value of the loan and 25 percent of the employee's compensation. As such, repayment in the form of work is definitely not permitted by the law.

[27] Question addressed to employers only.

Figure 3. Average Percentage Composition of Workforce by Age Category for Sample Firms



Source: Survey results.

Those below the age of fifteen constituted,[28] on average, 1.2 percent of the total workforce across sample firm.[29] The above percentage is traced back to incidents of child labour in three firms. In two of these, child labour constituted 5 and 15 percent of the respective firms' workforce, with children mostly assisting on the apparel production lines. In the third, child labour constituted 41 percent of the firm's workforce, with children working on carpet weaving. Employers reported that children worked for seven to eight hours a day and were compensated in cash. Survey results thus reflect a key violation of article 99 of the Labour Law (12/ 2003) prohibiting the use of child labour.

On the adoption of corporate codes of labour practice, more than half of the surveyed firms were found to adopt such codes (58 percent), while close to three quarters of these acknowledged having their premises and labour practices subjected to external auditing, while more than half also reported having a 'fairtrade label.'[30] Although the above label is not granted by the ILO, yet it indicates firms' awareness of the importance of abiding by core labour standards.

[28] As per ILO Convention No.138, the minimum age for work should not be below the age of finishing compulsory schooling, which is generally 15 years of age. However, developing countries are allowed to set the minimum age of 14 years in accordance with their socio-economic circumstances. Both Egypt's Labour Law (12/2003) and Child Law (12/2006) adopt the latter age. However, we chose to address the question as per the ILO Convention No. 138 to be consistent with international standards.

[29] Our survey results appear to be in line with those reported by El-Leithy et al. (2010). Based on the "Household Income, Expenditure and Consumption Survey for 2008/09" issued by CAPMAS, the study reports a national rate of child labour of 1.8 percent of the total number of children in the 6-14 years age bracket in the sample.

[30] Products bearing the 'fairtrade label' accredit the firm for meeting environmental and labour standards. The label is granted by the 'fair-trade labeling organization' and is widely acknowledged in international trade circles. It allows consumers to recognize and choose products meeting the above standards.

Exclusively asked to assess those dimensions of *pillar one* perceived as productivity-drivers, ranked weighted averages of employees' responses (between brackets) were: the availability of an internal mechanism for dispute resolution (3.12); equal access of male and female employees to top management positions (2.50); equal pay for work of equal value (2.40); application of corporate codes of labour practice (2.28); freedom to participate in trade unions (1.64). Ranging from a highest value of 3.12 (corresponding to "moderate effect") to a lowest value of 1.64 (corresponding to "slight effect"), the weighted averages indicate that dimensions of *pillar one* are generally perceived as 'moderate' productivity-drivers.

II.3.b. Pillar two (employment and income opportunities)

Along *pillar two,* which entails the creation of productive employment, we asked employers and employees on: monthly salary at entry level; if the respective salary was considered adequate for sustaining workers' family obligations; job-related training. [31]

Asked to define the entry-level salary of a worker, employers and employees reported an average of LE 477 and LE 456, respectively, reflecting close alignment of both parties. Although the reported average wages appear to be in line with the minimum wage legislated by the National Council for Wages in November 2010 to be LE 400,[32] it remains way below that ruled by the Administrative Court or that requested by trade unions. [33] Moreover, both

[31] Although wages come under pillar three of ILO DWA, yet pillar two relates to the creation of productive employment which entails the provision of an adequate remuneration and the enforcement of skill development policies that increase the employability of workers and the competitiveness of the enterprise (*Source*: <http://www.ilo.org/global/about-the-ilo/decent-work-agenda/employment-creation/lang--en/index.htm> Accessed 05/06/2011). Given that the questions posed under the present survey revolved around salary and its adequacy, we saw it fitting to include wage-related questions and job-related training that builds capacity and increases employability under pillar 2.

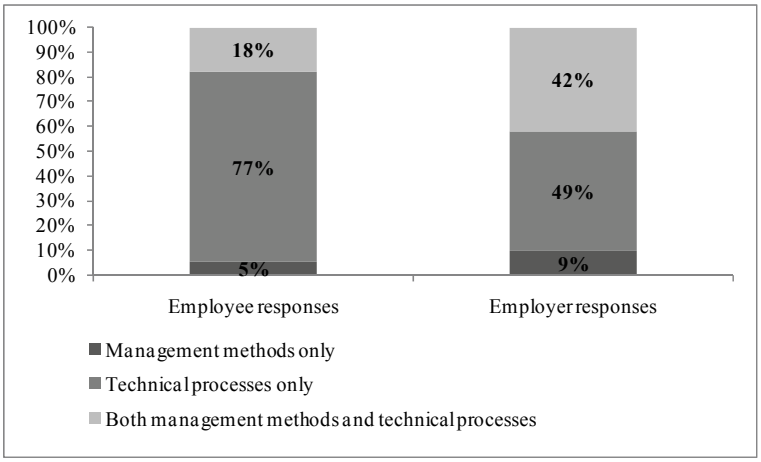
[32] Law 53/1984 stipulated the minimum wage LE 35. Helmy (2006) estimated that the entry level minimum monthly wage for a public sector employee in Egypt to be LE 168 in 2005. The author based the estimate of the basic salary of LE 35 adjusted for various salary increases applied to it between the years 1987 & 2006/07, plus the variable salary adjusted for various increases and allowances. The author further went on to estimate that if the LE 35 were to be inflation adjusted (using official inflation statistics between 1987 & 2006/07) it would, in fact, amount to LE 214 (Helmy 2006:2). Based on own calculations, adjusting for inflation to date, the effective entry level wage amounts to LE 356 which still remains below the official minimum wage legislated in November 2010. Furthermore, the legislated rate has been heavily criticized by the Egyptian Center for Economic and Social Rights because it sets the LE 400 minimum on gross wages (i.e., basic + salary increases + allowances + bonuses) and not on basic wages only, thus underestimating the minimum (*Source*: Al-Ahram Electronic Gateway 07/11/٢٠١٠).

[33] In March 2010, the Administrative Court ruled that the minimum wage for the state-employed is not in keeping with price increases and accordingly proposed that it must be LE 1200. However, this, too, was deemed unacceptable to trade unions that demanded a rate as high as LE 1500 (*Source*: Al-Masry Al-Yom, October 27th 2010).

employers and employees were of the opinion that wages were relatively insufficient to sustain worker family obligations. Weighted average of employers' responses was 2.64 (i.e., varying between 'insufficient' to 'almost sufficient') while the respective employees' response was 2.04 (i.e., insufficient).

On the participation of employees in job-related training, as evident from Figure 4, almost half the employers were of the opinion that their workers obtained training of a technical nature while 42 percent reported that they obtained both technical and management-related training. Employees had a different outlook. The majority of them reported that training was of a technical nature only, while only 18 percent reported obtaining both types.

