

**DO INTERNATIONAL TRADE AND LABOR STANDARDS
AMELIORATE SYNCHRONOUSLY? ESTIMATION OF LABOR
DEMAND ELASTICITY IN TURKEY¹**

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ABSTRACT

The broad objective of this paper is to examine the challenges faced by the Turkish labor market in the aftermath of the so-called trade liberalization period, particularly questioning whether a prominent change in pattern can be observed in labor demand elasticity. In the study, labor demand elasticities in the exporting and import-competing sectors are estimated based on research undertaken between the years 1984 to 2001. Thus, the study looks for a vigorous link, or a dichotomy - if there is - between the strategies to stimulate international trade and the demand for labor.

Keywords: International trade, Labor standards, Demand elasticity.

JEL Classification: F16, J01, J08

**ULUSLARARASI TİCARET VE ÇALIŞMA KOŞULLARI EŞ
ZAMANLI OLARAK GELİŞME GÖSTEREBİLİR Mİ? TÜRKİYE'DEKİ
İŞGÜCÜ TALEP ESNEKLİĞİNİN TAHMİNİ**

ÖZET

Bu çalışmanın geniş anlamdaki amacı, Türkiye'de ticaretin serbestleştirilmesinin ardından işgücü piyasasının karşı karşıya kaldığı zorlukları incelemek, bu bağlamda özellikle ticarete konu olan sektörlerde işgücüne yönelik talep esnekliğinde değişiklik yaşanıp yaşanmadığını sorgulamaktır. Çalışmada 1984-2001 yılları arası dönem ele alınarak, ihracatçı ve ithalat-rekabetçi sektörler için işgücü talep esnekliği hesaplanmıştır. Böylelikle, uluslararası ticareti arttırmaya yönelik stratejiler ile işgücüne yönelik talep arasında bir bağlantı veya dikotomi olup olmadığı ortaya konulmaya çalışılmıştır.

Anahtar Kelimeler: Uluslararası ticaret, İşgücü standartları, Talep esnekliği.

JEL Sınıflandırması: F16, J01, J08

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1. Introduction

As the current process of interaction and interconnectivity between nations gathers speed, an increasing debate on the inequalities between countries and their effects on people appear. These concerns lie at the heart of politics, especially in terms of the means of globalization influencing democracy and social justice. The means of globalization are being formed through policies, rules and institutions which govern its course, the values which inspire its actors, and their capacity to influence the process. Society needs a fair globalization which creates opportunities for all and makes everyone better off. Yet there is growing concern about the direction globalization is currently taking, especially in terms of its consequences related with different segments in the society and the size of the gap between them. The burden globalization is claimed to be levying over the shoulders of women, children, workers, or the potentially exploitable ones in general, seems to be the heaviest one. In this context, among a number of channels through which globalization exerts its power of influence, this study focuses on the increase of international trade and its impacts on the labor market.

In this paper, the major goal is to examine how labor demand elasticity on one hand, and the policies of international trade on the other hand evolved in Turkey as the Turkish economy took steps to integrate to the world economy through the liberalization of trade. By estimating labor demand elasticities for selected industry level data, the indirect influence of trade liberalization on the labor market, is analyzed by assuming that higher demand for labor would eventually boost higher labor standards. Thus, this study can act as a step to further investigate the nexus between labor standards and increased trade in Turkey. A number of selected indicators to depict the dynamic structure of international trade and the characteristics of the labor market is focused in order to narrow the scope. More precisely, export, import, export/import coverage and import penetration ratios (i.e. imports/GDP) and barriers to trade (i.e. nominal import tariffs) are investigated, as the trade indicators, while for the labor market indicators, real wages, unionization levels, minimum wage levels, hours worked and productivity levels are also examined. Time span is through the years 1984 to 2001.

This study is an attempt to contribute to the existing literature by estimating labor demand elasticities for selected exporting and import-competing industries in Turkey for the years between 1984 and 2001. We question whether trade liberalization has resulted to an increase in labor demand in these industries, which could eventually help achieving higher labor standards. Previously, labor demand using Turkish plant-level data is empirically tested by Krishna et al (2001: 391-409); however, their analysis covers only a 3-year period (1984 to 1986) which can provide estimations for the initial stage of the liberalization period of the Turkish economy. Thus their findings would not reflect the necessary data to discuss the whole trade liberalization period.

