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Extent of Tariff Pass-Through to Agricultural Prices and Wage in Urban and Rural Area in Iran

Mohammad Ghahremanzadeh*, Samaneh Khalili Malakshah and Esmaeil Pishbahar
Agricultural Economics Department, faculty of Agriculture of University of Tabriz
*E-mail: ghahremanzadeh@tabrizu.ac.ir

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Abstract

Because of critical dependence of households to agricultural in terms of income and consumption identifying the effects of agriculture trade liberalization in developing countries is necessary. Effect of trade liberalization policies with respect to the factors that influencing price transmission from world markets to domestic market and wages are different and a similar trade policy will likely have different results in different countries. The aim of this study is investigate extent of tariff pass-through to prices of major groups of agricultural products and wages in different sector of country using pseudo-panel data in 2005- 2014. Results indicate an incomplete tariff pass-through for different groups of agricultural products. Also, tariff pass-through is different in urban and rural area and different regions. Results show different effect of agricultural tariff change on skilled and unskilled wages in urban and rural during the study. In addition, results show that sensitivity of skilled wage in both regions, particularly in rural to changes in tariff is more than unskilled wage. It is important for policymakers to consider market price transmission mechanism, infrastructure and regional wages changes and wage inequality from tariff changes.

Keywords: Tariff Pass-Through, Agricultural Prices, Wage, Urban and Rural Regions.

Introduction

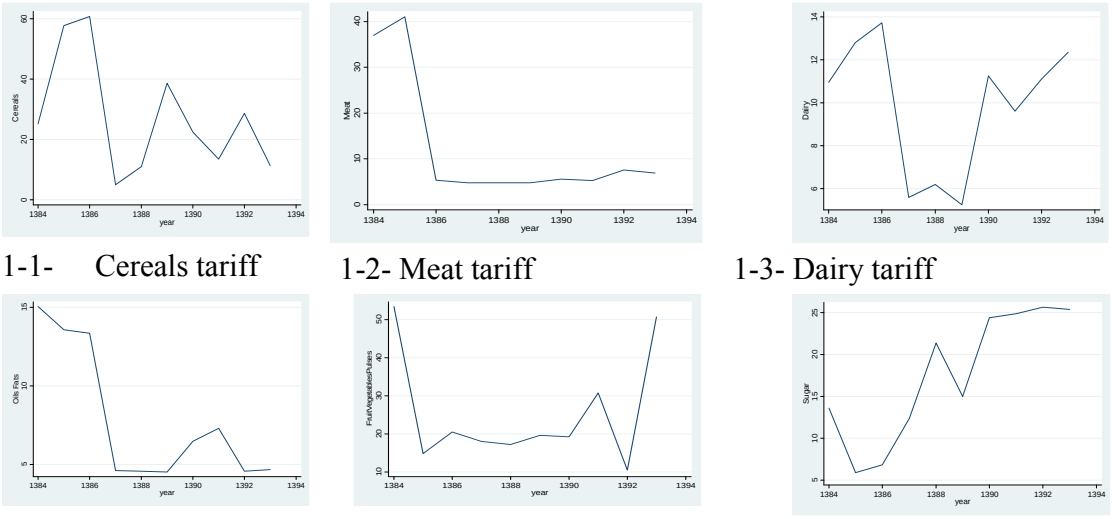
Agriculture trade liberalization is one of the most important political reforms because of critical dependence of households to agricultural in terms of income and consumption (Talukder and Chile, 2014).Trade affect households from two major ways: indirectly, effect of trade depend on factors such as growing, inequality, initial levels of development, international movement of capital, labor migration, technological advances and complementary policies. Directly, trade affects households through changes in relative prices that households faced as consumers and producer (Winters, 2000 and Winters et al., 2004). Certainly trade liberalization can have different effects on individuals and households due to price transmission mechanism and sources of income (Porto, 2006). In the words of Bardham (2007) employees of free market and official markets are beneficiaries and services and public resources consumer may be greatly suffer from inappropriate policy of open markets without institutional and infrastructural adjustments.