Figure 4. Percentage of Positive Responses on Job-Related Training



Source: Survey results.

In their assessment of those dimensions of *pillar two* perceived as productivity-drivers, ranked weighted averages of employees' responses were: sufficiency of wages to sustain obligations (4.36); obtaining technical and management-related training (3.26). We finally note that the weighted averages indicate the first dimension to be of "strong to severe effect" while the second is of "moderate effect," implying that dimensions of *pillar two* are generally perceived as 'strong' productivity-drivers.

II.3.c. Pillar three (social protection)

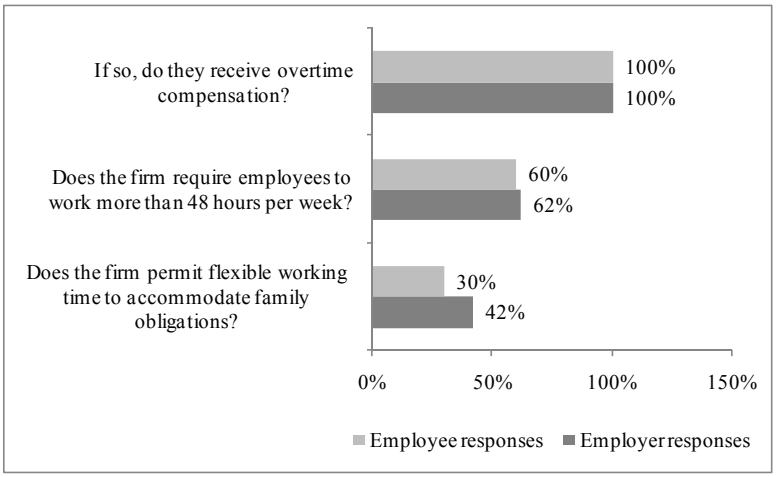
Pillar three captures *social protection* in its broad sense. Many dimensions are, thus, clustered under this pillar. It embraces labour protection as well as the coverage and effectiveness of social security schemes. Labour protection comprises wages,[34] working time and occupational

[34] Please see footnote 31regarding the rationale for including wages under pillar two.

health and safety (i.e., working conditions). Employers and employees were, therefore, asked: if workers are permitted some work time flexibility so as to accommodate family responsibilities; if workers are required to work in excess of forty-eight hours per week and, if so, if they received overtime compensation; working conditions (i.e., availability of potable water, access to lavatories, lighting and ventilation); if employees are at risk of working in an awkward posture for extended time (e.g., bent-up position) thereby subject to 'repetitive strain injury'; if employees are allowed to take paid sick leaves and paid maternity leaves; the nature of benefits that the firm provides (daily meals, transportation, discounts at particular stores; access to social and sporting facilities; loans at discounted interest rates; health insurance). Employers exclusively responded to questions on: the structure of their workforce (in terms of the percentage of employees hired as full-time (on annual contract), part-time (less than annual contract), or casual (no contract)). The above questions aimed to shed light on the terms of employment (formal or otherwise), hence its implications for social security. Employers further responded to questions on the male to female ratio of formally-hired technical and non-technical staff, and if the firm's retired employees receive pension.

On the flexibility of working time to accommodate family responsibilities, Figure 4 shows a higher percentage of employers responding positively, compared to employees (42 versus 30 percent, respectively). Both groups were, however, closely aligned on the possibility of requiring workers to work in excess of 48 hours per week (62 and 60 percent, respectively, responding positively), with complete confirmation that such excess working time is overtime compensated.

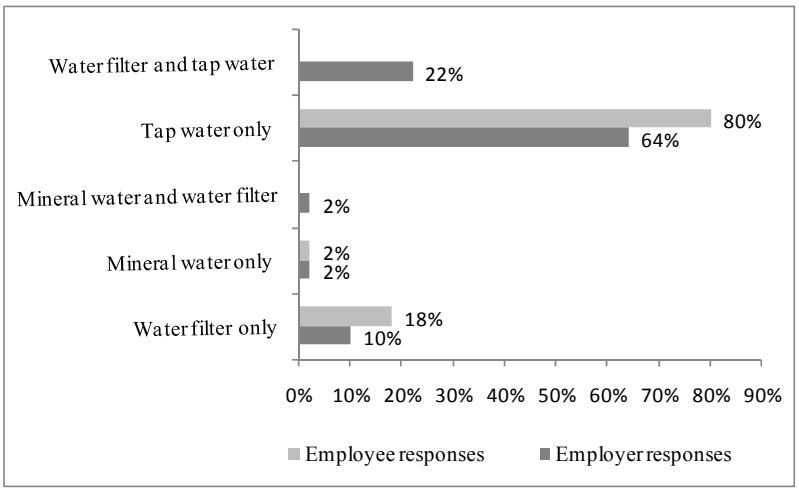
Figure 5. Percentage of Positive Responses on Working Time Flexibility and Overtime Compensation



Source: Survey results.

On *working conditions,* Figure 6 below shows a clear alignment of both employer and employee responses on the availability of potable water. Moreover, both groups fully confirmed access to lavatories, the availability of a first aid kit and a fire extinguishing unit on the work site.[35] As for lighting and ventilation conditions, the weighted average responses for employers and employees, respectively, was 4.58 and 4.40 on lighting, and 4.70 and 4.40 on ventilation. Employers, thus, evaluate lighting and ventilation conditions as being 'highly suitable' while employees perceive them as 'suitable or slightly above.' Compared to employers' responses, perhaps those of employees mirror their heightened awareness of day-to-day job hazards.

Figure 6. Percentage of Positive Responses to Questions on Sources of Potable Water



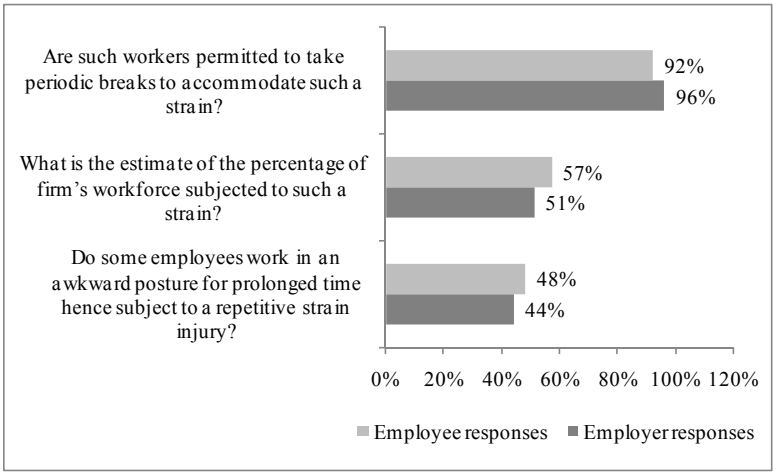
Source: Survey results.