The remainder of the study is as follows. In the second part, earlier literature and the contribution of the study are proposed. The third part presents the setting of the study. Overarching research question is put forth in the following part. The fifth part introduces the data and methodology used to answer this question. The findings of the analysis are presented in the sixth part. The final part includes the conclusion, some policy suggestions and a brief discussion for possible further research.

2. Earlier Literature and the Contribution of the Study

While there is an extensive literature on international labor standards, much of its recent focus has been on evaluating the appropriateness of linking labor standards with trade. Some recent surveys include but are not limited to those (Brown et al, 1996: 227-280; Stern, 2003:1-24; Maskus, 1997; Hepple, 2006). Examples to other studies are Brown (2001) who finds that linking trade and labor standards can slow the process of trade liberalization; Limao (2005) who considers a case in which the international community has found it relatively easy to achieve agreement on tariffs but has had greater difficulty finding a self-enforcing agreement on labor standards. Stern denotes the theoretical study of Srinivasan stating diversity of labor standards between nations will reflect differences in factor endowments and levels of income, he further mentions that such diversity is consistent with the case for free trade (Stern, 2003: 6; Srinivasan, 1995:1-43). In his context, it is necessary to have arrangements for international income transfers and domestic tax/subsidies, if minimum international labor standards are to be attained.

The empirical studies on the effects of variations in labor standards across countries in determining trade performance by the volume of trade, competitiveness, and comparative advantage is surveyed by Brown (2001:116). Aggarwal (1995: 5) examines the linkage of labor standards and the patterns of import in selected countries Zadek and Mc Gillivray (2008: 72) mention in their study that low wages and poor working conditions are sources of international competitiveness for businesses. On the other hand, defenders of labor standards propose that responsible competitiveness strategies are the key to creating tomorrow's sustainable global economy. Barry and Reddy (2007:558) argue that introducing labor standards reduces the advantages of individuals by impeding them from entering into trade contracts through which they expect to enhance their well being. They further claim that the premature imposition of labor standards can act as an obstacle to the development process (Barry and Reddy, 2007: 560).

Closer to the scope of this paper's research, there is a significant body of literature on how large the adjustment costs of trade liberalization are. A profound survey of studies on adjustment costs of trade liberalization in developing countries is provided by Matusz and Tarr (2000) and by Krueger (2004). The authors state that in most studies manufacturing employment increases after trade liberalization. The estimations of adjustment costs suggest that they tend to be of moderate size.

Another strand of literature is related to the distributional aspects of trade liberalization. A significant portion of potential costs is related to the influence of trade reforms on the labor market. There are several potential channels of influence of trade shocks on the labor market. Free trade is expected to change relative prices, and hence redistribute resources to more efficient use. That would affect output composition, and in turn, demand for labor. Changes in demand for labor transmitted through labor market would shift employment and income distribution between sectors. A decrease in an industry tariff is associated with higher wages in the industry for Poland (Goh and Javorcik, 2004). Lower tariffs are correlated with higher inter-occupational and inter-industry inequality in poorer countries (Milanovic and Squire, 2005).

3. The Setting

Global merchandise trade increased around seven times, while the world's active workforce has more than tripled to roughly 3 billion in the last three decades. With these developments, it is not surprising that trade policy makers and trade promotion authority consider the inclusion of labor rights in future trade interactions. This makes it worth examining the linkage between international trade and labor market regulations.

The implications for involvement in liberalizing trade environment vary between countries, largely depending on their stage of economic development. On the other hand, labor standards are complex and may differ from country to country depending on the stage of development, per capita income, as well as political, social, and cultural conditions and institutions. While the economists still get stuck in the debate over the degree of liberalization of trade, there appears to be a substantial international consensus that core labor rights should be globally recognized and protected, though it may be difficult to distinguish unambiguously between universally agreed labor standards and those standards that depend on national circumstances. There is far less consensus over means of ensuring such protection of labor rights; however, national and international efforts towards labor market regulations indicate increasing interest on the issue.