One of the main important tools for trade policy is tariffs. Tariff reduction could reduce domestic prices of agricultural products and could increase consumer welfare, if market able transfer border price changes to consumer, but market failure lead to incomplete tariff pass-through. For example Nikita (2009) showed that tariff pass-through to agricultural prices are almost 33% and for industrial goods are 27%. Cherkaoui et al. (2011) found that trade liberalization leads to decrease in consumer prices for agricultural and industrial products. Also in this study, tariff pass-through to domestic prices of agricultural products and industrial goods are 13% and 16% respectively. Studies also show that tariff pass-through is not only different in various sectors of economic but also are

different in various regions. Marchland's (2012) results show that coefficients of tariff pass-through are between 33% and 49% in rural areas and between 64% and 68%in urban areas. Kareem (2014) by studying the extent of tariff pass-through to domestic prices of agricultural and industrial products showed that domestic prices decreased due to high tariff pass-through. In addition, decrease in prices is more in states near the border and ports with lower business costs. Tariffs pass-through to domestic prices of agricultural products is an average 74%. In fact tariff acts as filter between world prices and borders price. When good is in the country, prices are influenced by internal factors such as trade and inputs cost and local competition. These factors weakens (or strengthen) the effects of trade policies such as tariff change on households, therefore border price changes don't transfers to household exactly. So effects of trade policies such as tariff changes are varies with respect to factors that influencing price transmission from world markets to domestic markets and an identical trade policy will likely have different results in different countries. For example, the official price (fixed price) for a specific good safe it's price from any external shock. Similarly, if infrastructures be weak (which implies high transport cost) price transfer may be little or even it doesn't exist in some parts of country. Also, competitive imported products and local preferences can reduce responsiveness of local prices to trade policy. Finally in weak competitive markets, changes in prices in border likely are absorbed by traders instead of moving to households (Jeffrey et al., 2004).Price changes are important factor for resource allocation, income distribution and poverty reduction. Tariff changes production motivation with change in relative prices. In other worlds effect of tariff changes depends on amount tariff change and extent of tariff pass-through to domestic prices (Tayebi and Mesrinejad, 2007). On another level of analysis, changes in tariff will be discussed through changes in household income (i.e. significant tariff changes lead to adjustments in factors market). According to Stolper and Samuelson theory, trade policy reforms, in addition to changes in prices, moves wages between skilled and unskilled labor based on geography regions, demographics and individual's characteristics. According to Stolper and Samuelson theory, trade liberalization increase labor income in developing countries with abundant unskilled labor. However, this forecast depends on some assumes such as full employment and competition in factors market. In practice, effect of trade liberalization (tariff reductions) on labor income is ambiguous and need to case econometric study. In developing countries labor market often are divided by skill, gender and geographical location, so wage and employment response to trade shocks may be different in each region. (Nicita, 2004). Among the studies in this field can be pointed out Galiani and Sanguinetti (2003), Keshavarz hadad and Nejati Moharami (2006) and Nikita (2009). They show that wage inequality increase with increasing in trade liberalization. Also Cherkaoui et al. (2011) study's represents wage increases from trade liberalization. This study shows that price of industrial goods impacted negatively on wages and price of agricultural goods impacted positively on wages. But in Kareem (2014) study, results showed a positive relationship between industrial and agricultural prices and wages, except interaction between agricultural prices and skilled labor that is negative. Marchand (2012) showed that skilled wages increase between 0.54 and 0.58 percent in rural areas and 0.50 percent in urban areas for one percent decrease in tariff. Unskilled wages increase around 0.33 percent in rural areas and between 0.07 and 0.10 percent in urban areas.

Agricultural is one of the main sectors that support in this sector is taken into consideration for various reasons, such as nature of this sector, higher risk, food security and nutrition. Because of important role of this sector, study the extent of tariff pass-through to agricultural prices and consequently wages is necessary. According to tariff harmonized system (HS code) agricultural sector consists 24 chapters (Import and export regulations and annexed tables, 2014)**.** In this study the main commodities in household basket (included chapters 2, 3, 4, 7, 8, 10, 11, 15, 16, 17, 19, 20,

21) aggregates in six groups: 1) Cereals, 2) meat, 3) dairy, 4) oils and fats, 5) fruits, vegetables and Pulses and 6) sugar. Extent of tariff pass-through to prices and wages changes from tariff changes will be studied for these six groups. Tariff changes for agricultural products are presented in figure 1 during the years 2005-2014. As shown in figure 1, it is observed that tariff decreased for almost all groups during period 2005-2014 except sugar. This suggests that government take steps to reduce tariff and extension international trade.