Heightened awareness of day-to-day job hazards among employees is further evident from Figure 7. On repetitive strain injury, 48 percent of employees, on average, responded positively, meanwhile estimating that around 57 percent of their firm's workforce may be subject to such an injury. Employers' responses were 44 and 51 percent to the respective questions. This should not, however, undermine employer concern over workers' health conditions. In fact, on average, 96 percent of employers reported that workers are permitted to take periodic breaks to accommodate such a strain, while 94 percent of them confirmed that

[35] Both first aid kits and fire extinguishing units being a pre-requisite for safe working conditions as stipulated by Occupational Health and Safety Law.

employees are provided an insurance against work injuries[36] and are permitted to get paid sick leaves.

Figure 7. Percentage of Positive Responses on Strain Resulting from Working Conditions and Estimate of Workforce Subject to Such Strain



Source: Survey results.

As for employees' entitlements to paid sick leaves, paid maternity[37] and the provision of health insurance services, a weighted average of employers' and employees' responses, respectively, were 2.86 and 2.72 for paid sick leaves indicating that such leaves were 'almost always' granted. However, consensus on paid maternity leaves was less evident in both employers' and employees' responses (with a weighted average of 2.56 and 2.42, respectively) both indicating a "sometimes to always" likelihood of such leaves. Finally, the respective responses on health insurance were 2.78 and 2.56, with a positive note that it was granted to almost all employees.

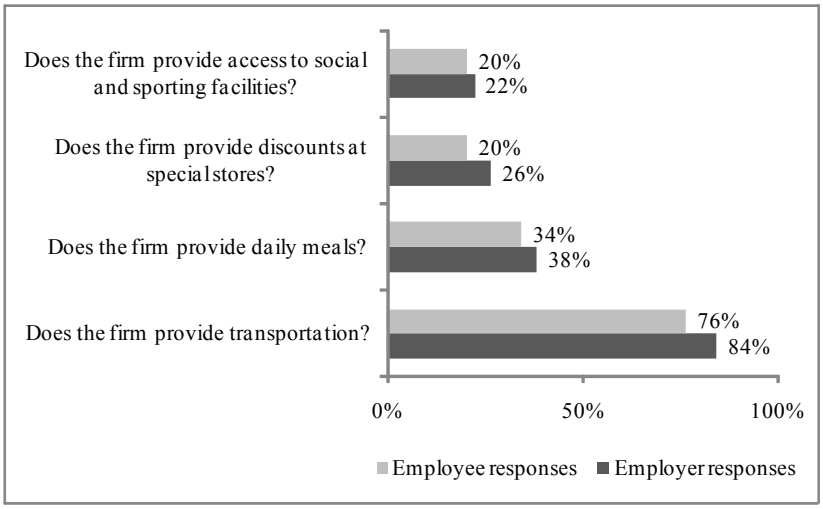
In reference to special benefits granted to employees, as indicated in Figure 8, both employers and employees confirmed that transportation services and daily meals to

[36] Although it would have been revealing to identify the extent to which such insurance is effectively implemented (perhaps quantified by the number of incidents of insurance payment)—such level of detail was beyond the scope of the questionnaire. We note, however, that the Social Insurance and Pension Law (135/2010) stipulated that employees subjected to work injury rendering them fully (100 percent) or partially (35 percent) impaired, are eligible to an insurance that varies with the nature of impairment. The respective law should become effective in January 2012.

[37] Article No. 54 of the Labour Law (12/2003) stipulates that, in accordance with the Social Security Law (79/1975), an employee is entitled to 75 percent of his daily wage for three months to be increased to 85 percent for another three months (thus a total of 180 days at most). Meanwhile, article No. 91 of the Law stipulates that a female employee who has spent at least ten months in serving the firm is entitled to three months of paid maternity leave.

employees were of the highest incidence, followed by discounts at special stores and access to social and sporting facilities.

Figure 8. Percentage of Positive Responses to the Provision of Benefits

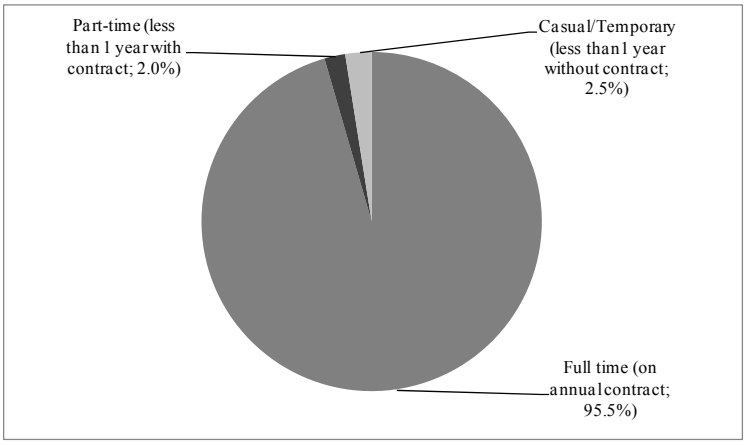


Source: Survey results.

In reference to the terms of employment, on average, employers indicated that the overwhelming majority (95.5 percent) of their workforce was formal (full time workers hired on an annual contract). Slightly more than half of the remaining 4.5 percent was made up of casual/temporary labour. Such workforce composition is in keeping with the sample firms being 'formal' ones (94 percent of which confirmed having both a commercial and an industrial register, with 6 percent having an industrial register only).[38] Moreover, sample firms held 'formal' legal statuses which included limited liability, sole proprietorship, among others.

[38] We note that having industrial and commercial registers is not a sufficient condition for formality of enterprises. Other conditions include: the legal status of the company (and the sample firms varied from sole proprietorship to limited liability and others), whether the firm issues a complete set of accounts such as balance sheet and income statement, whether the fixed assets of the firm are recorded as 'owner-belonging' or 'enterprise-belonging' (with the latter signaling 'formality'), the affiliation of workers and business holders to the social security system, and finally, regular payment of taxes.