Labor standards affect workers' basic rights and freedoms, enhance dignity and promote well-being, and so have an effect on the social, political and financial capital of workers (Cotton et al., 2005: 617-632). As a result of higher labor standards, developing country workers, especially low wage workers are likely to benefit with an improvement in their incomes and freedoms. At this point it should be noted that complementary policies and transitional programs are required in order to give markets and social institutions time to adjust. Otherwise, it is possible that legislating higher standards might result in perverse outcomes for some workers. Increases in the minimum wage, benefit those that receive it, but harm those who might be laid off by it.

In competitive open economies, resources need to be reallocated from less to more efficient uses. Pressures for international harmonization of labor standards arise in the context of increased trade between countries with large disparities in wages and in the quality of workers' standards of living. The legitimacy of the global trading system is damaged by the perceptions of unfair labor practices in developing countries. It is commonly argued that the developed countries should seek to enforce policies that improve labor market performance for the poor and unskilled. How can such arguments be interpreted to the investigation of the prospective link between regulations on international trade and labor standards? Labor rights activists argue in favor of some link between the International Labor Organization (ILO) and the World Trade Organization (WTO) on labor issues in order to provide the ILO with enforcement power beyond its current practice of monitoring and providing members with advice and technical support.

ILO can be considered as the major international regulator of labor market conditions in the global context. The organization assumes a duty of three forms by definition of rights, especially through adoption of ILO Conventions and Recommendations; measures to secure the realization of rights, especially by means of international monitoring and supervision but indeed not by imposition of trade sanctions; and assistance in implementing measures, particularly through technical cooperation and advisory services. Basic labor rights have been articulated by the ILO in 1998 in the Declaration on Fundamental Principles and Rights at Work OECD (2000: 12-13), which calls upon its member countries to comply with the four principles, regardless of whether they have ratified the relevant conventions. The ILO's four core labor standards cover: i. freedom of association and the right to collective bargaining; ILO (2000: 20)¹ ii. elimination of forced or compulsory labor;² iii. effective abolition of child labor³; and iv. elimination of discrimination in respect of employment and occupation⁴.

Before proceeding with analyzing the impact of liberalized trade on the labor standards, it might be meaningful to take a look at where Turkey is in terms of international labor standards. While doing this, covering the details of the evolution

¹ The ILO Convention on Freedom of Association and Protection of the Right to Organize, No.87, 1948 is always cited together with the Right to Organize and Collective Bargaining Convention, No.98, 1949. 1998 Declaration on Fundamental Principles and Rights of Work, this standard is defined in ILO conventions 87 and 98, 2000, p.20.

² The Abolition of Forced Labor Convention, specifies that forced labor can never be used for the purpose of economic development or as a means of political education, discrimination, labor discipline, or punishment for having participated in strikes.

³ The ILO Minimum Age Convention, No.138, 1973, set the goal of elimination of child labor, and the basic minimum age for employment or work (in developing countries at 14 years of age or the end of compulsory schooling, whichever is higher; and 15 or the end of compulsory schooling for developed countries). In June 1999, I Recommendation No.190, which target the worst forms of child labor as a matter of urgency (Asian Development Bank, 2006).

⁴ The first binding international instrument to be adopted is ILO Equal Remuneration Convention, No.100, 1951, along with its accompanying recommendation No.90.

of the Turkish labor market is avoided. Instead, fundamental characteristics of the industrial relations for the time span taken into consideration are presented.

The passage of the Trade Union Acts of 1947 and particularly the enactment of collective bargaining legislation with the right to strike in 1962 labor relations has been important in Turkish Law. The ultimate goal was to adapt and apply labor law to the core labor standards of ILO in terms of labor market regulations (Dereli, 2006:72). In May 1983, new laws were adopted, namely Act No. 2821 on Trade Unions and Act No.2822 on Collective Agreements, Strikes and Lockouts. Together with Act No. 1475 dealing with the individual employment relationship, these two acts, as amended in 1986, 1988, 1995 and 1997, established the legal environment of industrial relations in Turkey (Bronstein, 2001:21).

With few exceptions, this legislation covered all manual and white-collar workers in both the public and private sectors; however, civil servants and certain employees of the State, including the newly created 'contract worker' category in the economic enterprises, were denied the right to unionize and bargain collectively (Bronstein, 2001:21). This legislation also aimed at creating a centralized trade union structure and to reduce the number of unions.