1-1- Cereals tariff

1-2- Meat tariff

1-3- Dairy tariff

1-4- Oils and fats tariff

1-5-Fruit, vegetables and Pulses tariff

1-6- Sugar tariff

Figure 1: Tariff changes for six groups over the period 2005- 2014

Study tariff pass-through to domestic prices and wage is important because specify how much of tariff changes leads to price and disposable income changes. So, the aim of this study is investigate extend of tariffs pass-through to agricultural prices and wage with regarding heterogeneity of region in urban and rural areas of Iran. Despite the fact that Iran has not experienced a broad trade liberalization policy and don't joined the World Trade Organization (WTO), result of this study will be useful guide for policymakers to identifying extend of tariff pass-through to agricultural prices and wages in different regions of Iran. For low income and developing countries such as Iran, where local markets may be exposed to high transport costs and often poor integration into international economy, regional aspects of price transition is important. Since market characteristics play an important role in determining extent of trade policy reforms pass-through to domestic prices, results of this study represents the ability or defect of regional markets in pass-through the border or international prices to domestic prices, thus, it is guidance for policymakers to reform structure of local markets before joined to World Trade Organization. On the other hand, Iran is a developing country with abundant labor, knowledge and understanding from possible positive or negative effects of this policy help policymakers to take appropriate decisions to take advantage of globalization and avoid anomalies resulting from increase in wage inequality.

Methodology

Extent of tariff Pass-through to prices

Generally theory of tariff pass-through is based on extensive literature of exchange rate pass-through, which explores change in prices of imported goods due to changes in exchange rate.

Incomplete exchange rate pass-through implies that exporters absorb a part of exchange rate changes as a markup (Campa and Goldberg, 2002).Tariff pass-through model will determine who much of observed prices changes can be directly attributed to tariff policy changes

To calculate the effect of tariff changes on prices, Nicita (2004, 2009) states that changes in domestic price of imported goods is determined with tariff change multiplied by price of imported good and adjusted by changes in exporter markup. In this model is used from trade cost to calculate the extent to which local markets reception to border price changes. This equation is as:

$$P_{gtr} = e_t PX^*_{gt}(1+\tau_{gt})TC_{gtr} = e_t(\phi_{gtr}CP^*_{gt})(1+\tau_{gt})TC_{gtr} \quad (1)$$

Where P_{gtr} is domestic price of imported good g in time t in region r, e_t is exchange rate, τ_{gt} is tariff, TC_{gtr} is trade costs, PX^*_{gt} is global price that is equal to cost of produce the goods (CP^*_{gt}) multiplied by mark up $\phi_{gtr} = \left(\frac{PD_{gtr}}{CP^*_{gt}e_t(1+\tau_{gt})TC_{gtr}}\right)^{\alpha}$, where PD_{gtr} is price of imported competitive products in region r, therefore:

$$P_{gtr} = \left(\frac{PD_{gtr}}{CP_{gt}(1+\tau_{gt})TC_{gtr}}\right)^{\alpha} CP_{gt}(1+\tau_{gt})TC_r \quad (2)$$

With taking logarithms from equation (2) will be obtained equation (3).

$$\ln P_{gtr} = \alpha \ln PD_{gtr} + (1-\alpha)\ln CP_{gt} + (1-\alpha)\ln(1+\tau_{gt}) + (1-\alpha)\ln TC_{gtr} \quad (3)$$

where $1-\alpha$ represents pass-through coefficient. Based on literature of pass-through equation (3) can be wrote as equation (4). In this equation is used from distance d as a proxy of trade costs, as it represents shortest distance between center of each region (or province) from borders that goods enter to country.

$$\ln P_{gtr} = \beta_0 + \beta_1 \ln X_{gt} + \beta_2 \ln Z_{gtr} + \beta_3 d_r + \gamma \ln(1+\tau_{tg}) + \gamma_1 \ln\{(1+\tau_{tg})d_r\} + \gamma_2 (\ln\{(1+\tau_{tg})d_r\})^2 + \mu_r + \eta_t + \varepsilon_{rgt} \quad (4)$$