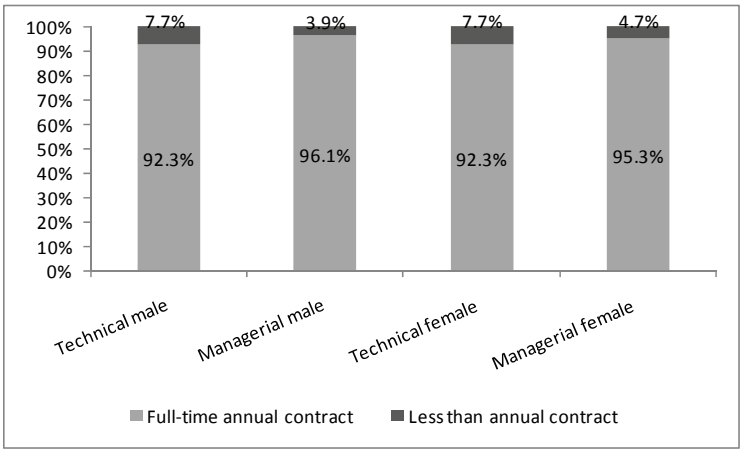
Figure 9. Average Composition of the Workforce



Source: Survey results

Moreover, employers revealed that, on average, both technical and managerial staff was formally contracted (either on annual or less-than-annual basis). However, being of higher skill levels, it may be expected that technical and managerial are formally employed. Within these two staff categories, as evident from Figure 10, the bulk of males and females appears to be hired on full-time annual-contract basis. Also, whether technical (male and female), or managerial (male and female), there appears to be a close alignment in the percentage hired on full-time annual-contract. Both of the above features reflect no gender bias in that respect.

Figure 10. Breakdown of Formal Male and Female Employment by Type of Contract



Source: Survey results.

A weighted average of employer responses to whether their full-time employees were eligible for pension upon retirement was 2.08, thereby only "some" obtained pension. Given the formality of their employed workforce (as reported in Figure 9), there appears to be an evident misalignment between the extent of formal employment reported and the pension

scheme currently in place.[39] Moreover, when asked on the dimensions of *pillar three* perceived as productivity-drivers (further discussed below), "pension" tops the list of employees' priorities. This signals yet another misalignment between employees' needs/interests and the existing pension system.

In their assessment of dimensions of *pillar three* perceived as productivity-drivers, ranked weighted averages of employees' responses were: provision of pension upon retirement (3.78); provision of health insurance (3.76); provision of special benefits such as transportation, meals, loan facilities and special discount stores (3.76); provision of paid sick leaves (3.64); provision of insurance against work injuries (3.56); formal employment in the firm whether full-time (1 year +) or part-time (less than 1 year) (3.34); working conditions—adequacy of lighting conditions (3.30), adequacy of ventilation conditions (3.22), availability of potable water (3.08); flexible working time to accommodate family obligations (3.08); entitlement to periodic breaks for those subject to repetitive strain injury (2.90).We finally note with ranging from a highest value of 3.78 (corresponding to "relatively strong effect") to the lowest of 2.90 ("moderate effect"), weighted averages indicate that dimensions of *pillar two* are perceived as being 'relatively strong' productivity-drivers.

II.3.d. Pillar four (social dialogue)

Along *pillar four,* employers and employees responded to questions on: union density rate (trade union members as percent of firm's workforce); presence of a worker council in the firm; instances of negotiating worker grievance(s) with a trade union; [40] chance of resorting to external mediation in case of failure to reach a settlement with the union; average number of strikes held by employees over the past five years and primary reasons for strikes.

On average, employers reported a union density rate of 33.5 percent.[41] Both employers and employees were closely aligned in their positive response to having a worker council in their firm (38 and 36 percent, respectively). Around 20 percent of employers reported

[39] Our survey results are corroborated by also those of El-Leithy et al. (2010,18–26) whereby those formally employed are reported to constitute 84 percent of total employed workers in Egypt in 2009, while only 17 percent of Egypt's population subscribe to a pension scheme.

[40] Question addressed to employers only.

[41] Employee response was not very telling as more than of half the surveyed employees reported 'not knowing about the union density rate in their firm', the remaining ones, on average, reported a 49 percent union density rate.

incidents in which the council did negotiate some worker grievance with the trade union[42] (with an average number of 10 such negotiations over the past year). Over the past five years, 6 employers reported a strike in their firm,[43] with an overall average of 2 strikes. Similarly, 4 employees reported a strike held in their firm.[44]

In an open-ended question, employers and employees also reported primary reasons for such strikes (Figure 11). Worthy of note is that wages, claims to profits together with a need for better incentives, and the hazards of early retirement are common factors in the responses of both employers and employees. These factors bring to the forefront dimensions of *pillars two and three*.

Figure 11. Reasons for Strikes Held over the Past Five Years as Reported by Employees' and Employers'

Source: Survey results.

Assessing dimensions of *pillar four* perceived as productivity-drivers, employees cited only 'the possibility of resorting to external mediation in case of grievance' and 'the freedom to execute a strike' with a weighted average of 2.36 and 2.22, respectively. However, both values reflect a general sentiment that *pillar four* may only be of a "slight" productivity impact.

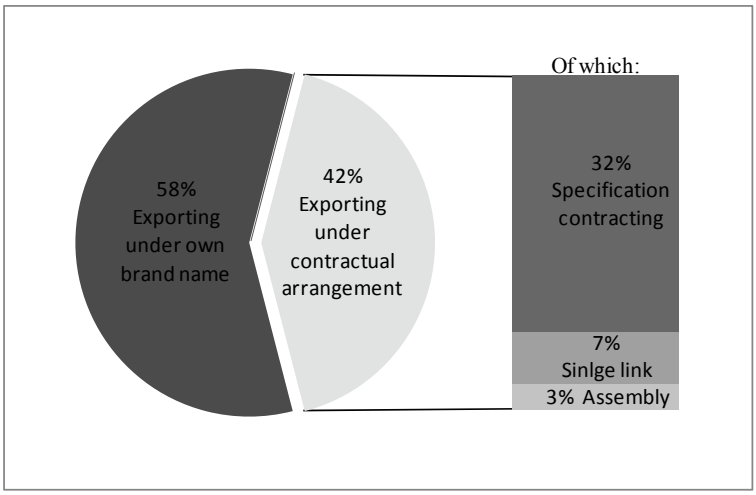
[42] Question on instances in which the firm's top management negotiated some worker strife with a trade union was addressed to employers only.
[43] Two employers reported 3 strikes, 1 reported 2 strikes and 3 reported one strike.
[44] One employee reported three strikes, 1 reported two strikes; 2 reported one strike.

II.3.e. Export performance and certification

Export-relevant questions were exclusively addressed to employers: if their firm exports; if so, whether under its 'own brand name' or under some 'contractual arrangement' (i.e., subcontracting for a GB);[45] on the country of origin of GBs; if GBs impose strict quality and lead times requirements; if they require adherence to international labour standards; if the exporting firms provide incentives based on export-performance; if such incentives differ by employee skill and level of education. In terms of evaluation, employees were asked about the implications of exporting for their productivity.

In total, 62 percent of the sample firms were exporters. Figure 12 gives their distribution by nature of export arrangement. We note that contractual arrangements with GBs varied from undertaking only a single link of the chain *to* assembly *to* specification contracting (heavily tipping the scale).[46]

Figure 12. Distribution of Exporting Firms by Nature of Export Arrangement



Source: Survey results.