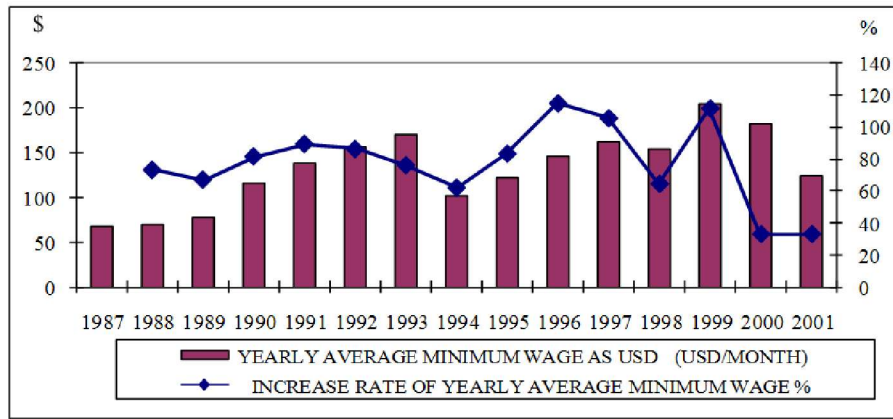
By 1990, the 750 unions in existence a decade earlier had decreased to 69 unions and of these only 41 seemed to meet the minimum ten percent representativity requirement to gain bargaining status. By July 1996, there were 92 unions in Turkey and of these only 48 met the minimum ten percent requirement as well as fifty per cent of the employees in the establishment requirement as the precondition for acquiring bargaining rights. Although the union structure was centralized at industry level, the focus of bargaining was reduced to local levels, these precludes have caused criticism from ILO of their allegedly violating trade union freedoms of employees' right to form and to be a member of their choosing. Detailed prescriptions on mediation, strikes and lockouts are other features of the post-1980 system of industrial relations. To be considered legal, strikes and lockouts must have been called by the competent parties and conducted in conformity with the rules; their purpose must be solely work-related. General strikes, sympathy strikes, politically-motivated strikes and lockouts, work slowdowns, sit-ins, and similar forms of concerted action were all illegal. Compared to the 1963 legislation, Act No. 2822 expanded the scope of strike restrictions. For those establishments and activities where strikes and lockouts were prohibited, Act No. 2822 prescribed a compulsory arbitration mechanism to follow the mediation process.

Besides the core standards, there are other labor standards that are less universally accepted (Stern, 2003: 12) and that are related to 'acceptable conditions of work,' which include: minimum wage; limitations on hours of work; occupational safety and health in the workplace. Unionization and collective bargaining ratios are also considered as the labor standards. Minimum wage is important for the workers' unions because they take it as a base from which they try to attain nominal wage,

meaning that they are using it as a bargaining power during the collective agreement. Setting a minimum wage reduces the wage gap, causing a spillover effect on the labor market.

The decision of the European Union (EU) government heads on 10 December 1999 in Helsinki to accept Turkey as a candidate for EU membership brought the compatibility of Turkish legislation with that of European standards to the foreground of the Government's agenda. A National Program was published in 2001 in which the Government of Turkey committed itself to harmonizing national norms and practices with those of the European Union. In an effort to amend certain sections of the 1982 Constitution, in particular those articles pertaining to human rights and basic freedoms, Act No. 4709 was passed on 3 October 2001. A new job security law was adopted in August 2002.

Figure 1: Average Minimum Wage in Turkey by Years, 1987-2001 (in USD)



Source: The figure is illustrated based on the authors' calculations using data from Labor Statistics, Ministry of Labor and Social Security Republic of Turkey: 1987-2001.

As can be seen in Figure-1, in Turkey, through the years 1987 to 2001, a comparative pattern between the yearly average minimum wage as USD and the increase rate of yearly average minimum wage can be observed except for the years 2000 to 2001. This difference can be explained by the decreasing increase in the minimum wage.