In this equation, X_{gt} is control variable that is proxy of CP_{gt}, X_{gt} is global commodity prices of good g in domestic currency, Z_{gtr} is proxy of competitive imported products price (PD_{gtr}) that is vector of control variables such as local supply ($S_{gtr} = \frac{\sum_h P_{hrgt}}{\sum_h P_{hrt}}$, P_{hrgt} is production good g at time t in region r in household h), regional income ($RI_{tr} = \frac{\sum_h Y_{hrt}}{H_{rt}}$, Y_{hrt} is household expenditures h in region r, at time t, H_{rt} is the number of households in region r, at time t) and *agricultural producer price index as proxy of producer price*. μ_r و η_t represent region and time fixed effects respectively, ε_{gtr} is i.i.d error term. Year fixed effects are included in this model for control of time varying factors that are same for all regions and regional fixed effects are included for regional price differences. Parameter$\gamma = 1-\alpha$, is pass-through elasticity and γ_1 is adjusted for each region. Pass-through is complete if $\gamma = 1$ and pass-through is imperfect if $\gamma < 1$. $\gamma_1 = 0$, indicate that pass-through is same in all areas, $\gamma_1 \neq 0$ when regional prices changes with tariff change.

After estimating relationship (4), to obtain percentage change in prices following equation is used:

$$dp = \frac{\hat{P}_{gt_1r} - \hat{P}_{gt_0r}}{\hat{P}_{gt_0r}} \quad (5)$$

Where $\hat{P}_{gt_1r}$ is price estimates for last year and $\hat{P}_{gt_0r}$ is price estimates for first year that is obtained from equation (4).

In estimating is used from Deaton (1985) method that combined time-series and cross-sectional data as pseudo panel data. Reason to use this method is that time series of household surveys data doesn't exist. He states that it is possible construction pseudo-panel data by repeated of cross-sectional data (with individuals completely different from one to another) and obtained estimators similar panel data. In this method, each cohort be created using individuals sharing some common characteristics, then observations are constructed from average of each cohort.

Price-Wage elasticities

According to Nikita (2009), income equation for per household can be expressed as equation (6).

$$\ln w_{ijt} = \sum_{g,r,s} \theta^r \theta^s \ln p_{ij}^{g,r} \beta_{ij}^{g,r,s} + Z_{it}\gamma + H_{jt}\delta + \varepsilon_{ijt} \quad (6)$$

In this equation w_{ijt} is observed wages for person i in household j at time t, $p_{ij}^{g,r}$ is price of good g that person i is faced in household j in region r. Z_i are vector of individual characteristics and H_j are vector of household characteristics**.** θ^r و θ^s are dummy variables for residence and skills of workers, respectively. ε_{ijt} is error term**,** $\beta_{ij}^{g,r,s}$, γ, δ are coefficients that must be estimated.

To estimate, control variables have been added in model such as age, years of education, gender of labor, labor status as head of household, type of employment, regional dummy variable to control effects of geographical areas (dummy variable that takes value 1 if individual is a resident of province r and 0 otherwise). The model will be estimated for all individuals between 18 to 65 years old that reported their wages.

It should be noted that in equation (6) although dependent variables are individual wages (rather than average wages), it is possible that prices are endogenous relative to wages, so after estimating exogenous test, if prices are endogenous, instrumental variables will be used. Also, to reduce co-linearity likelihood, all groups will be aggregated in one group using expenditure share. Percentage changes in wages (dw_h) are calculated as follows:

$$dw_{hrt}^{s,u} = \sum_g \beta_{grt}^{s,u} dp_{ghrt} \quad (7)$$

In this equation, β_g is price-wage elasticity for good g from equation (6) and dp_{gh} is percentage change in prices that households faced it.