GBs mostly originated from the EU and USA. On average, 92 percent of employers in the exporting firms confirmed that it is not only imperative for Egyptian firms to deliver high-quality-short-lead-time products, but that it is equally important to adhere to international labour standards. They further confirmed that firms do provide their employees with monetary

[45] These are the branded marketers or manufacturers who subcontract out various links of the value chain to firms in developing countries.

[46] This entails undertaking most of the chain links except for focal ones such as design, marketing and distribution (heavily guarded by GBs). Under this arrangement, T&A firms produce according to the specifications spelled out by the GB, and they often entail learning and skill acquisition for these firms.

export-based incentives and that such incentives vary by employee skills and level of education (on average, 84 and 91 percent responded positively to the respective questions). In terms of evaluation, employees' responses reflected a strong sentiment that exporting has positive productivity effects, for which they cited the following reasons: greater incentives; improvement in the work environment; provision of training and acquisition of skills, with weighted average responses for the above reasons were 4.44, 3.98 and 3.80, respectively (reflecting 'severe' export impact on productivity).

On an equally positive note, employers were asked about their firm's quality- and labour-specific certification. On quality, they were asked about ISO 9000, 9001, 9002 quality certification (pertaining to standardized quality management systems), ISO 14000 and 14001 (pertaining to standardized environmental management systems). On labour, about the OHSAS 18801, WRAP, SA 8000 and HPI certificates.[47] Twenty eight of the 50 sample firms (56 percent) were accredited with either quality or labour certificates or both. Of these, 7 (16 percent of sample) had obtained the following labour-specific certificates: OHSAS 18801 (4); WRAP (2); SA 8000 (1); HPI (1))—the percentages signifying sound awareness of labour standards. We further observed these labour accredited firms, 4 exported under their own brand name and 3 under a specification contracting arrangement, suggesting that there may be an association between exporting and labour-specific accreditation.

To sum up, survey results on *pillar one* have established that there is some degree of freedom of association, slight biases on the bases of gender and physical disabilities, but none on religious basis. There is some evidence of child or forced labour. On *pillar two*, both employers and employees were concerned over the insufficiency of wages. On *pillar three,* working conditions were generally evaluated as 'satisfactory' despite concern over repetitive strain. Moreover, the reported formality of employment in the sample firms seemed to be misaligned with the pension scheme in place. Benefits were highly valued by employees. On *pillar four,* there is evidence of having a mechanism of dispute resolution in place, although strikes appear to be good venues for voicing employees' concerns. With reference to *exporting*, sample firms that do export have confirmed that it is imperative to meet

[47] OHSAS 18801 is for 'occupational health and safety management systems' whose ultimate goal is to foster a safe work environment through continuous improvement approach; WRAP is for 'worldwide responsible accredited production' for the promotion of ethical manufacturing that rests on the fair treatment of workers with particular emphasis on wages and safe working conditions; SA 8000 is for 'social accountability' that also relates to ethical manufacturing; HPI is for 'human performance improvement' that targets identifying workplace learning and performance problems and recommends appropriate remedies.

international labour standards if they are to subcontract for GBs. Finally, sample firms have exhibited a high awareness of the importance of both quality and labour-specific certification.

Weighted averages of employees' assessment of the *dimensions of each of the four pillars* perceived as productivity-drivers fell in the following ranges: *pillar one* 3.12 to 1.64 (corresponding to "moderate" to "slight" effects); *pillar two* 4.36 to 3.26 ("severe" to "strong"); *pillar three* 3.78 to 2.90 ("strong" to "moderate"); *pillar four* 2.36 to 2.22 ("slight"). Thus, employees' priority of DW pillars came as follows: *two, three, one* and *four.* Furthermore, *exporting* 4.44 to 3.80 has been perceived as having a "severe" productivity impact due to its association with greater incentives, improvement in the work environment and the provision of training together with skill enhancement.

III. ECONOMETRIC ESTIMATION EMPLOYING SURVEY DATA

We used *employer and employee response*s to formulate *two sets of scores* to be used as independent variables in the estimated labour productivity equations (1) and (2), respectively. The *first* set was comprised of an aggregate firm-level score for *each pillar*. It was intended to give a whole assessment of DW attainment by pillar. The second was comprised of disaggregate firm-level scores reflecting DW attainment *along the dimension of each pillar.* Zooming in on specific dimensions could help determine how each affects labour productivity. Equations (1) and (2) also included: aggregate scores of each firm's export performance and of its quality- and labour-specific certification; a dummy variable reflecting its accreditation with labour-specific certificate(s) (e.g., SA 8000); a host of other independent variables in keeping with various empirical estimates of labour productivity (Stiroh 2001; Fryges 2005; Choudhry 2009; Marelli and Pastore 2010).

III.1. Estimation Strategy

The link between labour productivity and DW pillars is given by equation (1):

$$(1)\quad \log (Y/L)_i = \beta_0 + \beta_1 \text{ScorePillar1}_i + \beta_2 \text{ScorePillar2}_i + \beta_3 \text{ScorePillar3}_i + \beta_4 \text{ScorePillar4}_i + \beta_5 \text{ScoreExpPerf}_i + \beta_6 \text{ScoreCert}_i + \beta_7 \text{DummyLCert}_i + \beta_8 \log (I/L)_{i-1} + \beta_9 \log (\text{IntenEducL})_i + \beta_{10} \text{DummyFDI}_i + + \beta_{11} \log (\text{firmsize})_i + u_i$$

where:

- $\log (Y/L)_i$ is the logarithm of average product of labour. Y is measured as the value of output at selling price of firm *i*. L is the number of employees in firm *i*. Values of output were

deflated using the producer price index by subsector (textile and apparel, respectively) (*Source*: Egypt's CAPMAS 'price indexes' unit);

- ScorePillar1$_i$ was formulated by translating each of the employer/employee responses along each dimension of the pillar into a numerical value, summing up to obtain a composite score, then factorizing relative to the maximum score attainable on all questions relevant to the pillar, (ScorePillar2$_i$ … ScorePillar4$_i$ were formulated in the same way);

- ScoreExpPerf$_i$ of firm *i* was formulated by translating each of the employer/employee responses to export performance questions into a numerical value, summing up to obtain a composite score, then factorizing relative to the maximum score attainable on all relevant questions;

- ScoreCert$_i$ of firm *i* was formulated by translating each of the employer/employee responses on quality- and labour-specific certification questions into a numerical value, summing up to obtain a composite score, then factorizing relative to the maximum score attainable on all relevant question;

- DummyLCert$_i$ takes the value '1' if the firm *i* has responded positively to obtaining some labour-specific certificate (e.g., SA 8000), '0' otherwise;