In the past two decades, wages of low-skilled workers in many industrialized and developing countries have been growing at a slower pace than wages of high-skilled workers. Brown (2000), who has surveyed the relevant empirical evidence on wages and trade in the industrialized countries, found that that there is a preponderance of evidence suggesting, for the US at least, that trade was not the major reason for the observed widening of the skilled/unskilled wage differential. The literature suggests that biased technical change rather than trade may have

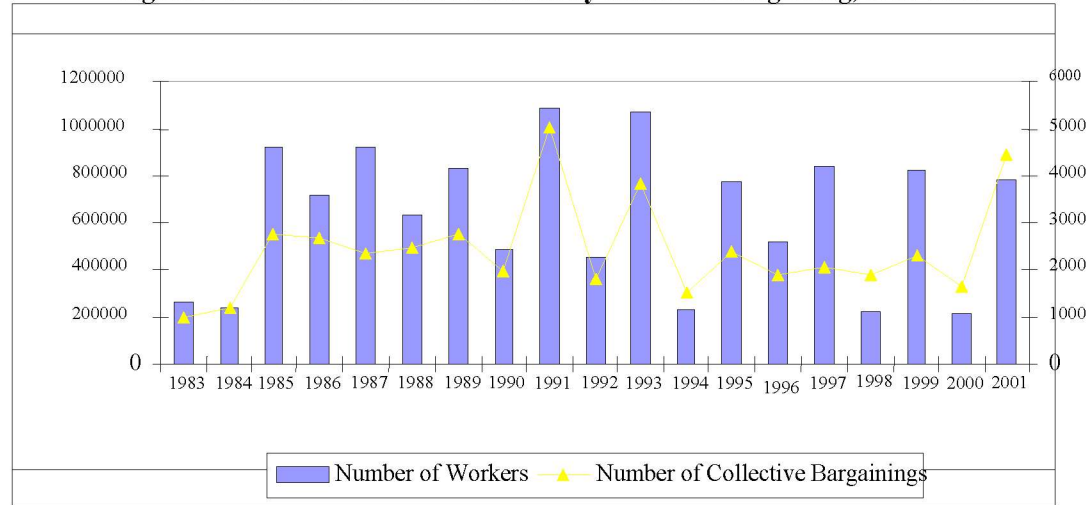
increased the demand for skilled workers, thus widening the US wage gap. This further suggests that, since imports from developing countries account for a relatively small proportion of total industrialized country imports, trade may more generally have a limited impact on the wages of unskilled workers in the industrialized countries (Stern and Terrel, 2003: 9).

Freedom of association and collective bargaining stands as another indicator of labor standards. Related Conventions No. 87 and 98 of ILO are referred to as the twin conventions on freedom of association and collective bargaining. They give workers the right to form and join organizations of their own choosing and to promote and defend their economic and social interests. Freedom of association is considered the most fundamental of labor standards within ILO, was thought vital enough that all member States could be subject to complaints on the principle they embodied, regardless of ratification status. 1980 to Present; industrial relations legislation was modified considerably by the National Security Council (transitional military regime of 1980-1982), and Act no. 2821 on Labor Unions and Act no. 2822 on Collective Agreements Strikes and Lock-outs were adopted in 1983 for Turkey. Social dialogue efforts try to bring Turkey's industrial relations legislation into conformity with ILO freedom of association norms have preoccupied the country's legislative agenda for at least twenty years now. Settlement of the matters of grave concern both for the ILO and the actors of the Turkish Industrial relations system explained in the above is also a precondition for the opening of negotiations over the chapter on Social Policy in Turkey-EU relations.

It is likely that the ILO authorities as well as the social partners will still keep their reservations on some matters (e.g. the unsettled issue of personnel reform in the public sector, the ongoing denial of collective bargaining rights for a large segment of public servants; for bargaining authorization, the precondition of being affiliated with one of the most representative confederations, the maintenance of notary public approval in resignations, strike bans in some sectors not deemed to fall into "essential services" in the strict sense, like banking, urban transportation, etc.), and try to open of negotiation over the equal rights for everyone.

In addition, Article 90 of the 1982 Constitution in May 2004 mentions that 'in disputes arising from the conflict between ratified international agreements on fundamental rights and freedoms and national legislation on corresponding topics, the provisions of international agreements shall prevail', (Dereli, 2006: 53-55).

Work by a tripartite task force was in progress through most of 2002 to overhaul the whole labor law, including the Labor Act No.1475, Trade Unions Act No.2821, and Collective Agreements, Strikes and Lock-Outs Act No. 2822, with a view to modernizing the labor law and making it compatible with ILO standards and EC law (Dereli, 2006: 21).