Results

Estimate the tariff pass-through

To estimate equation (4), first must be specified distance d. Based on import statistics divided with customs in various year, most volume of imports of these groups are from Imam Khomeini port, Amir Abad port, Martyr Rajai Customs, Lengeh port, Noshahr port, Bushehr port, Mashhad and Martyr Bahonar Customs. Since the main entry ports and customs scattered in different borders (north, south, southwest and east of country), so distance d is calculated as shortest distance from each province center to nearest main port. Table (1) presents results of estimating tariff pass-through model for six groups in urban and rural area based on GLS method and removing

heteroskedasticity. According to economic theory we expect that sign of tariff coefficient (γ) be positive and sign of tariff-distance coefficient (γ_1) be negative. In urban areas, coefficient of tariff pass-through for cereal is 2.3% in border. Also, tariff-distance coefficient for cereal is equal 0.031, and has expected sign. In other words, this coefficient shows that tariff change doesn't have any effect on cereal prices in about 741 kilometers away from nearest port ($\frac{0.023}{0.031} \times 1000$). Tariff pass-through coefficient for meat, dairy, fruit, vegetables and pulses and oils and fats are 9, 12, 17.7, 15.4 percent respectively. With increasing distance from border and ports, extend of tariff pass-through to prices reduces for cereal, meat, fruit, vegetables and pulses. Tariff pass-through coefficient for sugar is not significant in urban areas. These coefficients are between zero and 17 percent in urban areas. Small value of these coefficients indicates that consumers don't so many benefits from tariff changes. Also, extend of tariff pass-through to prices will reduce by increasing distance from border and ports.

Coefficients of control variables have expected signs. In urban areas prices of cereal, dairy, oils and fats, fruit, vegetables and pulses are positively and significantly linked with global prices. Also, agricultural producer price index has significant and positive effect on prices of cereal, oils and fats, fruit, vegetables and pulses and sugar. In case of local supply control variables, only prices of oils and fats decrease 6.7 percent with one percent increase in local supply. Finally effect of regional income control variables indicates that in urban areas with one percent increase in regional income, prices of cereal (15%), dairy (9.2%) and sugar (4.8%) decreases and prices of meat (3.2%), oils and fats (9.7%), fruit, vegetable and pulses (1.5%) increases.

Results of tariff pass-through in rural areas are reported in table (1). As you can see tariff pass-through coefficients have expected sign in all cases. Value of this coefficient for meat, dairy, fruit, vegetables and pulses are not significant. Tariff-distance variable coefficient in rural areas reflects that aren't regional differences across country. This finding is consistent with findings of Nikita (2004, 2009), in these studies weren't significant regional difference for agricultural products in all states.

Estimate the price-wage elasticities

In order to assess tariff pass-through to wages and estimate price-wages elasticity, first exogeneity of explanatory variables are tested. According to Hayashi C statistics (2000), null hypothesis based on exogeneity of price variables be rejected at 1% level of probability, therefore, to control the endogeneity, equation (6) are estimated with one lags of price variables as instrument variables. Results of estimating are presented in table (2) in two method, OLS and instrumental variable (IV). As well as to reduce the number of regional dummy variables, provinces are aggregated in 5 regions based on commonalities and neighbor.

As can be seen, control variables coefficient in both rural and urban areas is significant and has expected signs. Wage increase with increases in age, male wages are more than female household's heads wages in both rural and urban areas. Sectors of employment control variables (services, agriculture, industry and transport) are slightly different from each other in urban and rural areas. In both urban and rural areas minimum wages are in agricultural sector, while in urban areas highest wages are in industry, in rural areas it is related to transports (employment in agricultural is considered as a basic situation). In rural area high wages in transport are not surprising because of low or not development in industry and services and high transport costs.

Estimating the effect of food aggregated price on wages indicates significant and positive relationship between prices and wages in all regions of urban and rural areas. These results are matches with findings of Nicita (2004, 2009), Cherkaoui and et al. (2011) and Kareem (2014). Also sensitive of skilled labor wages to prices are more than unskilled labor wages. Recent finding is

opposite of Nikita (2004, 2009) and matched with Kareem (2014). In five regions of urban and rural areas, sensitive of skilled and unskilled labor wages to changes in prices are significant and are different in all regions.