- Log (I/L) $_i$ is the logarithm of investment-labour ratio used as a proxy for capital-labour ratio (as a measure of capital deepening/intensity). We note that it is not uncommon for respondents to be reluctant to deliver survey information on their stock of capital, thus proxied by the value of investment instead.[48] Log (I/L) $_{i-1}$ is used in its lagged form to proxy for lagged capital intensity/deepening. As new investments materialize and physical capital stock is enhanced, the impact on labour productivity is often lagged as a result of some labour adjustment period. Investment values were deflated using the producer price index by subsector (textile and apparel, respectively) (*Source*: Egypt's CAPMAS 'price indexes' unit);

- Log (IntenEducL) $_i$ is the logarithm of the percentage (i.e., intensity) of employees in firm *i* with a secondary or higher education relative to the total number of employees;

- DummyFDI$_i$ takes the value '1' if the firm *i* has 10 percent or more foreign share of equity (foreign direct investment (FDI)), '0' otherwise. The rationale for including this variable is that FDI share of total equity is often associated with labour productivity improvement

[48] For similar concerns see Fryges (2005).

through the introduction of capital, technology transfer and enhancement of management skills, or indirectly through spillover effects to domestic firms (Liu et al. 2000);

-Log (Firmsize) $_i$ is the logarithm of firm size represented by the total number of employees in firm *i*. The rationale for including this variable is that labour productivity improvement is often associated with larger economies of scale;

- u_i is assumed to behave normally.

According to equation (2), labour productivity is linked to DW sub-pillars as follows:

$$(2)\quad \log (Y/L)_i = \beta_0 + \beta_1 \text{ScoreSub-pillar1}_i + \beta_2 \text{ScoreSub-pillar2}_i + \beta_3 \text{ScoreSub-pillar3}_i + \beta_4 \text{ScoreSub-pillar4}_i + \beta_5 \text{ScoreExpPerf}_i + \beta_6 \text{ScoreCert}_i + \beta_7 \text{DummyLCert}_i + \beta_8 \log (I/L)_{i-1} + \beta_9 \log (\text{IntenEducL})_i + \beta_{10} \text{DummyFDI}_i + \beta_{11} \log (\text{firmsize})_i + u_i$$

where, ScoreSub-pillar1$_i$ of firm *i* was formulated by translating each of the employer/employee responses along each dimension of the pillar into a numerical value, then factorizing relative to the maximum score attainable on the respective dimension; (ScoreSub-pillar2$_i$ … ScoreSub-pillar4$_i$ were formulated in same way). We note that, where possible, some of the sub-dimensions were thematically grouped.

III.2. Estimation Results

Using the responses of employers and employees, estimation results for equation (1) are given in Appendix 1. Results show that only pillar three *(social protection)* established statistical significance,[49] with the sign of the estimated parameter indicating that it is 'counterproductive.' This is contrary to theoretical expectation that a safe and healthy work environment allows employees to exploit their full capacity and potential for innovation, and to preempt risks of stoppage and high employee turnover. Also, that effective pension and health insurance coverage are expected to provide employees with security against old age hazard thus lowering absenteeism, ultimately yielding positive productivity effects.

One possible explanation for the negative relation is that although working conditions may bear positively on productivity, yet this may be more than offset by social security creating "a perverse incentive structure that works against the long run interests of workers,

[49] Capital intensity and labour certification were also statistically significant in the estimated equation, while only the former was significant under the employee response estimation. Both are more fully discussed under estimation results for equation (2).

particularly those with low incomes" (similar empirical findings for Mexico in Levy 2007, 2). In essence, non-merit-based protection may lead to loss of initiative, incentive, and risk-taking capability (Saith 2004, 8), thus hampering labour productivity.[50]

Perhaps the aggregate nature of the ScorePillar3$_i$ renders it difficult to determine whether some of its underlying dimensions are more counterproductive than others, or whether some have negative productivity effects that may be offsetting other positive ones. The same concern holds for the other three pillars. Hence, it may be useful to disaggregate to the level of sub-pillars and use scores reflecting individual dimensions of each pillar instead. Appendix 2 gives estimation results for equation (2).

With reference to dimensions of *pillar one (rights at work)*, employers' response estimation indicates that discrimination practiced on the basis of gender (embodied in 'equal pay for work of equal value' and 'access to holding top management positions') has negative implications for labour productivity. These results appear to tally with what has been previously identified through the descriptive analysis of survey results (presented in section II.3.a) of slight male gender bias in equal pay for work of equal value.[51] With reference to physical disabilities, implications were also negative. It also appears to match with earlier descriptive analysis that has shown that only 78 percent and 66 percent of employers and employees, respectively, reported having disabled persons among their workforce, thus indicating that not all firms were abiding by the 5 percent stipulated by Law 39/1975. Both of the above results are in keeping with discrimination (practiced in its various forms) hindering free competition among individuals, hence productivity.

Employees' response estimation also points to 'freedom of association' yielding positive productivity effects. The respective sub-pillar encapsulated two factors—whether the firm permits its employees to freely participate in a union, and whether such membership requires prior authorization. This result is in line with other empirical findings. Clark 1980 indicates that union membership, and its accompanying union monitoring of managerial

[50] However, literature has been far from conclusive on the productivity effects of social security. Other views hold that productivity effects may be positive as health coverage promotes healthier workers and lowers absenteeism, as pensions provide workers with security against old age hazards, and as workers perceive benefits granted under their firm's social security scheme to be an added bonus,. Moreover, with an effective social security, workers may realize that their own contribution constitutes good investment towards a healthier life and better future, thus motivating productivity increases.

[51] Although it was inconclusive with respect to "access to top management positions."

practices, tends to reduce X-inefficiency.[52] Moreover, it is often associated with reduced labour turnover (quit rates have been found to be lower in firms with higher union membership so that increased firm-specific human capital can raise productivity (Freeman 1976 in Machin 1990, 480)).

We further note that, in the employees' response equation, both capital intensity and certification were statistically significant and yielding positive productivity effects.[53] The first of these results complies with the findings of Fryges (2005). One possible explanation is that capital intensity translates into the availability of more physical capital for each worker to perform job tasks, thus promoting productivity. Higher capital intensity also tends to augment workers' possession of managerial skills, particularly in developing countries where they are often in shortage, thus easing the process of decision making and/or reducing the degree of direct management required per unit of output (Humphrey 1968). The certification result is quite telling both in terms of the range of certificates alluded to in the questionnaire (section II.3.e) and of its signaling that accreditation may indeed help raise labour productivity, and, perhaps, also total factor productivity. It also ties with the descriptive analysis presented in section II.3.a where around a quarter of the sample firms reported having a fair-trade label which may indicate their adherence to core labour standards.

With reference to dimensions of *pillar two (employment and income opportunities),* neither of the dimensions of wage adequacy nor job-related training proved to be statistically significant under either employers' or employees' response estimations.