Figure 2: Number of Workers Covered by Collective Bargaining, 1983-2001

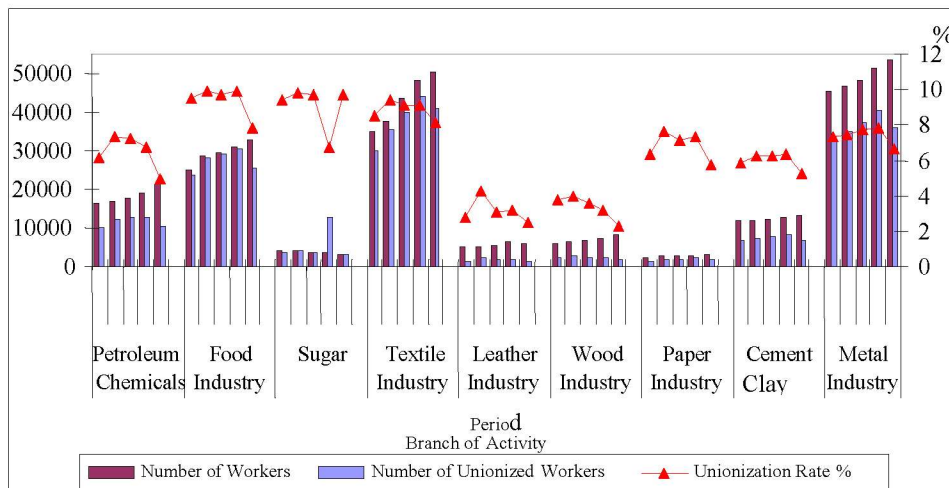
Source: The figure is illustrated based on the authors' calculations using Labor Statistics, Ministry of Labor and Social Security Republic of Turkey: 1983-2001

When the number of workers covered by collective bargaining in Turkey is concerned, the most dramatic increase is observed in the year 1991 which is followed by the most dramatic decrease immediately after (see Figure-2). The possible reason behind this can be the acceleration influence of increasing number of strikes during the collective bargaining, but at the same time the unionized workers being laid off the following year.

While conducting the research of this paper, the scope is narrowed to manufacturing sector in general, and the petroleum chemicals, food, sugar, textile, leather, wood, paper, cement and metal industries in particular. There are mainly two reasons for choosing these product groups: i. they contain the main commodities which are either among Turkey's major imported goods or the ones subject to intra industry trade. In other words, when these industries are taken into account it becomes possible to consider the effect of changes in trade policy. ii. they are also appropriate for tracking labor issues since they are labor intensive sectors. Thus, the choice of the product groups is consistent with the focus of the study.

For the number of workers and the unionization rate according to the branch of activity, the unionization rate for all the industries taken into account exhibit a decreasing trend, while metal, textile, food and petroleum industries stand out with the highest number of unionized labor (see Figure-3).

Figure 3: Number of Workers and the Unionization Rate, 1988-2001



Source: The figure is illustrated based on the authors' calculations using Labor Statistics between 1988-2001, Ministry of Labor and Social Security Republic of Turkey

4. Data and Methodology

The overarching question of this study is whether there is a dichotomy between the strategies to stimulate international trade and the evolution of the Turkish labor market in the aftermath of the liberalization period. In order to answer this question, the nexus between increasing international trade and the labor demand is examined.

In this context, the changes in employment as of labor demand side due to changes in trade policy between the years 1984 to 2001 are analyzed. Labor demand elasticity with respect to output, is the key determinant of employment in the labor market. The increased openness of an economy is likely to result in an increased demand for labor by exporting sectors and in a decrease in labor demand in import-competing sectors. Domestic industry protection measures in general, or tariff increase in particular, would bring the opposite results.

Trade liberalization affects labor demand through two basic channels. First, the more open the economy is, the more it is going to be exposed to external shocks. Hence, one would expect that shocks are more frequent, and their magnitudes are larger in open economies. Second, the increased competition coming from foreign firms operating on product markets, as well as from domestic firms, makes firms in an open economy to increase the speed of adjustment in order to minimize their costs and to increase profits. As a result, one would expect elasticities to become higher after liberalization. One would also see higher elasticities in more liberalized, or open to trade, sectors as compared to less open to trade sectors.