Table 1: Results of tariff pass-through to agricultural prices in urban and rural areas

Product / Variables	Cereal	Meat	Dairy	Oils and fats	Fruit, veg. and pulses	Sugar
	Urban					
World price	0.198*** (0.041)	0.009 (0.009)	0.150*** (0.024)	1.28*** (0.076)	0.044** (0.017)	0.055 (0.048)
Agri. Producer inflation	0.259*** (0.019)	-0.007 (0.024)	0.017 (0.010)	0.489*** (0.060)	0.025 (0.016)	0.037* (0.021)
Local supply	0.020 (0.014)	0.044 (0.029)	-0.0008 (0.003)	-0.067*** (0.017)	0.001 (0.007)	-0.020 (0.013)
Regional income	-0.15*** (.028)	0.032 (.020)	-0.092*** (.012)	0.097** (.043)	0.015 (.014)	-0.048*** (0.018)
Tariff	0.023** (0.011)	0.090*** (0.009)	0.120*** (0.019)	0.154** (0.073)	0.177*** (0.014)	-0.006 (0.040)
Tariff*Distance	-0.031** (0.014)	-0.061*** (0.019)	-0.025 (0.020)	-0.003 (0.036)	-0.038*** (0.014)	-0.027 (0.022)
(Tariff*Distance)^2	1.16e-07 (0.00)	-9.80e-07*** (0.00)	-7.26e-07 (0.00)	-3.90e-06* (0.00)	1.60e-06*** (0.00)	2.45e-07 (0.00)
Constant	5.75*** (0.634)	6.05*** (0.466)	5.96*** (0.245)	-6.56*** (0.822)	3.82*** (0.274)	5.82*** (0.461)
R^2	0.34	0.134	0.356	0.329	0.221	0.078
	Rural					
World price	0.115 (0.123)	0.003 (0.118)	0.226*** (0.088)	0.319*** (0.127)	-0.108 (0.067)	0.044* (0.025)
Ag. Producer inflation	0.273*** (0.054)	0.222*** (0.046)	-0.097 (0.071)	0.094*** (0.031)	0.094*** (0.018)	0.043* (0.026)
Local supply	0.018** (.009)	-0.001 (.003)	-0.004 (.006)	0.052 (.041)	0.001 (.004)	0.011 (0.009)
Regional income	-0.199*** (0.061)	0.082** (0.036)	-0.075** (0.032)	0.053** (0.028)	0.015 (0.038)	-0.013 (0.028)
Tariff	0.074*** (0.027)	-0.044 (-0.044)	0.177 (0.107)	0.260*** (0.075)	0.016 (0.016)	0.127*** (0.053)
Tariff*Distance	-0.021 (0.030)	0.003 (0.023)	-0.035 (0.028)	-0.004 (0.031)	-0.053*** (0.018)	0.020 (0.036)
(Tariff*Distance)^2	6.65e-07 (0.00)	3.40e-07 (0.00)	-5.97e-07 (0.00)	-3.41e-06 (0.00)	-9.33e-07 (0.00)	-2.56e-06 (0.00)
Constant	6.67*** (1.21)	5.80*** (0.744)	5.56*** (0.774)	5.66*** (0.747)	5.08*** (0.499)	5.06*** (0.521)
R^2	0.094	0.106	0.09	0.045	0.161	0.043

(*, ** and *** are significant at 10%, 5% and 1% respectively and amount of in parenthesis are standard error)