Employees' response estimation for dimensions of *pillar three* indicates that availing a first aid kit and a fire extinguishing unit on the work site yields favourable productivity effects. Although other workplace characteristics (such as potable water, lighting and ventilation) did not prove to be statistically significant in the estimated equation, yet the significance of the above variable exemplifies how such characteristics may promote employees' health, wellbeing and productivity. These findings are further corroborated by full employee confirmation of the availability of both facilities on their work site (as presented in the descriptive analysis in Section II.3.b).

[52] Included in X-inefficiency are wasteful expenditures such as maintenance of excess capacity, luxurious executive benefits (often termed 'organizational slack'), political lobbying seeking protection and favourable regulations (OECD Glossary of Statistical Terms available on <http://stats.oecd.org/glossary/index.htm>).
[53] Only the former is statistically significant under the estimation using employers' responses.

Employees' response estimation further shows the sub-pillar of sick and maternity leaves to be statistically significant while bearing a negative sign. One explanation is that although sick leaves are originally intended to allow for a speedy recovery of workers towards promoting their productivity, yet their abuse may raise absenteeism and yield negative effects instead. This is further underscored by the fact that absenteeism has been identified as a major constraint on labour productivity in Egypt's apparel industry (with a rate as high as 10 to 12 percent of the industry workforce on normal days, and 15 to 18 percent on pre-seasonal days (Amcham 2009, 2)). Perhaps stronger firm-level administration may mitigate such negative productivity effects (Scheil-Adlung and Sandner 2010).

Under the employers' response estimation for dimensions of the same pillar, a negative effect on labour productivity is detected for working time flexibility and repetitive strain. Using cross sectional survey data for Swiss enterprises, Arvanitis (2003) has a similar finding with respect to flexibility. Although flexible working time increases employee time sovereignty enabling better arrangement of working life to suit other obligations, hence favourably affecting their productivity (Arvanitis 2003, 5), yet negative effects may set in. Such effects are often associated with flexible working time making face-to-face interaction between work colleagues increasingly more difficult, thus creating volatility in labour relations (Van der Meer and Ringdal 2009,528) and hindering productivity. As for repetitive strain, the result is in line with intuitive negative productivity effects. We note that workers in T&A industry often complain of shoulder, neck, wrist and elbow injuries (especially those engaged in sewing, trimming and ironing operations). In consequence, high worker absenteeism and turnover proves detrimental to their productivity.

In both employers' and employees' response estimation with reference to *pillar four (social dialogue),* the sub-pillars of worker-management dialogue and strikes were both statistically significant. The *worker-management dialogue* variable, encompassing the presence of a worker council in the firm and the instances in which the firm's top management negotiated worker grievance with the union, was found to have a negative productivity effect. This may well be associated with general employee dissatisfaction with their representation via worker councils perceived as lacking autonomy from the heavily

state-controlled Federation of Trade Unions.[54] Coupled with the positive productivity effect of *strikes*, and the fact that the descriptive analysis in section II.3.d. showed employees identifying 'strikes' among their perceived productivity-drivers, it appears that workers resort to strikes as a second best alternative for lack of confidence in the social dialogue venues open to them.

There appears to be a pressing need to reinforce the grievance-settling role of unions so as to avoid costly strikes. Such a cost varies from loss of production and revenue resulting from work stoppage *to* overhead expenses that continue to be incurred during such stoppage (e.g., warehousing and security expenses) (Criegh 1978,19). It may also include the negative spillovers resulting from the hold-up of firms with forward and backward links to the one affected.

IV. CONCLUDING REMARKS

In terms of decent work attainment, the descriptive presentation of employer and employee responses for *pillar one (rights at work and labour standards)* revealed there is some degree of freedom of association, slight male gender bias in pay, as well as slight bias on the basis of physical disabilities, but none on grounds of religion. However, sample firms did not appear to be free of child or forced labour. For *pillar two (employment and income opportunities),* both employers and employees shared the opinion that wages fell short of sustaining basic worker needs and obligations. For *pillar three (social protection),* working conditions were generally regarded as 'satisfactory', although both employers and employees showed concern over work strain. On pensions, employer responses conveyed an evident misalignment between what was reported on the formality of employment in the sample firms and the pension scheme in place. But employees seemed to value the benefits granted to them in the forms of transportation, daily meals and others. With relevance to *pillar four (social dialogue,* there was a general sentiment that there was some mechanism for dispute resolution in place. However, employees resorted to strikes in order to voice their concerns mainly because they appeared to be dissatisfied with the mechanism in place.

[54] The 2nd of March 2011 marked the launch of the so-called 'Egyptian Federation of Independent Trade Unions (EFITU)' whose motto was to see autonomous unions come to life, with true representation of workers' rights and concerns. One of its founders has specifically voiced the concern that many of the members of worker councils across various firms lack autonomy from the state-controlled Federation of Trade Unions and thus fail to truly represent workers (Al-Shorouq daily newspaper issue of 01/05/2011).

In order of priority, the following pillars were perceived by employees as key productivity-drivers: *two*, *three*, *one* and *four*. It seems plausible that employment and its associated wages and job-training are an immediate employee concern. 'Working conditions, old age security and various forms of benefits granted by their firms,' 'rights at work (freedom of association and others)' and 'social dialogue' followed suit.

Sample firms have also exhibited a relatively high awareness of the importance of both quality and labour-specific certification. Exporting firms have also attested that working with global buyers is a stepping stone towards meeting international labour standards. Moreover, employees perceived exporting as having a particularly strong productivity impact due to its association with greater incentives, improvement in the work environment, provision of job-training (whether technical or managerial) and the acquisition of skills.

The *econometric estimation* has revealed that the promotion of labour productivity relates to the freedom of association, the elimination of discrimination (whether on gender and physical disability bases, as proxies for broader unfair practices in governance), the work environment's fulfillment of basic health and safety standards, and to strikes serving as venues for voicing worker concerns (mostly centered around wages, incentives and potential for profit-sharing). However, results alert that workers could be resorting to strikes in the absence of satisfactory social dialogue, meanwhile cautioning that strikes come at a high economic cost. Results further caution against the possible abuse of sick leaves as a form of social protection, and against flexibility hindering close interaction between workers. They also point to imminent harm to productivity resulting from repetitive strain injuries.

From a DW perspective, it is thus evident that enhanced labour productivity is directly related to increased job satisfaction (or, as termed earlier, "worker security"). Such satisfaction embraces the enjoyment of basic rights, assurance of non-discrimination, abolition of child labour, provision of work environment conducive to health and safety, provision of benefits and incentives, provision of adequate pay and pension scheme, and the availability of a sound venue for voicing employee concerns—all building towards the mobilization of additional human capital in a more efficient production process.

Without committing additional financial resources, it may be possible to raise productivity through the above decent work domains. Creation of cost advantages via higher productivity, with potential profitability increases, may support higher wages and employment generation for beneficiary firms. This may be of paramount importance to

provide incentives to the private sector to raise wages and increase employment while simultaneously addressing social concern. Boosting productivity may also complement the efforts of Egypt's present government to set a minimum wage and to eliminate wage distortions. To this end, the World Bank has recently committed $2 billion in aid[55] to be administered over the present and coming fiscal years for employment generation and technical assistance to various sectors of the Egyptian economy.