The methodology by Krishna et al, (2001: 391-409) and Akhmedov et al (2005) is followed and the following form of labor demand equation is estimated, treating tariffs and wage as endogenous:

$$\ln(L_{it}) = \alpha_1 * \ln(L_{i,t-1}) + \alpha_2 * \ln(Q_{it}) + \alpha_3 * \ln(W_{it}) + \beta * X_{it} + \sum_{1984}^{2001} \lambda_t * d_t + \mu_i + v_{it} \quad (\text{Eq.1})$$

where $L_{i,t}$ is the number of workers employed at the enterprise at period t , $Q_{i,t}$ is the sales of enterprise i during year t , $W_{i,t}$ is the average wage at enterprise i in year t , X is a set of macroeconomic variables (i.e. nominal rate of protection (import tariffs), import penetration ratios, unemployment and industrial output index) and d_t is the time dummies which are used to capture the effect of the real exchange rate fluctuations observed within the period.

We use *Arellano-Bond* estimation procedure for the following reasons: i. tariffs and wage are treated as endogenous and because causality may run in both directions, these regressors may be correlated with the error term, ii. fixed effects may be correlated with the explanatory variables, iii. the presence of the lagged dependent variable gives rise to autocorrelation, iv. the panel dataset has a short time dimension and a larger industry dimension ($N > T$).

To solve problem i and problem ii, one would usually use fixed-effects instrumental variables estimation (two-stage least squares or 2SLS), which was what we tried first. However, the first-stage statistics of the 2SLS regressions showed that our instruments were weak. With weak instruments the fixed-effects estimators are likely to be biased in the way of the OLS estimators. Therefore, we decided to use the Arellano – Bond (1991) difference GMM estimator, first proposed by Holtz-Eakin, Newey and Rosen (1988). Instead of using only the exogenous instruments, lagged levels of the endogenous regressors are also added. This makes the endogenous variables pre-determined and, therefore, not correlated with the error term in equation (1).

The first-differenced lagged dependent variable (problem iii) is also instrumented with its past levels. Finally, the *Arellano – Bond* estimator was designed for small-T large-N panels (problem iv)¹.

The trade indicators examined are obtained from Turkish Statistical Institute (TÜİK), Undersecretariat of Foreign Trade (DTM) and World Trade Organization (WTO). For the labor market indicators we analyze real wages, unionization levels, minimum wage levels, hours worked and productivity levels through industry level data. The majority of labor data is obtained from Turkish Statistical Institute (TÜİK), Ministry of Labor and ILO statistics. The data from nine three-digit SITC industries with both exporting and import-competing product groups are chosen. This selection is based according to the estimates of (directions of) protection change (changes in protection in tariff). The product groups which are found out to have performed a decrease eventually are chosen. Therefore, the industries which have experienced trade liberalization are considered in the analysis.

5. Findings

No significant link between labor demand and higher trade openness is found, neither through the indirect effect of output changes and directly through the influence of tariffs and import penetration ratios. This suggests that the adjustment costs to trade liberalization in the form of changes in industrial labor demand should not be high.

The wage labor demand elasticity is found to be -0.31 for the total sample which means that a 10% increase in real wage would diminish labor demand by around 3%. The labor demand elasticity with respect to output equals 0.43, meaning that a 10% increase or decrease in output would cause a 4.3% increase or decrease in labor demanded.

¹ We are grateful to two anonymous referees for their valuable comments on including theoretical and empirical reasoning about the panel data analysis performed and the lagged variables.

In addition to the indirect influence through output decrease or increase, trade policy changes can affect demand for labor directly. To capture the effect, the sensitivity of demand for labor to trade openness indicators is estimated by including (lagged) import tariffs and import penetration ratios in labor demand equations as Akhmedov et al (2005) did for the Russian industrial sector in their study. It turns out that both indicators are statistically significant for the whole sample, with higher import tariffs being associated with higher (lagged) demand for labor and higher import penetration – with lower demand for labor.

In sum, the analysis of the impact of trade reforms on labor demand elasticities using Turkish industry level data over a period spanning major trade reforms in the Turkish economy suggests that the nexus between trade liberalization and labor demand elasticities may be empirically quite weak; it was not possible to find statistically and economically significant relationship between these variables. This non-responsiveness of labor demand elasticity can be explained by a variety of frictions that affect the labor demand decisions of firms. Yet, this would be the focus of another study. Suggestions for further research are provided in the conclusion part.