Table 2: Results of price-wages elasticity in urban and rural areas

Variables	Urban		Rural	
	Wage regression (OLS)	Wage regression (IV)	Wage regression (OLS)	Wage regression (IV)
Food price- skilled in region 1	0.312 *** (0.008)	0.416*** (0.017)	0.234*** (0.007)	0.347*** (0.021)
Food price- skilled in region 2	0.316 *** (0.008)	0.420*** (0.018)	0.261*** (0.007)	0.386*** (0.020)
Food price- skilled in region 3	0.315 *** (0.008)	0.421*** (0.018)	0.250*** (0.007)	0.350*** (0.025)
Food price- skilled in region 4	0.318 *** (0.008)	0.416*** (0.018)	0.258*** (0.007)	0.392*** (0.020)
Food price- skilled in region 5	0.320 *** (0.008)	0.419*** (0.017)	0.264*** (0.007)	0.415*** (0.021)
Food price- unskilled in region 1	0.271*** (0.008)	0.308*** (0.018)	0.197*** (0.006)	0.268*** (0.017)
Food price- unskilled in region 2	0.275 *** (0.008)	0.314*** (0.018)	0.204*** (0.006)	0.272*** (0.017)
Food price- unskilled in region 3	0.263*** (0.008)	0.300*** (0.019)	0.204*** (0.006)	0.277*** (0.017)
Food price- unskilled in region 4	0.270*** (0.009)	0.313*** (0.019)	0.202*** (0.006)	0.268*** (0.017)
Food price- unskilled in region 5	0.270 *** (0.008)	0.312*** (0.019)	0.194*** (0.006)	0.260*** (0.017)
Age	0.637*** (0.009)	0.584*** (0.011)	0.429*** (0.010)	0.389*** (0.014)
Years of education	0.142*** (0.004)	-0.024 (0.017)	0.108*** (0.004)	-0.010 (0.019)
Gender	0.015* (0.008)	0.069*** (0.011)	0.282*** (0.012)	0.311*** (0.015)
Household head	0.180*** (0.006)	0.177*** (0.007)	0.084*** (0.006)	0.088*** (0.007)
Services	0.119*** (0.021)	0.054** (0.026)	0.126*** (0.014)	0.087*** (0.017)
Manufacturing	0.114 *** (0.021)	0.105***(0.026)	0.167*** (0.015)	0.147***(0.018)
Transport	0.093*** (0.021)	0.086***(0.026)	0.198*** (0.014)	0.184*** (0.018)
Constant	0.905*** (0.06)	1.06*** (0.124)	1.83*** (0.054)	1.76*** (0.107)
R^2	0.281	0.244	0.165	0.137
Statistics C		142.551***		107.54***
Shea partial adjusted R^2				
Food price lag- skilled in region 1		0.178		0.143
Food price lag- skilled in region 2		0.168		0.153
Food price lag- skilled in region 3		0.172		0.126
Food price lag- skilled in region 4		0.172		0.154
Food price lag- skilled in region 5		0.176		0.148
Food price lag- unskilled in region 1		0.157		0.202
Food price lag- unskilled in region 2		0.163		0.207
Food price lag- unskilled in region 3		0.155		0.205
Food price lag- unskilled in region 4		0.153		0.203
Food price lag- unskilled in region 5		0.155		0.202

(*, ** and *** are significant at 10%, 5% and 1% respectively and amount of in parenthesis are standard error)

Table 3: Percentage change in skilled and unskilled wages due to tariff changes in urban and rural areas

Wage changes / Province	Urban		Rural	
	Skilled	Unskilled	Skilled	Unskilled
Region 1	**-0.45**	**-0.33**	**1.12**	**0.86**
Tehran	-0.49	-0.36	-1.19	-0.92
Qazvin	-1.05	-0.77	1.99	1.54
Mazandaran	-0.86	-0.64	2.67	2.07
Semnan	-0.96	-0.71	1.05	0.81
Golestan	0.24	0.18	2.00	1.55
Qom	0.51	0.37	0.23	0.18
Region 2	**-0.07**	**-0.06**	**2.13**	**1.50**
Esfahan	1.04	0.78	2.60	1.83
Fars	-0.06	-0.04	3.38	2.38
Bushehr	-2.09	-1.56	1.53	1.08
Chaharmahal and Bakhtiari	0.88	0.66	2.03	1.43
Hormozgan	-0.54	-0.41	2.23	1.57
Kohgiloyeh and Boyerahmad	0.48	0.36	1.11	0.78
Region 3	**-0.09**	**-0.09**	**1.55**	**1.22**
East Azarbaijan	0.58	0.41	0.72	0.57
Western Azerbaijan	0.43	0.31	1.52	1.21
Ardabil	0.17	0.12	2.30	1.82
Zanjan	-0.21	-0.15	1.56	1.23
Gilan	-2.22	-1.58	0.70	0.56
Kurdistan	1.13	0.80	2.56	2.03
Region 4	**1.05**	**0.79**	**1.77**	**1.21**
Kermanshah	1.77	1.33	1.29	0.88
Elam	1.92	1.45	2.50	1.71
Lorestan	0.62	0.46	2.44	1.67
Hamedan	0.97	0.73	2.04	1.39
Markazi	0.47	0.36	0.82	0.56
Khuzestan	1.17	0.88	1.59	1.09
Region 5	**0.64**	**0.48**	**1.95**	**1.22**
Razavi Khorasan	-1.28	-0.95	2.18	1.36
Southern Khorasan	0.57	0.43	1.38	0.87
North Khorasan	-0.11	-0.08	1.37	0.86
Kerman	1.51	1.12	2.56	1.60
Yazd	1.45	1.08	1.92	1.20
Sistan and Baluchestan	1.97	1.47	2.27	1.42
All urban and rural area	0.268	0.202	1.71	1.21