Perhaps part of the World Bank committed aid could be channeled towards further T&A adoption of corporate codes of labour practice and formal labour certification, as well as worker training. Formal certification is bound to ensure the elimination of child labour and forms of discrimination detected via survey results. It may also help leverage exports particularly as working conditions are criteria by which factories are judged when global buyers review them for eligibility in their programmes. Worker training, particularly of a technical nature (operator skill and performance, production engineering, production management and quality control systems), continues to be a major hurdle to productivity improvement in the industry (Amcham 2009,6–9).

Investing in conditions that boost labour productivity is a fundamental pillar for enabling private investment, creating jobs and raising standards of living—it is at the core of addressing the underlying causes of deteriorating working conditions towards achieving the goals of Egypt's renowned January 25th Revolution.

[55] Announced in Al-Ahram Daily Newspaper on April 19th 2011.

Appendix 1. Estimation of Labour Productivity Using Aggregate Scores of DW Pillars

Dependent Variable / Independent Variables	*Equation (1) – employers' responses* log (Y/L) $_i$				*Equation (1) – employees' responses* *log (Y/L)* $_i$			
Constant	3.980*** (0.834)	3.439*** (0.676)	4.417*** (0.568)	3.775*** (0.652)	3.219*** (0.609)	3.700*** (0.596)	4.538*** (0.834)	3.751*** (0.616)
ScorePillar1$_i$	-0.008 (0.009)				-0.004 (0.006)			
ScorePillar2$_i$		0.008 (0.006)				-0.001 (0.005)		
ScorePillar3$_i$			-0.023*** (0.008)				-0.018* (0.011)	
ScorePillar4$_i$				0.004 (0.009)				0.007 (0.008)
ScoreExpPerf$_i$	-0.002 (0.003)	-0.001 (0.003)	-0.001 (0.003)				-0.003 (0.003)	-0.003 (0.003)
ScoreCert$_i$	0.005* (0.003)	0.004* (0.002)	0.004 (0.003)	0.004 (0.003)	0.003 (0.003)	0.004 (0.002)	0.007** (0.003)	0.005** (0.003)
DummyLCert$_i$	0.03 (0.305)	0.008 (0.298)	0.182 (0.303)		0.049 (0.333)		0.054 (0.259)	
log (I/L) $_{i-1}$	0.121*** (0.040)	0.087* (0.052)	0.140*** (0.037)	0.102** (0.043)	0.143*** (0.043)	0.104** (0.043)	0.126*** (0.040)	0.104** (0.043)
log (IntenEducL) $_i$								
DummyFDI$_i$	-0.270 (0.222)	-0.110 (0.301)	-0.239 (0.325)	-0.181 (0.263)	-0.197 (0.289)	-0.157 (0.242)	-0.242 (0.252)	-0.186 (0.272)
Firmsize$_i$	-0.100 (0.135)	-0.209 (0.137)		-0.214 0.163		-0.168 (0.131)	-0.077 (0.148)	-0.218 (0.137)
Observations	48	48	48		48	48	48	48
R^2	0.256	0.284	0.275	0.234	0.207	0.229	0.291	0.251
Adjusted R^2	0.118	0.153	0.164	0.139	0.108	0.133	0.161	0.135
F statistic	1.86*	2.16*	2.47**	2.45**	2.09*	2.38*	2.31**	2.17*

Source: Author's estimations.

Notes : *** indicates significance at the 1 percent level, ** indicates significance at the 5 percent level, * indicates significance at the 10 percent level. Standard errors of parameter estimates in parentheses.

Appendix 2. Estimation of Labour Productivity Using Disaggregate Scores of Sub-Pillars

Dependent Variable / Independent variables	*Equation (2) – employers' responses* log (Y/L) $_i$			*Equation (2) – employees' responses* log (Y/L) $_i$		
Constant	4.070*** (0.665)	4.327*** (0.654)	3.048*** (0.410)	3.457*** (0.926)	3.133*** (1.154)	3.192*** (0.492)
ScoreSub-pillars1$_i$						
***Freedom of association**				0.008* (0.005)		
***Physical discrimination**	-0.003* (0.001)			-0.005*** (0.002)		
***Gender discrimination**	-0.006* (0.003)					
ScoreSub-pillars3i						
***First aid and fire extinguishing on site**					0.003** (0.002)	
***Potable water**					0.004 (0.005)	
***Ventilation**					0.001 (0.005)	
***Working time (flexibility)**		-0.003* 0.001			-0.002 (0.002)	
***Repetitive strain injury**		-0.006** (0.003)				
***Pension**		-0.002 (0.003)				
***Sick leave**					-0.010* (0.004)	
ScoreSub-pillars4$_i$						
***Worker-management dialogue**			-0.004* (0.002)			-0.003* (0.002)
***Strikes**			0.005* (0.003)			0.005*** (0.002)
ScoreExpPerf$_i$				-0.001 (0.003)		
ScoreCert$_i$	0.005* (0.003)	0.004* (0.002)	0.003 (0.003)	0.007** (0.003)		0.003 (0.003)
DummyLCert$_i$			0.057 (0.360)	-0.353 (0.237)		0.148 (0.308)
log (I/L) $_{i-1}$	0.107*** (0.040)	0.100** (0.045)	0.138*** (0.044)	0.056* (0.034)	0.161** (0.070)	0.122** (0.050)
log (IntenEducL) $_i$				0.077 (0.202)		
DummyFDI$_i$	-0.286 (0.229)		-0.131 (0.253)	-0.212 (0.166)		-0.109 (0.241)
Firmsize$_i$	-0.092 (0.132)	-0.108 (0.156)		-0.185 (0.136)	0.115 (0.163)	
Observations	48	48	48	48	48	48
R^2	0.301	0.312	0.264	0.457	0.290	0.274
Adjusted R^2	0.194	0.206	0.151	0.322	0.159	0.163
F statistic	2.800** [T]	2.951**	2.337**	3.380*** [T]	2.213*	2.456**

Source: Author's estimations.

Notes : [T] in the employer and employee response equations with sub-pillar2$_i$ variables, no statistical significance was established.
*** indicates significance at the 1 percent level, ** indicates significance at the 5 percent level, * indicates significance at the 10 percent level. Standard errors of parameter estimates in parentheses.

Across DW pillars, we also tested all of the following sub-pillars: pillar one - "availability of an internal mechanism for dispute resolution," "forced and child labour," pillar three –"water," "lighting," "ventilation, "formality of employment," "pension eligibility of retired workers;" pillar four – "resorting to external arbitration when necessary."

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