Table 1: Labor Demand Elasticity Estimations

Dependent	Entire Sample
Ln (employment)	0.356 (7.90)***
real wage	-0.31 (15.95)***
lnport tariffs (lagged)	0.806 (4.73)***
Ln (real output)	0.43 (5.38)***
Import penetration ratios	-0.119 (4.36)***
Unemployment	-0.013 (2.66)***
Industrial output index	0.001 (1.59)**
Year 1984	0.128 (6.1)***
Year 1985	0.119 (5.34)***
Year 1986	0.187 (11.21)***
Year 1988	0.21 (9.48)***
Year 1989	0.259 (6.09)***
Year 1990	0.263 (8.63)***
Year 1991	0.252 (5.26)***
Year 1992	0.33 (6.38)***
Year 1993	0.381 (8.41)**
Year 1994	0.301 (5.65)***
Year 1995	0.312 (6.59)***
Year 1996	0.296 (4.78)**
Year 1997	0.269 (2.61)*
Year 1998	0.342 (7.60)***
Year 1999	0.308 (7.74)***
Year 2000	0.277 (4.43)***
Year 2001	0.264 (3.92)***
Constant	-0.06 (17.21)***

Note: Absolute values of *t*-statistics are in parentheses.

*** significant at 1%, ** significant at 5%, * significant at 10%.

6. Conclusion and Extensions for Future Research

The link between trade and labor markets has received considerable attention by both trade and labor economists. Therefore, working on this field is by no means like writing on the tabula rasa. In order to deviate from the existing literature, this study covers a longer time period than the previous studies for the Turkish economy and the focus is solely on the trade liberalization effect over labor standards through the estimation of labor demand elasticities. Working with Turkish industry-level data for nine sectors, the product groups are determined as either exporting or import-competing, more precisely as the sectors which could be considered as the ones most probably to be affected from trade liberalization measures in the period in question.

In this context, due to the opening of the Turkish economy after 1983, it is assumed that the external shocks are more frequent and larger in magnitude. It is

also assumed that the increased competition due to the entrance of foreign firms makes firms in an open economy to increase the speed of adjustment in order to minimize their costs and to increase profits. As a result, one would expect elasticities to become higher after liberalization. One would also see higher elasticities in more liberalized, or open to trade, sectors as compared to less open to trade sectors. Also, it is expected to observe an increased demand for labor in exporting sectors and a decreased labor demand in import-competing sectors, due to output changes.

No significant link is found between labor demand and higher trade openness, neither through the indirect effect of output changes and directly through the influence of tariffs and import penetration. This suggests that the adjustment costs to trade liberalization in the form of changes in industrial labor demand should not be high. Investigating the evolution of labor standards through the years 1984 to 2001, no significant improvement is reached. Taken together with the econometric estimation results, it is not possible to state that the liberalization of trade has contributed to the labor demand in Turkey. This finding is consistent with the earlier empirical study for Turkey by Krishna et al (2005). Thus, it is not possible to link this finding with the evolution of the labor standards in Turkey after liberalization.

Although this conclusion seems to be discouraging for deriving related studies, it is not actually. An extension for future research might be the investigation of further trade liberalization due to the WTO and CU accessions of Turkey. By doing so, it might be possible to estimate the influence of tariffs, direct and through output, on labor demand for various industries. Such a study would be saying much on the significant influence of tariffs on labor demand – if there is – and the results would show the changes after their cancellation due to the commitment to these international organizations.

With the view to bringing the Turkish labor system into conformity with the ILO, the effectiveness of labor law and practice in Turkey conform the European standards on labor (which go hand in hand with ILO standards) as well. This makes it different than solely a commitment to ILO, since this international organization does not have stringent prominent sanctions against disobeying members. On the other hand, being a member to the EU requires the relevant measures to be taken. However, ongoing adjustment process to the EU should not be just for the sake of Turkey's accession. The essence is that the conditions of the Turkish labor force must be improved while modernizing the labor law and making it compatible with ILO standards and EC law. Thus, bringing this issue to table would also be a contribution to the existing literature.

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