Since the results of Hayashi C statistic represents that prices are endogenous, to calculate wages percentage change was used results of instrumental variable method. In table (3) is provided

effect of tariff changes in skilled and unskilled income in urban and rural areas. As price-wages elasticity of skilled and unskilled labor are positive in all regions, so the sign of wages changes depends on prices change. Since agricultural prices changes are various in different regions, wages of skilled and unskilled labor are affected differently by these changes. In urban area, wages changes from agricultural tariff change are different in various regions; an average in provinces of region 4 and 5 saw an increase in wages of skilled and unskilled labor. In other areas wages are decreasing. The results show, changes in real wages of skilled labor in urban areas is a little more than unskilled labor.

As shown in table (3) skilled and unskilled wages changes are different in various regions. Also increase in skilled wages is more than unskilled wages. Increase in skilled wages is an average between 1.43 percent in region 5 and 0.68 percent in in region 1. For unskilled labor, wages are an average in range of 1.50 percent and 0.86 percent in region 2 and region 1, respectively. The gap between skilled and unskilled wages in rural areas is more than from urban areas. Also in urban areas, reduction of skilled wages is more than unskilled wages.

At the national level, both in urban and rural areas, changes in tariff lead to increase in skilled and unskilled wages, but its effects is different in various provinces. Results show a very small increase in wages in urban areas (less than 0.5 percent), while compared to urban areas wages changes in rural areas are relatively high. So, tariff changes reduces wages gap between urban and rural areas. The results are consistent with Nikita (2009) that showed regional wages are influenced by access to foreign markets.

Results of real wages changes estimating shows that some workers benefit from tariff changes and others harmed. Results showed that in rural areas wages changes are increasing (in contrast to urban areas) due to weak or don't tariff pass-through to prices, but results are different in various provinces in urban areas.

Conclusion

This study examined relationship between tariff changes for major groups of agricultural goods and changes in agricultural prices and wage change from prices changes in recent decades in rural and urban area of Iran.

Results showed that tariff changes have different effects on price of agricultural goods and skilled and unskilled wages in urban and rural areas. So that tariff pass-through to agricultural prices is in range of zero and 17% in urban area and between zero and 26% in rural areas. This level of tariff pass-through is slightly smaller than what is in literature. For example Nikita (2009) has gained tariff pass-through to agricultural prices almost 33%. Cherkaoui et al (2011) has gained results about 13% and Marchand (2012) result show that tariff pass-through to agricultural prices are between 64 to 68 percent in urban areas and in range 33 to 49 percent in rural area. However results of this study is not unexpected, extend of tariff pass-through in developing countries such as Iran with limited infrastructure and incomplete markets can be lower.

Results of estimating agricultural tariff changes pass-through to wages in urban and rural area showed, changes in skilled and unskilled real wages are different in various regions, as in most parts of urban area these effects are reducing and some areas are increasing, but effects of these changes are increasing in all regions of rural areas. Increase in skilled wages is more than unskilled wages in rural areas. In urban areas skilled wages change (both increasing and decreasing) are more than unskilled wages. Contrary to Stolper and Samuelson theory, agricultural tariffs changes lead to further increase in skilled wages as well as increased inequality between skilled and unskilled wages in rural areas. In these areas due to poor or don't tariff pass-through to prices, average changes in

price is increasing, So wages are increasing in rural areas, therefore change in tariff is favor of worker and reduces wages gap between urban and rural areas.

An important result of this study is that any changes in trade policy will not be fully pass-through to consumers. Factors such as non-competitive markets, market failure and poor infrastructure may keep away households from positive effects of tariff changes in both urban and rural areas. Based on incomplete and low tariff pass-through to agricultural prices and wage, recommended that in future studies are examined extent the tariff pass-through to price of main economic sectors. It is necessary for Iran that similar studies made locally in all economic sectors before join to World Trade Organization, Therefore, it is recommended to policymakers that consider market price transmission mechanism, infrastructure situation and regional effect in adopting any trade policies.

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